Contributions to Operational Psychology: Psychological Training Model in the Context of Stress Management for Specialized German Military Police Personnel and Specialized Police Personnel

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Abstract

The service of specialized and special forces of the Federal Armed Forces and police is characterized by complex situations. Such personnel often face numerous difficulties and extreme danger and experience periods of high stress when fulfilling their tasks. In the context of social and technological changes, it is necessary to explore the individual components of stress management in further detail, i.e., stress prevention, stress control, and stress coping mechanisms, and furthermore to consider these elements in the fields of training and service. For this purpose, a stress management model was created based on participant observations, expert ratings, and problem-centered interviews with specialized members of military police and special police forces. The results of the validation can be interpreted as suggesting that effective stress management requires a diverse range of techniques and methods, including the use of digital means such as e-learning, digital reality, and eye tracking, in order to be able to address new demands appropriately.

Keywords Stress management · Specialized forces · Training · Resilience · Digitalization

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Introduction

Specialized and special military and police forces focus on certain capability areas. The availability of highly proficient skills enables these forces to fulfill diverse types of operations and missions. Specialist areas of the German military police include personal security and close protection, inquiries and investigations, precision gunnery, working dog handling, search-and-seizure operations, aviation security, motorcycle escort, and detention duties.

The operational environment of specialized and specialist personnel fulfilling (military) police tasks is characterized by unpredictable, unclear, ambiguous, and complex scenarios. Among other aspects, they involve contact with perpetrators in the context of threat prevention, or the fight against crimes that are increasingly committed by technological means, e.g., cybercrime. This can result in a wide range of stress reactions that may contribute to maladaptive effects at the cognitive, emotional, physiological, or behavioral levels in the short and long term. Examples include concentration disorders, perceptual constrictions, anxiety and a feeling of loss of control, increased blood pressure

or stomach problems, and social withdrawal or aggression (Lorei and Hallenberger 2014).

It appears indispensable that the personnel of specialized and special forces (cf. Noetzel and Schreer 2007) receive individualized and specialization-oriented training in stress prevention, control, and coping to prepare them for the particular challenges associated with their deployment and to continuously maintain and enhance such abilities during deployment situations and in further training. New developments and technological progress in the areas of e-learning, digital reality, and eye tracking also have a special impact in this context.

The support provided by digital tools can make training more interesting, more attractive, and more sustainable, which can be particularly important in terms of generational change (Eltemerov and Fedorova 2020). In addition, virtual reality can be used to create a wide variety of environments and scenarios close to reality without endangering personnel or materials (Pallavicini et al. 2016).

Theoretical Framework

The definition and practical use of the terms stress and stress management vary between different theoretical approaches and psychological sub-disciplines (Rusch 2019). The classification in this paper, which differentiates between stress prevention, control, and coping, has received little empirical attention. Yet this differentiation is quite reasonable, because each of these elements requires different educational and training methods. Furthermore, it is known that effective stress management is a guarantee for success on operations as well as for long-lasting mental readiness and resilience (Robson and Manacapilli 2014).

Resilience is defined as psychological resistance that enables a person to cope adequately with and emerge from a crisis situation without being mentally weakened (Masten 2016). For the purpose of this paper, crisis situations are considered acute or prolonged events or life circumstances with a high load of stress (high-stress phases), which may also include traumatic experiences.

Resilience Concept

Resilience is considered a trainable or modifiable trait, and accordingly, various interventions and techniques have been developed with the aim to strengthen the psychological resilience of operational forces (Andersen et al. 2015). Based on the theory of Masten (2016), a resilience concept has also been designed for the German military police. In the context of a challenge-overload balance, Masten introduced impact domains that establish a link between stress and coping. The theory considers moderate levels of stress as challenging. Successfully coping with moderate levels of stress strengthens resilience competence, i.e., it helps the person to cope more adequately with future, resulting, and subsequent stressful situations. Resilience does not develop from the avoidance of stress, but from successfully coping with stress situations, even with unexpected ones.

Based on these theoretical considerations, the Department of Applied Military and Operational Psychology of the Military Police Command in Hanover developed a "Multimodal Resilience Concept for Military Police with Specialized Capabilities and Police" (Gorzka et al. 2021). The concept includes the following facets:

- Stress management and self-reflection (stress prevention, stress control, stress coping)
- Utilization-specific skills (sensory motor, cognitive motor, cognitive, linguistic, and perceptual skills)
- Adaptation (readiness to adapt, emotion regulation, soft skills)
- Potential (learning and development potential, subjective and objective performance limits)
- Internal frame of reference (values, value change, attitude change)
- Social environment (real and digital social environment, social media).

It is important to emphasize the role of stress management for the entire concept of resilience. Adaptive or successful dealing with stress makes an essential contribution to the advancement/development of (work-related) psychological resilience (Gorzka 2018).

Stress and Stress Management

Traditional theory describes stress as a non-specific physical reaction caused by strains (Selye 1982). Examples of physical reactions include sympathetic stimulation or catecholamine and cortisol release, which serve to rapidly provide energy reserves (Gidron 2019). Stress is also often differentiated in terms of temporal progression. Schulz and Schlotz (1999) differ between acute and chronic stress. According to their definition, acute stress describes a one-time and often extraordinary stress situation with a sudden and recognizable beginning, a relatively short duration that is associated with new demands and changing environmental conditions. In contrast, chronic stress is described as episodic and recurring stress, which usually has an insidious beginning and a long period without a recognizable end.

In their transactional stress model, Lazarus and Folkman (1984) focus on cognitive mechanisms and assume that stressors produce different effects subject to an individual's internal appraisal processes ([1] of the situation and [2] of the individual resources). Any stress response triggered by the cognitive appraisal processes initiates several

biological reactions in the organism (Kumar et al. 2013). In particular, the sympathetic-adrenal medullary system and the hypothalamic–pituitary–adrenal axis are activated, which causes a release of the "stress hormones" adrenaline, nor adrenaline, and cortisol (Gidron 2019). This also initiates adaptive physiological processes, such as increased heart rate and increased oxygen delivery to the brain and muscles, which can temporarily raise the individual's performance level (McEwen 2017). Overloading of these two endogenous regulatory systems can lead to wide-ranging consequences, which are not limited to the physiological level; they may also affect our thinking and behavior (Gidron 2019). Moreover, several studies proved that stress negatively impacts on visuospatial memory performance and working memory (Morgan et al. 2006) as well as on attention, hand–eye coordination, and decision-making processes (Staal 2004). It is evident that acute periods of high stress can also induce relevant impairment at several levels and increase the risk potential (Lorei and Hallenberger 2014).

Episodes of prolonged stress can be equally momentous. If the activation state exceeds an individual's regular reference ranges in terms of intensity and duration, there may be dysfunctions in the response mechanisms of the described stress axes. Such dysfunctions are accompanied by a permanently increased release of stress hormones, which can have an immunosuppressive effect and subsequently cause psychological as well as somatic symptoms (Rusch 2019). Permanent stress is considered a possible trigger or significant risk factor, e.g., for cardiovascular diseases, infectious diseases, migraine/headaches, or inflammatory bowel diseases (Gerber and Schilling 2018). From a psychological perspective, long-term stress can be seen as a cause, maintaining factor, or consequence of stress-associated diseases, such as adjustment disorder, affective disorder, stress disorder, or PTSD (Heinrichs et al. 2015). It should be noted that the effects of chronic stress exposure themselves can be a stressor and may additionally impair stress management (Kohlmann et al. 2021). It seems that specialized training in stress management is essential for counteracting such potential impairments.

Stress management is generally understood as a generic term that includes methods and techniques for reducing and relieving psychologically stressful situations (Kaluza 2018a). The goal of stress management is to achieve a healthy response to external and internal stressors, not to avoid exertion. Rather, it aspires to a conducive use of one's own strengths to deal with emerging demands and stresses (Kaluza 2018a; Semmer and Zapf 2018).

Research in the field of operational psychology confirms that people do not only change their methods of dealing with stress over short periods, but also over long periods of time (Gorzka 2018), i.e., there are situational

as well as age-dependent signs of adjustments in cognitive, emotional, and behavioral structures in stress management (Gorzka 2017). Thus, long-lasting, complex, and challenging periods of high stress require an increase in individual stress management. In addition, inter- and intra-individual differences take a decisive role in stress tolerance. Inter-individual stress tolerance describes the differences between individuals, whereas intra-individual stress tolerance describes the differences in stress handling during different tasks. For instance, several members of the executive forces react differently in the same situation, and the same person reacts differently in different situations.

State of Research on Stress Management Programs

Based on a 12/20/20 research in the PsycINFO, PubPsych, Web of Science, and LIVIVO databases, 38 topic-specific articles were identified. The German search terms "Stressmanagement," "Ausbildung," "Polizei," and "Militär" as well as synonyms and related terms such as "Training," "Programm," or "Bundeswehr" were used. English translations of the German terms were also applied. We specified the results with a focus on articles published in journals since 2000. Only full-text articles qualified that were openly accessible and described as an empirical study on stress management training in the police/military environment, either in the title or abstract or both.

A look at the scientific discussion of stress management training shows a diverse picture. Programs are validated and evaluated in different contexts. Accordingly, the methods used for training, e.g., theory lessons/seminars (Potter et al. 2009) and realistic scenarios (Ilnicki et al. 2012) as well as the training contents, vary and focus either on conveying general information on stress (Oliver and Meier 2009) or applying specific stress control and coping methods (Stetz et al. 2007). In both the police and military, there are substantial differences in the duration of training, ranging from a few hours (Deahl et al. 2000) to several weeks (Millegan et al. 2019), in the number of subjects, and in the methods of data collection (qualitative–quantitative). In addition, the focus is also on different levels such as the individual, group, or organizational level (Le Scanff and Taugis 2002). Also, the results of the studies are very heterogeneous. Some studies showed significant differences in pre- and post-measurements in different domains, such as subjective perception of stress level (Anshel and Brinthaupt 2014), performance (Zach et al. 2007), or emotional intelligence (Romosiou et al. 2019), while other research did not find any significant changes (Patterson et al. 2012). However, the validity of the individual studies has to be reflected critically. Difficulties can arise from, e.g., the different considerations

and definitions of stress and stress management. For example, some interventions only focused on coping and did not consider all three aspects of stress management as described above. However, the vast majority of studies agree that the areas of stress management effectiveness and evaluation of stress management programs require further research.

Overall, it can be concluded that there are specific stress management programs for the various areas of law enforcement and the military and that each specialized operation domain requires specific training that is tailored to the individual requirements and needs of the relevant executive forces.

German Military Police Stress Management Model

Many military- and police-specific interventions designed to strengthen resilience are predominantly oriented toward the goal of reducing the individual's stress response to stressful events and increasing the perception that such events can be planned for and controlled. Therefore, the effective handling of stressful situations is of particular importance. The stress management model combines stress prevention, stress control, and stress coping (see Fig. 1). These individual elements of stress management have different functions, vary in effectiveness, and, above all, require different approaches to training.

Concept

During the development of a resilience concept for the German military police, special attention was paid to the area of stress management. The design of a stress management model and its validation took place in two phases. The conceptual preparation was based on existing findings from operational psychology research. The validation for the specific target group was performed in several steps:

1. Initial assumptions were made in a bottom-up process involving a 23-week observation of specialist police personnel. For this purpose, we applied the method of participatory observation (Hauser-Schäublin 2020). Initial assumptions were that the individual domains of prevention, control, and coping differ from one another and that different techniques can be assigned to each domain. In addition, it was assumed that these techniques used inter-individually and varying efficacies are perceived. After the participatory observation, the data were compiled and a first model was created.

2. The elaborated basic concept of the stress management model was subsequently validated in an expert rating (Döring and Bortz 2016). The participants were experienced psychologists from police psychology, applied military psychology, and researchers. All results were protocolized and analyzed, which allowed to consider the content validity.

3. Validation for the target group involved interviews with specialized personal of the German military police. The problem-centered interview method according to Witzel (2000) was applied, followed by a qualitative content analysis (Kuckartz 2018). Additionally, workshops with German military police instructors of the respective specialization areas were held to validate the viability of the implementation in training and to identify any need for optimization. In addition, the results were recorded and evaluated here as well. The entire validation process of

Fig. 1 Graphical illustration of stress management based on Steingräber (2020)
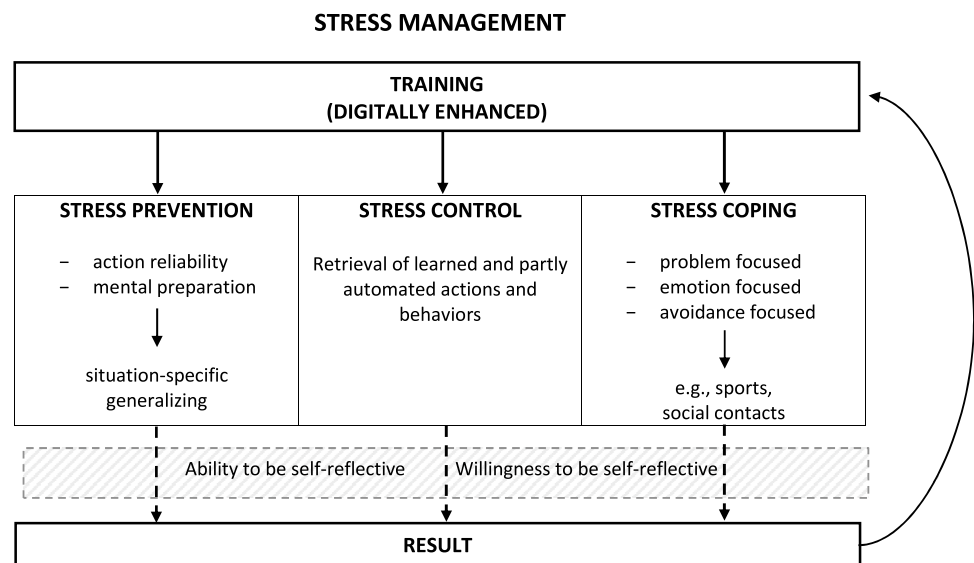
the stress management model was carried out in compliance with the ethical guidelines and legal basis of the German Data Protection Regulation (DGSVO).

Description

Stress Prevention

Prevention aims to prevent stress from the very beginning, e.g., by strengthening resources (Zimmermann and Kowalski 2012). Highly specialized personnel usually has already a higher tolerance to stress but should be adequately prepared also for any longer periods of high stress (Ungerer and Ungerer 2008). Primary prevention attempts to strengthen the coping strategies as well as the resilience of potentially vulnerable individuals prior to traumatizing stress exposure in order to mitigate or prevent the development of (stress) symptoms and reactions, such as perceptual constriction or headaches (Zimmermann and Kowalski 2012). In this context, methods such as stress inoculation training according to Meichenbaum (2012), tactical visualization (Robson and Manacapilli 2014), or mental training are applied, which can be used to accelerate learning or even to stabilize, optimize, and automate movements or sequences of actions (Mayer and Hermann 2015), and also psychoeducational approaches (Zimmermann and Kowalski 2012) are used. Secondary prevention starts after a confrontation with potentially pathogenic stress and aims to improve coping mechanisms and strengthen resilience (Zimmermann and Kowalski 2012). For example, it is mandatory for deployment returnees to participate in a 3- to 5-day post-deployment briefing.

With regard to stress prevention, the validation phase focused in greater depth on stress inoculation training with an emphasis on specialized components (driving training) in the training of personal protection professionals.

Excursus: Automatisms Constant practicing, exercise drills, and automatization are also considered stress prevention, because in terms of the Perceptual Load Theory (Lavie 2005), the performed actions take up less cognitive capacity. This can be especially important in high-risk situations, because the more demanding and complex the requirements, the more cognitive capacity is needed to process all relevant information (Lavie 2005). Therefore, it is useful to develop certain non-intentional or automatic actions, because such actions are triggered involuntarily, not accessible to consciousness, and therefore do not reduce cognitive capacity (Strobach 2020).

Stress Control

If coping possibilities are judged to be sufficient in a stress reaction, the situation can be interpreted as a challenge and thus evoke positive emotions (Delahaij et al. 2006; Lazarus and Folkman 1984). However, if the cognitive appraisals detect any discrepancies with regard to coping capabilities, i.e., the demand overwhelms the coping capabilities, the situation is interpreted as a threat and can trigger negative emotions (Delahaij et al. 2006). In order to be able to act effectively in an acute stressful situation perceived as a threat, it is necessary to have appropriate resources, such as stress control techniques (Ungerer and Ungerer 2008). Stress control, also comparable to concepts of stress regulation, short-term stress management, or self-control, aims to control physical and mental arousal in stressful situations, avoid symptom stress, develop increased stress tolerance, and facilitate effective action. Kaluza (2018b) emphasizes two aspects in stress control: firstly, that it is important to recognize the individual stress signals at an early stage, and secondly, that the clearer and more consciously one decides to accept the situation, the easier it is to focus on stress regulation.

Possible stress control techniques according to Robson and Manacapilli (2014) are:

1. Goal setting/segmenting: This refers to strategies that can be used to focus attention and resources on a goal or to divide goals into smaller, more manageable components.
2. Arousal control: This item receives the most attention in stress inoculation training and is concerned with controlling the physiological effects of a stress response. The focus includes techniques to control breathing, such as tactical breathing, or control heart rate.
3. Self-talk: The aim of self-talk is to control one's own internal dialogues and is based on the ABC model of Ellis and Dryden (1987). The model represents a method, which is primarily aimed at the restructuring of irrational thoughts and beliefs. This method is closely related to positive self-verbalization and self-instruction. It aims to change self-instruction so as to lead to problem-focused coping behaviors and help to reduce arousal in stressful situations (Siebecke and Kaluza 2014).

With regard to stress control, the workshops and problem-centered interviews emphasized cognitive methods such as positive self-verbalization and self-instruction, as well as breathing techniques.

Coping

Coping is the third element of stress management and includes all efforts and endeavors to cope with demands as well as all reactions aimed at endurance, avoidance, tolerance, or denial (Lazarus and Folkman 1984; Kaluza 2018b). It starts after a stress peak or during chronic stress and can be described as a kind of regulatory process

that ensures a balance between the actual state caused by the stress and the desired state (Gorzka 2018). Due to the fact that there is a variety of classification systems with regard to stress coping mechanisms (Skinner et al. 2003), the following distinction based on the transactional stress model of Lazarus and Folkman is made.

1. Problem-focused coping attempts to change the stress-triggering situation through specific active actions and problem-solving (Lazarus and Folkman 1984). This may involve changing the problem externally (resolving a conflict) or internally (adjusting goals) (Semmer and Zapf 2018). Other examples include the intense search for information or the focused analysis of the problem and selection of subsequent actions (Gorzka 2018).
2. Emotion-focused coping centers on stress-related emotions and attempts to regulate them (Lazarus and Folkman 1984). This can involve a variety of strategies, ranging from positive reinterpretation and acceptance to denial (Gorzka 2018). Common actions include talking, exercising, or relaxation exercises (Semmer and Zapf 2018).
3. Endler and Parker (1990) pick up these two forms and add the category of avoidance-oriented coping to stress management. Avoidance-oriented coping can be defined as activities or cognitive changes that pursue avoidance of the stressful situation. These include mechanisms such as denial, trivialization, or seek escape by indulging in other activities (Kohlmann et al. 2021).

Excursus: Relaxation Techniques Siebecke and Kaluza (2014) point out that relaxation and recovery measures are also an integral part of functional stress management. Specific relaxation training pursues different goals. These include controlling arousal in acute stress situations, recovering from and compensating for the consequences of long-term periods of stress, or promoting a more mindful inner attitude (Kaluza 2018b). A subdivision can be made into systematic and unsystematic relaxation techniques. Systematic relaxation techniques can achieve their effect on the muscular (e.g., through progressive muscle relaxation), vegetative (e.g., through autogenic training), emotional (e.g., through suggestive music), or cognitive level (e.g., through meditation) (Wagner-Link 2010). Unsystematic methods for relaxation are activities that are used individually, such as massages, reading, or enjoying hobbies (Wagner-Link 2010). However, Siebecke and Kaluza (2014) emphasize that well-being, which is promoted by unsystematic techniques (e.g., leisure activities), should be distinguished from relaxation. Accordingly, relaxation describes a state of reduced metabolic, central nervous activity, which can be demonstrated by EEG or ECG recording.

Furthermore, the validation process of the stress management model shows that the ability and willingness to use self-reflection in the sense of realistic assessment of one's own stress reaction, capabilities, and coping strategies are important for effective stress management. Any differences or peculiarities can be identified by regularly reviewing and reflecting on one's own stress management. This helps to adapt stress management to new requirements by incorporating relevant aspects into the training.

The use of digital means to support training is becoming increasingly important. Digital training aids can offer a number of advantages. For example, using low-threshold tools such as apps may facilitate the access to specific information. Also, digitally delivered content can be presented to individuals who dislike face-to-face intervention (Zimmermann and Kowalski 2012). In addition, digitalization can make the content more interesting, attractive, and sustainable, which is of particular importance against the backdrop of generational change. The possibility to create environments that are close to reality is an equally great advantage. For example, the use of virtual reality facilitates specific police/military training without requiring special personnel or material hazards and resources (Martirosov and Kopecek 2017). Moreover, any scenario can be repeated and trained as often as desired and in a wide variety of contexts.

As Kaluza and Chevalier (2018) previously noted, the effectiveness of the implemented stress prevention, control, and coping strategies is subject to the individual's characteristics, timing, and the type of demand being managed. Additionally, it is emphasized that effective stress management is equally characterized by the availability and flexible use of the different techniques (Kaluza and Chevalier 2018). Reininger and Gorzka (2011) were able to show in their study that highly stressed police officers make use of various strategies as coping patterns (association or sequence of individual strategies) in order to cope with stress. This indicates that successful coping with stress may not necessarily depend on choosing a singular strategy, but more likely on choosing the right strategy for a given situation (Höge 2002, Unpublished Dissertation). Furthermore, the duration of the stress also matters, as Gorzka et al. (2017) found that the use of emotion-oriented and avoidance-oriented strategies increases with the duration of stress. Another fact to be mentioned is that the use of maladaptive components, such as substance abuse, obsessional thinking processes, resignation, or avoidance, is also an integral part of stress management and differs between individuals (Siebecke and Kaluza 2014). Such components are also experienced as effective means by many members of particularly stressed occupational groups, who regularly use them with varying degrees of success.

In terms of coping, the validation phase focused on activities such as sports and physical exercise or relaxation techniques,

but also on social activities such as talking to comrades and practicing a hobby. Maladaptive procedures, such as the abuse of alcohol, were also addressed. In particular, the tripartition into problem-focused, emotion-focused, and avoidance-focused coping was considered in the validation phase.

Excursus: Operational Psychological Research Approach From the operational psychology perspective, the empirical approach to specialized forces and Special Forces appears to be particularly challenging. The characteristics of both the field of operation and the actors are clearly extreme. So far, an independent paradigm of extreme group research has not yet been formulated (Ibrahim et al. 2021). Extreme groups are described as a collection of individuals who share an above- or below-average trait expression of one or more specific variables. Extreme groups with a high degree of specialization, such as operational IT professionals, specialized forces, Special Forces, extreme athletes, fighter pilots, or intelligence personnel, are characterized by specific competencies or a common requirement profile. In the context of the state executive sector, sensitive and security-relevant activities involving a high level of secrecy additionally complicate matters. There are no standard data collection procedures for investigations of extreme groups; such procedures are usually developed specifically for an individual investigation. Accordingly, qualitative and quantitative individual case studies are the methods of choice when it comes to stress research on extreme groups.

Discussion

In conclusion, it can be stated that stress management requires a selection of different techniques and methods for stress prevention, stress control, and stress coping in order to be effective and appropriately respond to new demands. These three elements require individual teaching methods and are characterized by different approaches to training. In addition, these methods' effectiveness and efficiency with regard to social and technical changes must be continuously evaluated and adapted as necessary.

Both the psychological experts and the military specialists perceived the classification into prevention, control, and coping as reasonable and practicable. From the validation phase, i.e., the interviews with personal protection professionals as well as workshops with instructors, it became clear that the practical part is a central factor in stress management training. It was emphasized, that practical exercises related to the tasks of the specialization are most valued and tend to achieve a learning effect in terms of sustainability. These findings are also found in previous research (Hartmann et al. 2013). Therefore, the focus with regard to the stress management model is on practical parts, which can be found in specific techniques of stress

prevention, stress control, and stress coping. Aspects such as limited time in training must be taken into consideration, which highlights the need for simple techniques that can be learned quickly.

Subsequently, the training model provides possible implications for the specific training of specialized executive personnel. One aspect to be considered is establishing a connection to the specialized personnel's operational environment. During the psychoeducational transfer of knowledge on stress, reference to the work context could help to develop in-depth awareness of the effects of stress and the relevance of effective long-term stress management (Hartmann et al. 2013). In order to ensure successful learning and sustainable knowledge in the areas of stress control and coping, it may be possible to combine the teaching of expedient and practicable techniques with realistic practical exercises. The same applies to the long-term promotion of active relaxation, which can only achieve its full effect with regular training, and provided that the participants accept the meaning and added value of such exercises (Siebecke and Kaluza 2014). Likewise, it would be desirable to promote destigmatization. Knowledge transfer and problem-focused project work would be appropriate means to raise awareness, increase effectiveness, and achieve the greatest possible openness to the topic (von Rosenstiel 2010). In addition, the use of technology-based tools for training should be considered and, if necessary, their integration into existing and future programs should be promoted. Within the framework of the Dept. of Applied Military and Operational Psychology resilience project, training programs in the field of resilience promotion are already being designed. Stress management is an integral part and could be optimized and adapted by implementing multimodal training consisting of theory components and practical exercises.

Future research will focus on initial evaluations of trainings based on this model, which train stress management in an isolated way or in the overall context of resilience. These include a 1-week training module on resilience for leaders of the German military police and a 1 to 2-day training module on deployment-specific stress management for specialized forces of the German military police. The results of the evaluations remain to be seen in order to be able to assess the practicability and the need for optimization of the model and the trainings based on it.

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Code Availability Not applicable.

Declarations

Ethics Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. All research procedures were conducted in compliance with the ethical guidelines and legal basis of the German Data Protection Regulation (DGSVO).

Informed Consent Informed consent was obtained from all individual participants included in the study.

Conflict of Interest The authors declare no competing interests.

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