**Training Resilience for High-Risk Environments:**
**Towards a Strength-Based Approach within the Military**


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**Content**

**Preface**

Stress and resilience are an inevitable part of a soldiers' life, particularly in combat or war. Training military personnel to be resilient and capable of coping under high (combat)stress has been core business in most armies. Traditionally, this training was directed at maintaining physical performance under (combat)stress: the ability to fight. Nowadays, growing attention is given to physical, mental, and moral resilience, with a focus on short-term as well as on long-term adjustment in order to prevent PTSD and other stress-related symptoms after deployment.

The 21st century has brought new challenges for military organizations, particularly in Military Operations Other Than War (MOOTW). These missions bring new stressors and strains, and require new forms of training. This chapter deals with the question of how peacekeepers can best be prepared to deal with psychological demands of the operational environment. To this end, the concept of resilience is of special relevance to the military, as well as to other high-risk occupations. We therefore provide an overview of what is currently known about resilience under stressful work environments. We specifically address the combination of *internal* as well as *external* resources for enhancing resilience. We review current evidence based- training and intervention methods to enhance resilience and provide examples of how resilience can be enhanced.

# 1. Resilience: Essential for Military Peacekeepers

*"Peacekeeping is not a soldiers' job, but only a soldier can do it".*
(UN secretary General Dag Hammarskjold, 1954-1961)

Military Operations Other Than War (MOOTW) have undergone a tremendous metamorphosis and have become increasingly complex and diffuse. Where peacekeepers were initially deployed to post-conflict areas and had a strictly neutral role, today, they are deployed at various stages of a conflict, ranging from low hostility areas to full-scale combat zones, with or without consent by warring parties and local military groups and warlords. As a result, their classic peacekeeper role has become the exception rather than the rule. Peacekeepers now have to be able to integrate two seemingly competing roles: the role as peacekeepers with the classic role of warrior (Broesder, Vogelaar, Euwema, & Buijs, 2009).These developments pose soldiers to a new array of stressful demands that are as much psychological as military or diplomatic.

It is widely accepted that operational demands may negatively affect the well-being of these professionals. Researchers and practitioners have therefore mainly focused on *avoiding* risks factors that have been associated with deployment-related pathology. However, it has recently come into attention that even though most soldiers face major challenges and stressors most soldiers do not develop mental health problems after deployment (Dickstein, Suvak, Litz, & Adler, 2010). Moreover, the majority look back on their deployment as a positive experience in which they learned a lot about themselves, made friends for live, gained new understanding of personal values and priorities, and provided them with the opportunity to meaningfully contribute to peace and violence prevention. And for most soldiers, these positive effects outweigh the negative (Mouthaan, Euwema & Weerts, 2005; Newby et al., 2005; Parmak, Euwema & Mylle, 2011; Schok, Kleber, Elands, & Weerts, 2008). These positive responses are attributed to the resilience of these professionals. Insights into these resilient responses are thus important as they offer an alternative pathway to successful adaptation by *strengthening* resilience factors that enable soldiers to successfully deal with operational demands.

In this chapter, we concentrate on the question whether resilience can be cultivated. We first briefly consider how resilience is conceptualized in the context of the military. We then explore *internal* and *external* resources for resilience and will specifically address the combination of these resources for enhancing resilience. Finally, we review studies of resilience interventions in stressful work environments and discuss currently used intervention-paradigms. Although the specific stressors differ, the combination of repeated critical incidents (CI) and chronic stressors are also typical for other first responders such as the police, emergency workers, or fire fighters (see for an overview Benedek, Fullerton, & Ursano, 2004). We will therefore also focus on other high-risk occupations.

## 2. Combining Internal Capacities and External Resources

We begin with defining resilience. In an effort to integrate the rapidly accumulating resilience research, Reich and colleagues (2010) recently published a comprehensive work on it. They concluded that resilience is best defined as the outcome of successful adaptation to hardships. Two equally important components are central to the meaning of resilience: *recovery* and *sustainability*. Recovery focuses on the healing of emotional wounds. It is indicated by the thoroughness and velocity of time needed to return to a former, more balanced, level of functioning. This does not mean that a resilient recovery is without its emotional scars, but psychological and behavioral functioning is beyond what may be expected given the circumstances. Sustainability on the other hand, refers to the capacity to maintain positive engagements with the environment and to maintain well-being while meeting the demands of the environment. It moves beyond the mere capacity to maintain competence when exposed to stressful events to also include the sustaining of personal interests in goals that give life meaning and bring feelings of pleasure.

These researchers also concluded that resilience should not be seen as a static, or trait-like capacity. Instead, successful adaptation to hardship involves the dynamic interplay between *internal capacities* and *external resources.* Internal capacities are natural character strengths someone possesses that enhance positive psychological functioning. External resources describe those aspects of the social environment that empower an individuals' capacity to respond in a positive way to adversity. This two-dimensional approach is important for developing resilience, as we will discuss later; interventions can and should be directed at strengthening internal capacities as well as environmental resources.

An important insight of resilience research is that the presence of positive affective states is not the same as the absence of negative affective states. Both can co-exist at the same time. Moreover, research shows that positive emotional engagements buffers against the negative effects of stress on well-being and health. Experiencing positive emotions after a stressful event for instance, accelerates physiological recovery and buffers against the development of depression (Frederickson, Tugade, Waugh & Larkin, 2003; Zautra, Johnson, & Davis, 2005). And individuals who derive a high sense meaning from their work are less burdened by high job demands as compared to those who are cynical about their work (e.g. Britt & Bliese, 2003; Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007).

Recognizing the relevance of resilience for the well-being of military personnel and mission success, the concept of resilience has grabbed the attention of the military organization. Based on the work by Reich and colleagues (2010), we use the concepts of recovery and sustainability to define military resilience. We include the ability to maintain optimal performance during an acute stress situation, as this is a crucial aspect of military work. The capacity to *sustain* combat motivation and a sense of being able to meaningfully contribute to the mission is especially relevant when confronted with violence by the local people, continually changing Rules of Engagement, or boredom. Recovery is of vital importance during deployment as there is evidently the potential of being exposed to repeated CI's. Being able to swiftly return to optimal level of functioning is pivotal when confronted with the next CI. Growth is especially important when confronted with significant setbacks and/or when coming to terms with deployment experiences. Hence, we define *military resilience* as:

*The ability to maintain optimal performance during acute situations, positively recover afterwards, and sustain combat motivation while meeting the demands of operational demands*

In the next paragraphs, we consider internal attributes and external resources that enable soldiers to respond with resilience.

**Internal Capacities**

We begin with describing personal capacities that have been linked with resilience. Indeed, some people just seem to be better able to sustain psychological and behavioral functioning when faced by challenging and demanding situations, and to recover afterwards. Researchers have started to investigate positive individual capacities and a clear picture is emerging as to how resilient soldiers are characterized.

### Self-confidence, Optimism, Perceived Control

Personal attributes that have repeatedly proven their value for military resilience are self-confidence, optimism, and feelings of control (e.g. Bartone, 1999; Gilbar, Ben-Zur, & Lubin, 2010; King et al., 1998; Pietrzak et al., 2010). First of all, these cognitive attributes enable soldiers to maintain optimal performance during acute situations because they have confidence in their skills to control the situational demands (Schok, Kleber, & Lensvelt-Mulders, 2010). Feelings of control and confidence empower to take action. As such, resilient soldiers proactively face difficulties with courage and perseverance and do not give up when faced with failure. They efficiently down-regulate negative affect enabling them to stay focused on their task and swiftly and effectively take action to get control over the situation. Successful mastery in turn strengthens resilience as it enhances confidence in one' capabilities, creating a positive feedback loop (Benight & Bandura, 2004).

Secondly, these attributes enable soldiers to sustain positive affective engagements during stressful times. The most powerful way through which self-confidence, optimism, and feelings of control seem to cultivate positive affective engagements is through construing positive meaning from adversity. By positively reframing difficulties and using humor soldiers are able to cope with the operational stressors and maintain combat motivation (Riolli & Savicki, 2010). Indeed, Britt, Adler, & Bartone (2001) showed that soldiers who are characterized by these attributes perceive their deployment work as more meaningful than soldiers who do not possess these attributes.

Finally, these attributes are also related to recovering from adversity (Britt, Adler, & Bartone, 2001; Schok et al., 2010). The capacity to construe positive meaning from difficulties is crucial for restoring or even improving psychological capacities after exposure to a critical incident as well as long term adjustment in coming to terms with deployment experiences. By finding personal relevance, soldiers are able to restore their self-esteem, regain a sense of mastery, and maintain a positive worldview and optimistic outlook on life. As a result, they are able to continue or resume active coping to overcome difficulties and facilitate connectedness with others and the world.

### Interpersonal Skills

Military work involves close coordination and team efforts to achieve mission objectives. As such, interpersonal conflicts are seen as an especially debilitating stressor of a soldiers' resilience. When soldiers are confronted with high pressure to perform, even a minor argument among soldiers can have a critical impact on team performance. Possessing strong interpersonal and communication skills that are necessary for effective teamwork is therefore an important resilience capacity. In addition, these skills are also important for promoting access to social support in times of stress (Skodol, 2010).

### Physical Fitness

Physical fitness has always been crucial for operational effectiveness to sustain performance in physically demanding environments. Besides importance of physical fitness for sustaining optimal performance, it has also been positively related to mood and self-confidence and has been linked to neurobiological effects that promote resilience (Cotman & Berchtold, 2002).

Taylor et al. (2008) for instance, showed that physical fitness buffered against the psychological impact of a stressful mock captivity exercise during US military survival training.

**External resources**

As mentioned, qualities of the person alone are not sufficient to predict resilience but also depend on empowering external resources. Especially the social environment can provide psychosocial resources that enhance soldiers' resilience. In the next paragraphs, we discuss the role of the team, leadership, family and organization as psychosocial resources for individual resilience.

### Team aspects

In MOOTW, military teams operate dispersed over relatively large areas and may rapidly switch locations. Several teams work together to achieve a shared goal in which every team is assigned a specific function. As such, the ability to work and live together as a team is crucial for operational effectiveness, individual survival, and the maintaining of personal well-being.

#### Morale and Unit Cohesion

A crucial component of military resilience that is specifically related to the team is morale. Morale refers to the enthusiasm and persistence of a soldier to the goals and tasks of his or her team (Manning, 1991). As such, military organizations agree that it is the driving force for obtaining mission success. Indeed, research has related morale with higher levels of operational performance (Britt & Dickinson, 2006), putting in extra job-efforts, organizational commitment, and combat readiness (Boxmeer, Verwijs, Euwema, & Dalenberg, 2010), and with finding more benefits after deployment (Britt et al., 2007). In addition, morale has been found to buffer against the negative effects of work-related stressors on work-family conflicts (Britt et al., 2005) and the development of duty-related PTSD after deployment (Iverson et al., 2008).

A prerequisite for morale is team cohesion (Boxmeer, Verwijs, Euwema, & Dalenberg, 2010). First of all, cohesion provides soldiers with a shared reality enabling them to make sense of their experiences and sustain meaningful engagements. Shared experiences of threats in combat, fraternal comradeships, team optimism, encouragement and good humor boosts morale (Mouthaan, Euwema, & Weerts, 2005). Another way in which cohesion contributes to morale is through team performance. Cohesive teams are characterized by trust and teamwork which provides soldiers with confidence in their personal capabilities and joint team efforts to successfully deal with situational demands, in turn enhancing morale and team performance (Chen et al., 2009; Jex & Bliese, 1999; Stetz, Stetz, & Bliese, 2006).

Conversely, a lack of cohesion may enhance psychological strain and decrease morale (Britt & Bliese, 2001; Britt & Dickerson, 2007; van Boxmeer, Verwijs, Euwema, & Dalenberg, in press). When faced with an acute stress situation, situational demands may become insurmountable and compromise problem-focused coping abilities. Reflecting on the situation, members may become disillusioned about the team abilities, making them vulnerable for the development of psychopathology. Strengthening the team is therefore an important way for preventing combat breakdown, and enhancing positive psychological adaptation.

#### Leadership

The importance of leaders for soldiers' motivation and performance is widely accepted within the military organization. Leaders directly influence the resilience of their soldiers by providing them with physical needs such as good equipment and living conditions. In addition, deployments are often characterized by highly unstructured tasks or uncertain relationships with corroborating parties, forming a risk for maintaining morale and operational effectiveness. Leaders can buffer these negative effects by being attentive to interpersonal and morale-related

team-issues. Indeed, team members who feel supported by their leader also report less interpersonal conflicts (e.g. Bliese & Halverson, 1998; Bliese & Britt, 2002; Cole & Bedeian, 2007; Griffith, 2002).

Leaders also play a key role in meaning making processes. They are the primary source for interpreting information and as such, have a strong influence on making sense of stressful experiences (Bartone, 2006; Britt, Davison, Bliese, & Castro, 2004). During a CI leaders have to interpret the situation and make decisions in the pursuit of the desired goals. Leaders can help their team to develop optimistic outlooks by emphasizing the collective responsibilities of team members for the safety and well-being of others and by conveying the proper utilization of their resources and desired outcomes.

Leaders facilitate group processes by providing their team with specific learning opportunities and feedback, and by encouraging and coaching soldiers about the use of knowledge and skills. By emphasizing the shared values in the team and showing that they have trust in their capabilities, leaders empower members' confidence in both their personal capabilities as well as their group capabilities (Shamir et al., 2000; Shamir et al., 1998).

### Organization

The military organization directly influences soldiers' resilience through its policies and training programs. Soldiers who feel well-prepared for their deployment task are better able to deal with operational demands (Bartone, 2006; Gilbar, Ben-Zur, & Lubin, 2010; Shamir, et al., 1998; Renshaw 2011). The organization can provide soldiers with a sense of purpose and meaningfulness by expressing mission objectives, and by providing task directions and priorities of assignments (Siebold, 2007).

Organizational culture influence military resilience by determining the accepted ways of coping. Dolan and Ender (2008) for instance noted that among U.S. soldiers drinking and seeking social support is widely accepted strategy to cope with stress. Ben-Ari (1998) observed that controlling emotions is central to officers' identities in the Israeli Defense Forces. Likewise, Le Scanff and Taugis (2002) identified an organizational norm within the police force that made employees refrain from showing or admitting fear or anxiety, because this was perceived as weak. Thus, some emotion-focused coping strategies, such as venting of emotions, seem to be less accepted in organizations like the military and police force.

Resources also refer to the availability and quality of instrumental resources that are crucial for their physical safety. Consider for example, the effect of a lack of air support for military teams in hostile areas, or the lack of proper vehicle protection against Improvised Explosive Devices on soldiers' confidence in their ability to manage stressful and threatening situations.

### Family Support

Soldiers are often deployed to remote locations and separated from their families for long periods of time. Besides the difficulty of missing loved ones, family members themselves can be very distressed, and soldiers are often concerned that their family worries about their well-being. Strong and cohesive families promote soldiers' resilience because they possess shared and empowering beliefs that facilitate options for problem resolution, healing, and growth. This enables them to sustain combat motivation and facilitates the recovery in the aftermath of deployment (King et al., 1998; Pietrzak, et al., 2010; Walsh et al., 2003).

The importance of family cohesion was demonstrated in an elegant longitudinal study by Benotsch et al. (2000). They directly investigated the effects of internal attributes and family cohesion on the development of PTSD symptoms after deployment to the Gulf War. Poor coping skills and low family cohesion before deployment predicted PTSD symptoms after deployment. Moreover, they also showed that soldiers with already high levels of PTSD symptoms before deployment even amplified the use of poor coping skills, and decreased family cohesion.

### 3. State-of-the-Art Interventions

Military organizations are currently developing preventive interventions that are explicitly based on a strength-based approach to positive adaptation. The US army for instance has recently initiated their "Comprehensive Soldier Fitness" program, Australia recently launched their "BattleSMART" (Self Management and Resilience Training), the UK army uses a peer support system (i.e. TRiM) to empower easy access to social support, and the Dutch defense provides in-theatre military leaders advice on how to enhance or sustain resilience. The second part of this chapter considers the interventions that have been designed to enhance resilience.

To determine the effectiveness of intervention approaches and gain insights into which resilience resources offer promising targets for intervention, we performed a systematic literature search on evidence-based resilience interventions. This yielded a total of 19 effect-studies within the police and military domain. As can be seen from table 1 and 2, we distinguished interventions that were designed to strengthen personal attributes from interventions aimed at strengthening external resources. In the following, we first consider the intervention approaches. Next, we discuss the resources of resilience that have been targeted by these interventions. We also describe four existing military training programs that illustrate ways to promote resilience within the military.

### Strength-Based Intervention

The concept of a strength-based approach has become a popular term in every day discourse. As such, it becomes more important to clarify what is it actually means. A strength-based approach aims to capitalize on strengths and resources that someone already possesses. A strength-based approach does not avoid risk or problems, but shifts the attention towards identifying what works for an individual to effectively deal with difficulties.

We identified three commonly used methods to train resilience: 1) a cognitive or knowledge-based approach to training, 2) a purely practice-based approach, and 3) a combination of cognitive- and practice-based approach to training. Cognitive or knowledge-based interventions aim at enhancing awareness and attitudes by providing information on a certain topic. Examples are briefs, discussions, computer-based trainings. Skill-based interventions only uses actual experience as a learning method. It is important to note the skills not only refer to behavioral skills but also mental skills (e.g. meditation, positive reframing). It is based on the idea that practicing in a real or simulated setting allows trainees to develop and integrate skills into their existing set of capacities. Skill-based methods are for example games and simulations, behavior-modeling, case studies, role-playing, or cognitive exercises. Finally, some interventions used a combination of cognitive- and skill-based methods.

### Strengthening Internal Capacities

The majority of the effect-studies concerned interventions that targeted personal resilience resources (table 1). Most of these interventions used a cognitive-based approach and were implemented at all stages during the career cycle. The most widely applied intervention method in high-risk occupations is "group psychological debriefing". An alternative approach that is gaining interest in military organizations are interventions that are cognitive and skills-based. One study was purely based on the practice of skills under increasing level of stressors. Finally, one study was found that investigated the effectiveness of behavior based training and Eye Movement Desensitization and Reprocessing (EMDR) based training. This intervention aimed to decrease daily work stress that results from inadequately processed emotional experiences.

*Strength-based approach*

Most interventions focused on enhancing awareness of stress and providing strategies that are have been shown to ameliorate stress. Down-regulation of stress or enhancing stress resistance

is of course of vital importance for optimal performance during critical incidents but as mentioned, resilience is not only characterized by the absence of stress or stress tolerance. It also involves the experience of positive meaningful experiences. Positive reframing and interpersonal skills were the most targeted resilience capacities. Focusing on goal-directed skills or the potential for goal-directed skills provides an important way to enhance resilience, especially when people are "stuck" in patterns of maladaptive functioning. However, promotion of positive goals and outcomes does not seem to be reflected or explicit target in a stress-management approach to resilience. Only one psychological debriefing was found that was specifically based on insights from resilience research (Adler et al., 2009). This briefing is therefore considered in more detail in "box 1". One cognitive and practice-based intervention was found that specifically used a strength-based approach to resilience (Jha et al. 2010). To provide an example of this type of intervention "Resilience XL" is considered in "box 2".

Box 1

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### Battlemind Debriefing

Returning from deployment soldiers have to come to terms with deployment experience and transition back into with the home environment. Soldiers have to adapt to new work duties, family life, and coming to terms with difficult deployment experiences. Post-deployment Battlemind-debriefings aim at enhancing transition from deployment to home. "Battlemind" has recently been developed by the US army and refers to "the soldier's inner strength to face fear and adversity with courage" (US army, 2008), which is comprised of self-confidence and mental toughness. New about post-deployment Battlemind-debriefings is that it does not focus on traumatic events but specifically focuses on positive adaptation. Psychological transition difficulties are positively reframed as a natural consequence of having developed effective coping skills related to deployment, and focuses on how these skills can be adapted (Adler et al., 2009).

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### Effectiveness

Except for cognitive-based stress-debriefing, all interventions positively affected different aspects of resilience capacities ranging from decreased stress, enhanced working memory capacity, to enhanced psychological hardiness and performance. This is promising as it indicates that individual resilience capacities can indeed be cultivated. Given the paucity of effects-studies, it remains difficult to draw conclusions about what method is best for enhancing soldiers' resilience capacities. The effectiveness of a cognitive based approach seems to be most controversial. Some scholars have even suggest that debriefing may have a detrimental effect on recovery processes (Bonanno, 2004; Emmerik, Kamphuis, Hulsbosch, Emmelkamp, 2002).These findings also suggest that actual practice might be a crucial aspect for the development resilience capacities. This is supported by a study by Jha et al. (2010) who found that practice time was the critical determinant for skill development. A meta-analysis on the SIT also showed that skills development improves as the number of training sessions increased (Saunders, Driskell, & Salas, 1996). Moreover, this study showed that knowledge and practice have effects on different aspects of resilience and are therefore equally important for the development of training protocols. More research needs to be done when developing training protocols.

### Individual versus Group Intervention

All interventions used a collaborative training-protocol, except for the EMDR-intervention. This is based on the idea that group training facilitates individual learning processes, highlighting the importance of feedback as a key aspect for learning. However, in reviewing the intervention methods, facilitating interaction between participants was not a focus of the training. Although

most interventions provide information on the importance of social support and interpersonal skills, it seems that interventions may enhance resilience even more by capitalizing on group interactions.

Box 2

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### *The Resilience XL Program*

TNO, the Netherlands' organization for applied scientific research, recently developed the Resilience XL program for Navy recruits to enhance positive adaptation during recruit training (Sixet al., in press). Resilience XL training comprises a cognitive-behavioral approach that covers cognitive, behavioral, and interpersonal aspects of functioning. Each aspect covers specific skills that have been shown to enhance resilience.

The program is integrated with Navy basic military training. At the beginning of basic training, established groups of recruits participate in an interactive 1-day workshop to increase understanding and awareness on resilience. As one of the main reasons for quitting basic Navy training is that basic training is not what recruits expected, there is a focus on expectation management as a way of dealing with the realities of basic training. Recruits discuss current expectations and are shown a short video of students from previous recruit training who share their own experience of the training. Recruits are also encouraged to actively manage their expectations by asking questions to available personnel and to support other members in doing so.

In addition, special attention is given to group processes. During a group-discussion, recruits consider the topics "coping with difficult situations," "supporting group members," "instructor responsibilities," and "recruit responsibilities." These discussions enable groups to develop a shared language to talk about difficult topics, and facilitate the access to social support.

Stressful exercises during Navy basic training allow recruits to directly practice newly learned skills. Instructors explicitly encourage recruits to reflect upon their experiences and actively try to use new coping strategies. Finally, recruits participate in two "reinforce" sessions of 2 hours. In these sessions, recruits are encouraged to share and reflect upon their past experiences. These 'reinforce' moments are planned in a period that is known to be stressful, to enable recruits to reflect on immediate experiences

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Table 1: Effect-studies on enhancing personal capacities

| Method / *Phase* | Intervention | Targeted resilience resources | Effects | Authors |
|---|---|---|---|---|
| **Cognitive-based approach**<br><br>*Recruit training* | Large group counseling | - Recognizing and verbalizing psychological difficulties<br>- Enhancing psychological safety | Feelings anger decreased, feelings of pleasantness increased. | Rocco et al. (1975) |
| | Stress-Management discussion group | - Expectation management<br>- Realistic appraisal & adaptive coping strategies | Positive state of mind increased, distress decreased. | Cohn et al. (2008) |
| *Pre-deployment training* | Pre-deployment stress debriefing | - Stress awareness & stress reduction<br>- Enhancing morale<br>- Accessing external resources | No clear effects | Sharpley, et al. (2007) |
| *During deployment* | Critical Incident Stress Debriefing | - Stress awareness<br>- Adaptive coping strategies<br>- Fostering emotional sharing | Positive effects only for those with high stress exposure | Adler, et al. (2008) |
| | Stress-management education group | - Stress awareness<br>- Adaptive coping strategies | No clear effects | Adler, et al. (2008) |
| *Post-deployment* | Critical Incident Stress Debriefing | - Stress awareness<br>- Adaptive coping strategies | No clear effects | Adler et al. (2009) |
| | Battlemind-debriefing/training | - Stress awareness<br>- Recognizing psychological difficulties<br>- Enhancing interpersonal trust<br>- Accessing external resources<br>- Positive reframing & adaptive coping strategies | Positive effects only for those with high stress exposure | Adler et al., (2009) |
| *During regular operational work* | Internet-based self help Training | - Stress awareness & stress reduction<br>- Healthy lifestyle<br>- Positive reframing & adaptive coping strategies<br>- Interpersonal skills | Stress decreased. | Williams et al. (2009) |
| | Stress-management education group | - Stress awareness & stress reduction<br>- Healthy lifestyle | Anxiety decreased. | Le Scanff et al. (2002) |

Table 1: Effect-studies on enhancing personal capacities

| Method / *Phase* | Intervention | Targeted resilience resources | Effects | Authors |
|---|---|---|---|---|
| **Cognitive- and practice- based approach** | Stress Inoculation Training (SIT) | - Stress tolerance<br>- Adaptive coping strategies | State and situational anxiety decrease performance increased under stress. | Saunders et al. (1996) |
| *Recruit training* | Mental imagery training* | - Stress awareness & stress reduction<br>- Adaptive coping strategies | Performance increased. Negative mood and stress decreased. No effect on positive mood. | Backman et al. (1997)<br>Arnetz et al. (2008) |
| *Pre-deployment training* | Mindfullness Training | - Cognitive control<br>- Negative emotion regulation | Working memory capacity increased, but only for those who practiced a lot in mindfulness exercises. | Jha et al. (2010) |
| *During regular operational work* | Integrative Training of Emotional Competencies (iTEC) | - Emotional awareness<br>- Emotion regulation | Acceptance and tolerance of negative emotions increase. No effect on negative affect, positive affect increased. | Berking et al. (2010) |
| **Practice-based intervention**<br><br>*Recruit training* | Graduated training: performance under gradual increase of realistic stressors | - Self-efficacy<br>- Commitment<br>- Challenge appraisal<br>- Sense of control<br>- Adaptive coping strategies | Performance and psychological functioning increased. | Zach et al. (2007) |
| **Eye Movement Desensitizing Reprocessing**<br><br>*During regular operational work* | EMDR Training | - Cognitive processing of emotions | Psychological difficulties decreased. No effect on general psychological functioning. | Wilson et al. (2001) |

\* 2 studies

## Strengthening Environmental Resources

Only three effect studies were found that targeted external resources (table 2). All were cognitive- and practice-based interventions. Two of these studies aimed at developing effective leadership, and one intervention was aimed at enhancing peer-support.

Supporting research findings on the importance of leadership for military resilience, leadership training indeed proved to be an effective way to increase personal resources. However, most military organizations do not provide their military leaders with training on how to manage the stressors of their team members, or enhance resilience in a structural way (Adler et al., 2008). Training leaders how to facilitate group processes and cohesion therefore seems highly fruitful. An example of an intervention that aims to raise leadership awareness about levels of moral and cohesion is described in Box 3.

The fact that we only found three effect studies highlights the need for more research on interventions that target the external resources of the individual. Moreover, new interventions need to be developed that use the full range of external resources. For instance, although most interventions stress the importance of social support and team cohesion, except for TRiM, we found no mention of research on interventions that explicitly aim at increasing collective team resilience, enhance organizational processes, or facilitate family resilience.

Table 2: Effect-studies on strengthening environmental resources

| Resources | Intervention | Effects on resources | Effects on individual resilience | Authors |
|---|---|---|---|---|
| Leaders | Transformational Leadership Training* | Leaders had more acceptance of group goals, appreciation of teamwork, reward contingency, and individual consideration | Self-efficacy increased among direct followers. Performance increased among indirect followers. Lower attrition rates. | Dvir et al. (2003) Hardy et al. (2010) |
| Peers | Trauma Risk Management (TRiM) | Peers had more recognition of psychological difficulties, and offered more social support | No effect on psychological health to those exposed to a critical incident or on mental health stigma | Frappel-Cooke, et al. (2010) |

* 2 studies

Box 3

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**Morale monitor of Dutch military teams**

In the Netherlands' Army military leaders work closely together with psychological support professionals to enhance and maintain morale and capitalizing on strengths within teams during the deployment cycle. To this end, the Defense Services Centre Behavioral Sciences developed a practical measure that provides specific in-time information to military leaders concerning the level of morale of their team.

The measure assesses resources that have been shown to be important for morale at the level of the individual, the unit, the organization, and leadership. Resources at the level of the individual are: self-confidence, job-satisfaction, and home front support. Resources at the level of the unit are: identification with the unit, cohesion, and respect for each other. And finally, resources at the level of the organization are: weapons and equipment, operational support, familiarity with the mission and terrain, living conditions, and communication with the home front. The measure also assesses a set of stressors that are specific for the environment. This way, morale and distress are assessed separately, making it possible to capitalize on strengths and addressing signs of psychological distress.

Morale and distress are structurally assessed and analyzed at the level of the unit during pre-deployment training and during deployment. The results of the assessments are immediately feed back to the commanding officer. The scores on the different resources determine the advice that given how to maintain or boost morale. By measuring psychological distress and potential stressors it is possible to detect psychological distress and its causes in specific units across the deployment cycle. Officers recognize their best performing and most cohesive teams, and the outcomes of the assessment. Most relevant in this respect is that it seems that capitalizing on- or addressing unit-level resources by investing in the quality of leadership may be highly effective and efficient to promote individual and group well-being.

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**4. Conclusion**

In this chapter, we introduced the concept of resilience as especially relevant for soldiers as they nowadays operate in cumulative stressful environments. Resilience is different from traditional approaches to building, maintaining and restoring soldiers' adaptation capabilities, because it focuses on positive adjustment besides the absence of pathology after a potentially traumatic event. We introduced the definition of military resilience the ability to maintain optimal performance during acute situations, positively recover afterwards, and sustain combat motivation under chronic stressful circumstances. Whether a soldier is resilient depends on the available internal and external resources. Several internal and external resources have been identified. However, not many studies have investigated the interplay between internal and external resources. More knowledge on the combined effects of these resources could provide valuable insights in how to best enhance military resilience.

We discussed existing resilience interventions for personnel in high-risk occupations. Most interventions focused on individual resources and were based on cognitive principles that aim to enhance awareness and knowledge that will enable a soldier to better cope with stressful situations. Although these interventions addressed the positive adaptation perspective of resilience, the full range of resources has yet to be capitalized upon. In addition, only a few interventions explicitly aim to enhance resilience through external resources. Future interventions should include the positive adaptation perspective and address external resources to enhance effectiveness of resilience interventions.

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