This document is the English version of the paper originally published in Portuguese as:

Mendes, M.L., Patrão, A., Passos, F., Silva, J., Lucas, P., Malheiro, S., Fonseca, F., Pereira, A., & Queirós, C. (2023). Up-Mind: um programa de treino para otimização de competências de grupos de operacionais de polícia. *Politeia, XX*, 129-154, https://doi.org/10.57776/CMCE-SK98

Up-Mind: a training program to optimize the skills of groups of operational police officers

MARIA LUÍS MENDES
Psychologist at the Psychology Unit of the Portuguese National Security Police
https://orcid.org/0009-0001-4917-2570

ANA PATRÃO
Psychologist at the Psychology Unit of the Portuguese National Security Police
https://orcid.org/0009-0006-7086-7963

FERNANDO PASSOS
Head Psychologist at the Psychology Unit of the Portuguese National Security Police
https://orcid.org/0009-0008-1132-9772

JORGE SILVA
Psychologist at the Psychology Unit of the Portuguese National Security Police
https://orcid.org/0009-0006-2607-9425

PAULO LUCAS
Chief Superintendent of Special Police Unit Commander, Portuguese National Security Police
https://orcid.org/0009-0007-0521-6053

ANTÓNIO MALHEIRO
Police Lieutenant Colonel (Lt.Col.) of Special Operations Group, Portuguese National Security Police
https://orcid.org/0009-0009-5610-5665

FRANCISCO FONSECA
Police Major of Special Operations Group, Portuguese National Security Police
https://orcid.org/0009-0006-5553-1038

ANABELA PEREIRA
Full Professor, Psychology Department, Universidade de Évora
https://orcid.org/0000-0002-3897-2732

CRISTINA QUEIRÓS
Associate Professor, Faculty of Psychology and Education Sciences, Universidade do Porto
https://orcid.org/0000-0002-8045-5317

Maria Luís Mendes: PSP - mlrmendes@psp.pt

Ana Patrão: PSP - afpcsousa@psp.pt

Fernando Passos: PSP - fmpassos@psp.pt

Jorge Silva: PSP - jmlsilva@psp.pt

Paulo Lucas: PSP - pmlucas@psp.pt

António Malheiro: PSP - admalheiro@psp.pt

Francisco Fonseca: PSP – fjsonseca@psp.pt

Anabela Pereira – Univ. Évora - anabela.pereira@uevora.pt

Cristina Queirós: Univ. Porto -cqueiros@fpce.up.pt

PSP is the designation of Polícia de Segurança Pública, here referred as Portuguese National Security Force

Submitted: 11/2022 Published 5/2023

Abstract: Since police activity is a profession recognized as one of the most stressful ones, with exposure to potentially traumatic events, it is essential to prepare police officers in order to minimize this emotional impact that harms physical and psychological health. Based on the principles of stress management, sports psychology and neuropsychology, a self-regulatory skills training program was developed using biofeedback (BFB), called Up-Mind. Being innovative in the Portuguese context, it was developed by a multidisciplinary team that integrated psychologists, researchers, and police elements. We aim to describe the assumptions of developing the program, composed of four phases: presentation and training, initial evaluation, individual and group intervention, and final evaluation. The program is for police officers, aiming at reducing psychological and psychophysiological stress, as well as optimizing police performance. At a time when the psychological impact of the COVID-19 pandemic on police elements is demonstrated, the Up-Mind program can be applied to various police forces to promote physical and psychological health, contributing to the relationship established between the operational procedure and the psychophysiological response.

Keywords: *Biofeedback, police, program, stress, training.*

Introduction

In the fulfilment of their mission, the security forces, as an entity in which the Government (as a State of Law) places its trust to defend democratic legality and to guarantee public security and citizens' rights, are exposed to high levels of stress, and are often submitted to complex scenarios where risk, uncertainty and the unpredictability of threats are a constant. Considering that, traditionally, the police were already considered a stressful activity (Brown & Campbell, 1994), with the COVID-19 pandemic stress levels have increased even more, and its impact is recognized on everyone's mental health (WHO, 2022), particularly in job occupations such as police officers (Tehrani, 2022), whose functions have changed and increased in overload of all kinds.

Thus, in the context of exposure to risk, it is considered essential not only to minimize the impact of stress and increase health, but also to improve the skills of police officers in achieving excellence in policing performance. In this context, it is important to develop specific psychological skills training programs for the police function, composed of a combination of techniques where biofeedback[1] (BFB) is a privileged resource that promotes learning. In fact, BFB allows to increase the effectiveness of training programs as it improves the ability to self-regulate, introducing better results than just skills training (Andersen & Gustafsberg, 2016; Brammer et al., 2021; Di Nota & Huhta, 2019).

This theoretical paper aims to present the Up-Mind self-regulation skills training model, developed for operational police officers, using a double psychological and psychophysiological approach, under the inexorable aegis of the relationship between body and mind.

[1]Biofeedback consists of electronic equipment with electrodes and sensors that allow to evaluate, monitor and return psychophysiological information in real time (Brammer et al., 2021).

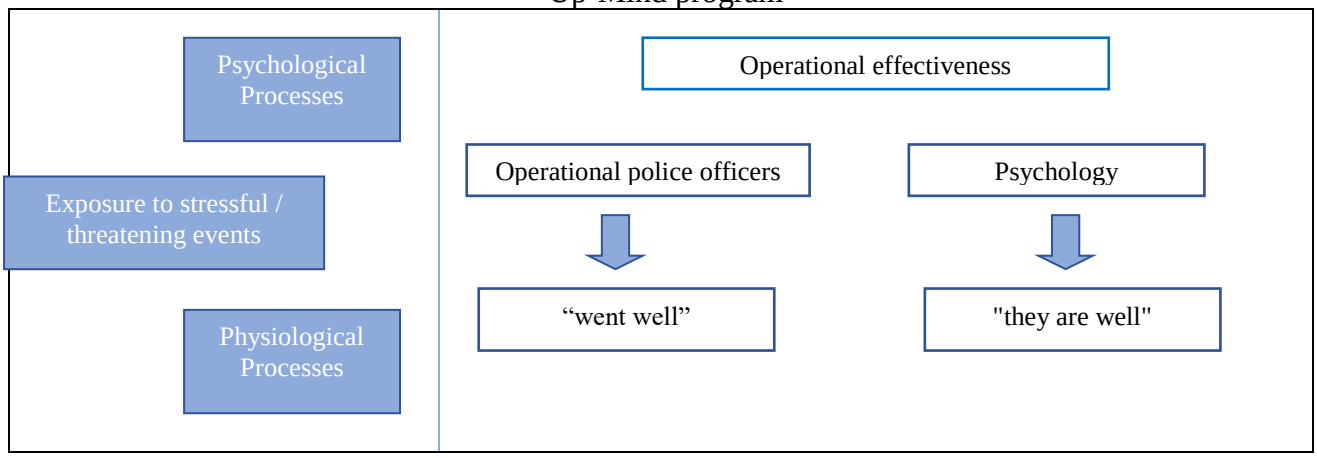
State of the Art

There is a consensus in the literature that security forces are exposed to high levels of stress, not only due to the external environment, but also due to internal psychological and psychophysiological states, which can put physical and mental health at risk and, consequently, police performance (Anderson & Gustafsberg, 2016; Anderson et al., 2002; Brammer et al., 2021; Carleton et al., 2018, 2019; Di Nota & Huhta, 2019; McCraty & Atkinson, 2012; Nieuwenhuys & Oudejans, 2010; Planche et al., 2019; Pereira & Queirós, 2021).

In the security forces, the brain-heart interactions and the dynamics of the autonomic nervous system (ANS) have been studied through heart rate variability, constituting an important indicator of cardiac and emotional health, with an impact on psychosomatic balance, on regulation of physiological stress responses and on ANS resources (McCraty& Atkinson, 2012). One of the consequences of this impact is observed in the health of elements of the security forces, consisting of increased cortisol levels, compared to the general population (Planche et al., 2019). This result is explained, from a psychophysiological perspective, by the activation of the sympathetic nervous system (SNS) which leads to increases in breathing, heart rate, and blood pressure. In fact, in the psychological process of resolving perceived threat, anxiety and stress, the "fight or flight" response (fight or flight as an innate survival response) is initiated, whose activation is a purely physiological process and serves to respond in an adapted way (Lovallo, 2016; Pereira & Queirós, 2021). Thus, the hypothalamic-pituitary-adrenal (HPA) axis is activated and produces a cascade of hormones responsible for maintaining the fight or flight response, namely the release of the hormone cortisol into the bloodstream, a hormone that is neurotoxic, influences metabolism and attacks the immune system (Anderson et al., 2002; Dickerson & Kemeny, 2004; Johnson, 2008; LeBlanc et al., 2008).

In a global perspective, the psychophysiological imbalance, and the respective sympathetic-vagal imbalance in the ANS, are based on the basic hypothesis that they are harmful to physical and mental health, which is why it is relevant and necessary to intervene to restore balance (Lovallo, 2016; Pereira & Queirós, 2021). It is well known that, in order to increase the rate of predictability, success and responsiveness to stress, certain operational groups need very rigorous training from a physical, technical and tactical point of view. The evaluation of this procedure can be interpreted according to two assumptions: 1) "went well", according to an operational perspective; 2) "they are well", in a psychological perspective (Mendes et al., 2021), as described in Figure 1 and as within the scope of the Up-Mind program, later described.

Figure 1. Training hypothesis to optimize the skills of operational police officer groups in the Up-Mind program



However, for the development of the program and in order to systemise the intervention, an integrative literature review was carried out between November 2020 and December 2021, which includes other areas associated with Psychology, namely Sport Psychology, Neuropsychology, and Stress Management, described later on, according to their contribution to the Up-Mind program.

Sport Psychology

Regarding the development of a specific program, in order to better know and understand the behaviour of the operational police officers in a context of high motor and psychophysiological activation, the discipline of Sport Psychology was used, "*as a field of study in which the principles of psychology are applied to understand the cognitions, emotions and behaviours of the subjects involved in the contexts of sports practice*" (Gouveia, 2001, p.5). It should be noted that, in Sport Psychology, psychological skills training (PST) programs have been developed and implemented to improve sports performance in the context of high competition (Cohen et al., 2006; Edmonds, et al., 2008; Filho et al., 2008). In fact, in high performance, where the levels of technical, physical and tactical preparation are often equal, the athlete/team that has the best psychological and/or mental qualities wins. In this way, it is considered that the correct planning of the training of psychological skills, inserted in the general training program of the athlete, eliminates the random and aimless approach, and increases sports performance (Bompa, 2002). As an integral part of the psychological skills training program, self-regulation is of particular importance (Beauchampet al., 2012; Crews & Landers, 1993; Crews et al., 2001; Hatfield & Hillman, 2001; Kirchenbaum, 1984). Therefore, the BFB is a valuable resource for assessment and intervention in the context of pressure/stress (Blumenstein & Bar-Eli, 2001).

In the context of the security forces, training programs have been developed using the BFB, results of which have demonstrated modulation of the individual stress response and promotion of

recovery by involvement of the peripheral nervous system (Campbell, 2022; Lehrer & Gevirtz, 2014; Michela et al., 2022; Thayer & Sternberg, 2006). The repeated practice of breathing exercises (Andersen et al., 2015; Brammer, et al., 2021; McCraty & Atkinson, 2012) and mental exercises promote the reduction of shooting errors, increase the ability to analyse the situation, and stimulate better recovery (Andersen & Gustafsberg, 2016; Andersen et al., 2015, 2018; Jensen et al., 2020).

Regarding ~~to~~ specific programmes for operational groups focused on a high-risk scenario, several studies have been developed. For instance, Arnetz and colleagues (2013; Arnetz et al., 2009) designed and conducted a 10-week intervention program that included: psychoeducation related with stress responses to critical incidents; application of relaxation techniques to manage stress reactions; use of imagery of critical incident scenarios, in a controlled environment (classroom) for exposure to the stress response; mental training of police best practices during the imagery exposure of critical stress-triggering incidents; and learning coping strategies to deal with the effects of stress. This intervention was applied to Swedish police officers, and significant differences were found, namely better coping strategies based on problem solving, reduction in psychological distress and improvements in physical health in terms of reduced digestive discomfort, fewer sleep problems and less exhaustion.

In the same way, in Finland, a 5-day resilience-promoting training program and a 60-minute training session per day were developed (Andersen et al., 2015). Each session included: a general review of relevant stress topics and their management in policing with a duration of 10 minutes; space for clarification of questions raised by the participants related to the procedures of the previous sessions; practice of psychophysiological techniques, namely, focus on positive emotion during the respiratory cycle (McCraty & Atkinson, 2012); and exposure to simulation scenarios of critical incidents on iPod devices, and simultaneously, practice of controlled breathing exercises. The scenarios were developed based on programs that already exist (Arnetz et al., 2009, 2013; Backman et al., 1997) and represented stressful police incidents that police officers typically encounter in the line of duty. The police officers were instructed to imagine being involved in this scenario and say how they would proceed in each situation. The severity level of the scenarios increased over the 5 days to enhance the increase in stress responses and allow the practice of controlled breathing exercises. The results showed a significant reduction in average heart rate and improvement in the ability to maintain controlled breathing during times of stress exposure.

Following the previous study, Andersen and Gustafsberg (2016) tested a training method to improve the use of police force in decision-making during critical high-risk situations. This was a randomized pilot study with Finnish police officers divided into 2 groups: intervention group (undergoing training program) and control group (receiving the usual training). The training program included the application of psychoeducation techniques on the physiology of stress,

imagery techniques, breathing control exercises using BFB, and training through simulation of real scenarios in which the knowledge acquired in the previous phases should be applied. The results revealed that the intervention group had significantly better physiological control, situational awareness and overall performance, as well as presented a greater number of correct decisions to use force, compared to the control group.

Neuropsychology

Regarding Neuropsychology[2], special focus is given to the construction of protocols that stimulate certain brain areas, namely: the insula, integrated in the limbic system that is responsible for alerting and paying attention to internal "alarm signals"; the somatosensory area, integrated into the central nervous system; the prefrontal cortex; and the cingulate cortex, both of which are responsible for the ability to direct attention and to control the impulses, the ability to anticipate consequences and with special contribution to decision-making (Goleman & Davidson, 2018).

Stress Management

Regarding stress management, it is recognized that police activity is one of the most stressful professions, with numerous studies confirming this (Brown & Campbell, 1994; Galanis et al., 2021; Queirós et al., 2020; Rabbing et al., 2022). For decades, there has been a great concern with intervention programs, due to the specificity of police functions (Amaranto et al., 2003; Anders et al., 2022; Blumberg et al., 2022; Brouzos et al., 2021; Nygren & Karp, 2010; Papazoglou & Blumberg, 2020; Patterson et al., 2012), suggesting the development of its own programs that contemplate this specificity.

Thus, based on the programs designed for the optimization of both sport performance in a high-competition context, and operational performance in the context of the security forces, the specific program entitled "Training program for the optimization of skills of the groups of operational Portuguese police officers – Up-Mind" was developed, which is described below.

Up-Mind Program

The program aims to identify stressors related to operational functions in the context of risk and danger exposure, as well as providing strategies to overcome psychological and psychophysiological barriers. It uses the BFB to better frame the specific needs of the operational

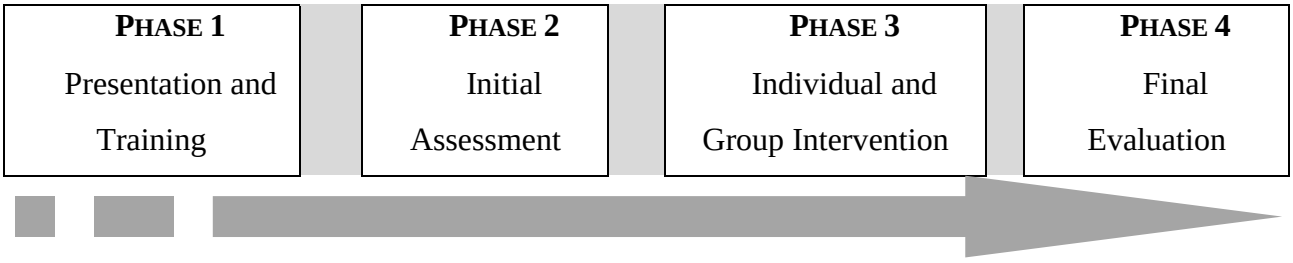
[2]It should be noted that BFB can also be crossed with Neuropsychology, through Neurofeedback, used for various clinical situations, such as attention and impulsivity control, or post-traumatic stress (Marques-Teixeira, 2022).

element, as well as including details of the competence profile previously prepared by the PSP (National Security Force)'s team of psychologists.

In the context of human resources management, the competency profile is a reference document for the different moments of management, including the selection process, training for the improvement of skills and for performance evaluation (Neves et al., 2008). Thus, the competency profile allows the identification of the key behaviours of excellent performance related to a given function, allowing the organization/unit/subunit to select the elements that best serve its mission. Based on specific techniques, namely, the construct matrix technique and critical incidents, the operational competence profile was defined, which is composed by self-control skills, operational skills, and "group spirit", which is to be understood as reciprocal trust, camaraderie, availability and assertiveness (Patrão et al., 2020).

The Up-Mind program is structured over 4 phases (see Figure 2). For the operationalization of the program, a working group (WG) was organized, composed by a multidisciplinary team from the following areas: psychology, stress management, neuropsychology, psychophysiology, crisis intervention, and police sciences.

Figure 2. Phases of the Up-Mind program



Phase 1 - Presentation and Training

Describing in detail, Phase 1 has two main objectives: general presentation of the program and specific training.

The general presentation of the program is intended for all elements of each operational group/team. It is the beginning of the evaluation and intervention program, being implemented in the form of an information session, in which the voluntary nature of participation is explained, and the confidentiality of personal and individual data is guaranteed. This presentation takes place in a classroom context and lasts approximately 1 hour. It is initiated by the top hierarchical superior of that operational group/team, who makes the institutional framework of the program. This first moment is very important because it constitutes an institutional facilitator and, consequently, a catalyst for motivation for participation. Then, the team of psychologists describes in more detail the general aims, advantages of the program, and also introduces an explanation about the BFB

equipment, how it works, and the need to fill in the timeline, since the psychophysiological data is collected in recording mode over a long-time interval. It seeks to establish a space for clarifying doubts, obtaining suggestions and creating a commitment between the elements and the team of psychologists of the PSP, and in the end informed consents are collected.

At the same time, with a restricted group of previously designated police officers, training is provided by the team of psychologists for these elements to take on the task of placing and checking the BFB equipment, in order to ensure a more reliable reading of the psychophysiological data in recording mode. It should be noted that the PSP has BFB equipment (Biofeedback *Xpert*, Shuhfried), namely 2 *Points* (MULTI-Point®) skin conductance reading (EDA), pulse rate (PULS), temperature (TEMP), heart rate variability (HRV) and motility (MOT), 2 HRV electrode cables (HRV-S®), 1 multi-charger (LADEG2®) and several 3M Red Dot 2670-5® disposable electrodes, for HRV.

Phase 2 - Initial Assessment

Phase 2 aims to know the usual psychophysiological response profile of the groups of PSP operational police officers currently in the exercise of functions, through the use of the BFB, and in the context of the laboratory of the Psychology Unit of the PSP, using cognitive tests.

The cognitive tests must be selected according to the competence profile of the function of the operational police officers participating in the program. The Psychology Unit of the PSP has several computerized tests, and, in order to measure the skills of concentration, memorization, analysis and decision skills and flexibility, the following are applied: Cognitrone, version 42.00 - COG (Wagner & Karner, 2011); Signal Detection, version 26.00 - SIGNAL (Puhr, 2006); Vigilance, version 25.00 - VIGIL (Puhr & Schuster, 2006); Intelligence Structure Battery, version 27 - INSBAT (Arendasy et al., 2012) and Inductive Reasoning test version 24.00 - FOLO (Hagman & Bratfisch, 2006).

The Cognitrone test, version 42.00-COG (Wagner & Karner, 2011), that measures attention and concentration, has underlying the theoretical model of Reulecke (1991, in Wagner & Karner, 2011), which considers concentration as a state for which it is necessary to regulate energy (the state of concentration is tiring and consumes energy). In fact, the state of concentration consumes energy resources, so it cannot be maintained correctly on a permanent basis, and it is necessary to find a balance between the speed and accuracy of its responses, in order to achieve optimal performance (Wagner & Karner, 2011). In addition, Reulecke's theoretical model (1991, in Wagner & Karner, 2011) also considers the function and quality of the concentration on the accomplishment of the task.

The Signal Detection test, version 26.00 - SIGNAL (Puhr, 2006) measures visual discrimination and decision-making ability, based on the theory of signal detection in an ever-changing

background. The difficulty of the task is in differentiating the correct stimuli in a background filled with distracting stimuli or other signals that can be confused with the relevant stimulus, given small differences in intensity, under time pressure and over a long period. The relationship between the quality of performance and the speed of realization also allows the observation of the adopted work style, in its controlled and reflective aspect, characterized by slow but exact performances, and in its more impulsive aspect, characterized by fast but inaccurate performances (Puhr, 2006).

The Vigilance test, version 25.00 - VIGIL (Puhr & Schuster, 2006), evaluates the capacity for continuous attention in time in a scenario where stimuli are irregular and unpredictable, which causes a decrease in the level of activation and an increase in reaction latency time. This test was built from the theory of neurophysiological activation, which defends the need for regular activation of the cortex to stimulate attention functions, because, otherwise, when stimulation is irregular and unpredictable, psychic fatigue occurs and, consequently, a drop-in performance (Puhr & Schuster, 2006).

The Intelligence Structure Battery, version 27 - INSBAT (Arendasy et al., 2012), is a subtest that evaluates visual short-term memory, appealing to immediate memory and its correct reproduction.

The Inductive Reasoning test, version 24.00 - FOLO (Hagman & Bratfisch, 2006), measures inductive logical reasoning, that is, it evaluates the ability to establish a general rule based on specific abstract stimuli, which can be understood in reference to the *g-factor*. Thus, the test allows to know the problem-solving capacity of the operational police officer (Hagman & Bratfisch, 2006).

The data obtained from the application of the above-mentioned tests allow to know the result of the participant in relation to the reference sample group, thus allowing inter-individual comparison.

Regarding the psychophysiological identity of the operational police officer, it was considered that this should reflect the different moments of the training/operational activity, namely: static baseline, training, and critical incidents in the theatre of operations.

The static baseline includes a set of psychophysiological information collected at the beginning of working hours, in which the participant is asked to be silent, and without interference from any stimulus, for 5 minutes. The psychophysiological markers collected serve as a reference for later comparison with other activities performed on the same day.

The daily life of certain groups of operational police officers is spent training in the various aspects, in order to maintain and raise the levels of physical, technical and tactical performance, to maintain and increase the levels of confidence in their individual and collective abilities, and to consolidate new procedures that aim to face new realities of intervention. As part of continuous training, it is considered selecting specific exercises for each operational group.

Unforeseen events can occur, and they can be evaluated in the psychophysiological field.

As part of the design process of this phase, it is essential to articulate Psychology team and the chain of command of the operational groups, for the selection of training exercises and for authorizing data collection during real incidents.

In this Phase 2, each time a participant connects to the BFB equipment, the Psychology team downloads the recorded psychophysiological recordings, through a computer with compatible software and a dongle licensed by the BFB (BFB-D®). In order to support the reading of the psychophysiological results, the timelines are collected, as well as the evaluation sheets.

The timeline consists of a document (document provided by the Psychology Unit of the PSP) where each operative is asked to discriminate the activities performed on the day, in chronological order, as well as the subjective evaluation of the satisfaction and energy felt in the performance of each of the activities described, on a Likert scale whose points vary between 1 (no satisfaction) and 6 (very satisfied).

The evaluation sheet aims to collect the performance observed in each of the activities carried out within the scope of the standard training, as well as the record of adverse conditions that may influence this performance (for example, atmospheric conditions, sleep disorders, consumption of stimulating drinks). The completion of this form is the responsibility of each participant, allowing the data collection to study behavioral variables.

After downloading the psychophysiological records, the psychophysiological indicators previously selected by the team of psychologists for each of the activities written on the timeline are marked on the timeline, namely: consecutive heartbeats (RR intervals), heart rate (HR); standard deviation from normal sinus beat intervals (SDNN); stress index measured by the Xpert Biofeedback equipment, Shuhfried (SI); percentage of adjacent NN intervals that differ by more than 50 ms (pNN50); heart rate that varies between one heartbeat and the next (RMSSD); high frequency (HF); low frequency (LF); very low frequency (VLF); ratio between low frequency and high frequency (LF/HF). In short, all these indicators express levels of physiological stress and/or adequate adaptation to the task and restoration of psychophysiological balance.

After collecting all this data, the results of the psychophysiological performance are returned to each of the participants in an individual setting, with a guarantee of absolute confidentiality. To better understand the results, the team of psychologists developed a method of return through graphic illustration of the response curve between 3 moments per activity: i) instruction; ii) execution, and III) recovery. The participant / operational police officer then identifies the strengths and points for improvement and shows interest in moving on to the next phase.

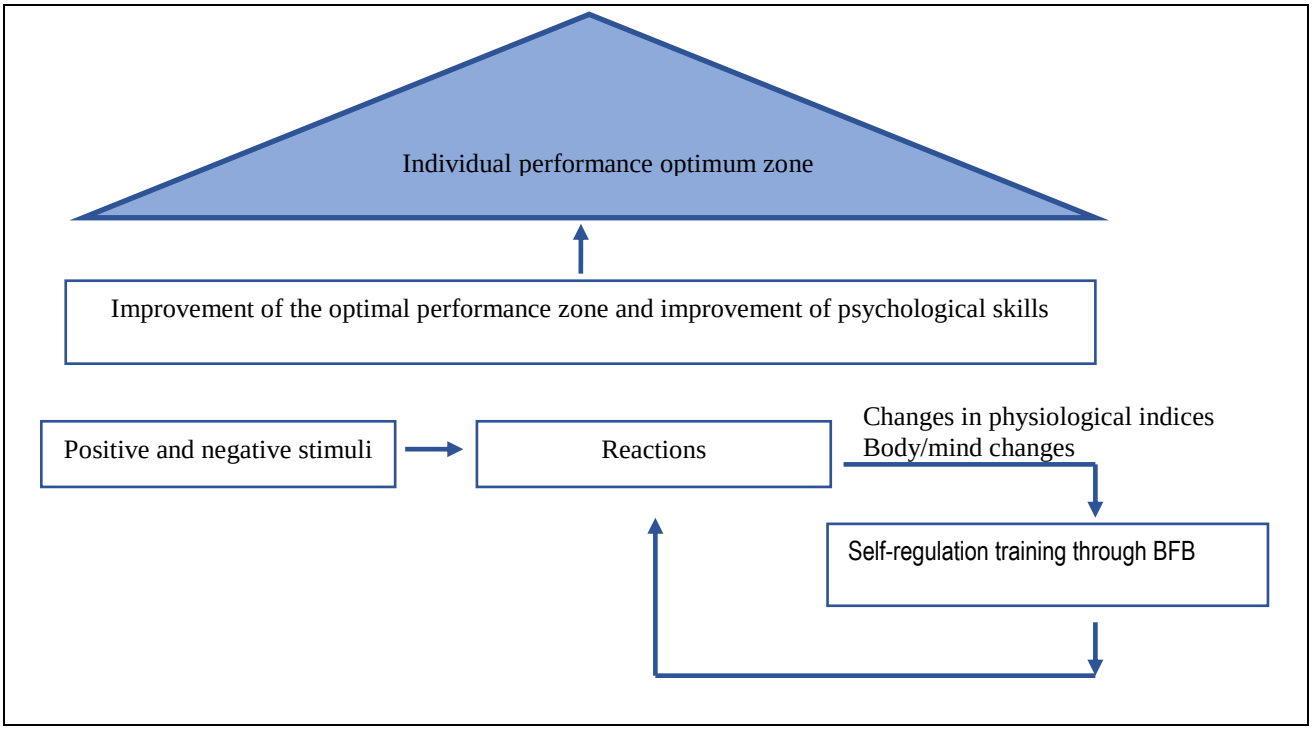
Phase 3 - Individual and Group Intervention

Phase 3 integrates the body-brain-mind axis and includes individual and group intervention, using the BFB, based on the theoretical assumptions previously described.

This phase begins with a specific presentation of the program to a restricted group of operational police officers, where the techniques of individual and group training are described in greater detail, and where the periodicity and logistical procedure of the training are defined. This presentation reinforces the importance of returning individual results, in the context of learning, and the establishment of progressive goals to achieve the best performance. Regarding group sessions, the participants do an inscription on a form where the sessions are scheduled, which is then fixed at the place where the intervention takes place.

In the individual intervention dimension, specific goals are discussed and agreed to be achieved, according to the evaluation carried out in the previous phase, framed in a training plan where it is intended to optimize self-regulation skills, through the BFB, with Multi-S2 sensor and the possibility of connection to Point RESP and EMG, and, in addition, to the EDA. It is thus intended to submit the participant to positive and negative stimuli that, in turn, will generate reactions in the body and mind, which will allow the participant to be aware of the changes in the psychophysiological indices. Thus, having greater awareness of psychophysiological changes, it is possible to train, considering learning through operant conditioning, in the sense of voluntarily creating the desired psychophysiological reactions, with the final goal of reaching or maintaining the optimal level of individual performance (Figure 3).

Figure 3. Self-Regulation Skills Training through the BFB



Phase 3 - individual intervention – was developed based on different studies (Beauchamp et al., 2012; Blumenstein & Weinstein, 2011; Dupee & Werthner, 2011) and integrates 3 stages: 1) laboratory; 2) transition and 3) training setting.

The first stage aims to identify the appropriate respiratory control for each participant, with the objective of achieving cardiac coherence through breathing exercises, in a laboratory training context. It is a heart rate variability training, at a frequency between 0.1 and 0.15Hz, to optimize the degree of order, harmony and stability between various rhythmic activities of the body.

The second stage aims to make the transition between lab training and setting training. It is intended to acquire greater control of the ANS and achieve an optimal level of operability, through the technique of inoculation of stress and distractors, with an increasing degree of complexity and difficulty, and with neuropsychological tests adapted to the operational context. It is a video-coupled training, through the insertion of images of the participant itself in training and operational exercise, with the main objectives of: a) evaluating stress indicators, according to the "double feedback" procedure; b) identifying specific moments of psychophysiological arousal and, simultaneously, analysing their behaviour in these moments. Synoptically, it consists of self-regulation training in the laboratory, with analysis and return of results, which includes a degree of evolution in terms of optimizing skills, in order to establish new individual goals and aims.

Finally, the third stage aims to increase performance and mental resilience in an environment as close as possible to the real context, in order to develop psychological skills to deal with different realities as a differential in better levels of biopsychosocial and professional performance. It consists of repeating the training of different levels of complexity (especially emotional) in a training setting, independently and autonomously using the techniques learned in all previous sessions.

Given that the individual intervention is designed according to individual development needs, as well as the motivation and degree of investment placed by the participant in the training plan, it is not possible to estimate, from the outset, what is the maximum number of sessions. Still, several studies advocate a minimum of 4 days of intensive training (Andersen & Gustafsberg, 2016), 5 sessions over 2 intensive weeks (Edmonds et al., 2008), or weekly sessions for 10 weeks (Arnetz et al., 2009).

The group intervention was developed based on other studies (Colzato et al., 2012; Joyce-Moniz, 2010; Khazan, 2013). It includes a psychoeducation dimension of the physiology of stress for better knowledge of the stress response and acquisition of greater control in the body, as well as an intervention dimension with attention techniques, and psychophysiological relaxation techniques (technique of progressive muscle relaxation, relaxation protocols, breathing, passive muscle

relaxation, autogenic training and guided imagery exercises). When possible and necessary, techniques of group cohesion can also be considered. To increase adherence, the strategy implemented was to organize the sessions by levels, assuming two functions simultaneously: structure, in the sense that the previous session is a prerequisite for the frequency of the next one; and hierarchy, suggesting that who is in level 2 is more advanced than level 1 and so on.

Phase 4 - Final Evaluation

Phase 4 corresponds to the final evaluation. Research in this area has evolved in the sense of privileging qualitative studies and case studies, using ideographic techniques and performance evaluation instruments to the detriment of self-report measures, in an applied context, preferably longitudinally (Gouveia, 2001; Tenenbaum & Bar-Eli, 1995; Vealey, 1994). In this line of thought, it is considered that the programs with the highest probability of success are those that comply with the methodological requirements mentioned above (Beauchamp et al., 2012).

Thus, it is considered essential to measure not only the final performance of each police officer, using the same instruments and measures as in Phase 2, but also to measure the effectiveness of the program itself using clinical observation, psychometric assessment of performance and psychophysiological skills, and statistical analyses revealing the effectiveness of the program. Thus, it is intended to know if, in fact, the investment in psychophysiological training and its gains at the level of the body-brain-mind axis are reflected in an acquired and internalized capacity, so it is additionally necessary to calculate the reliable change index (RCI[3]), as well as clinically meaningful change[4] (Jensen et al., 2010; Shauenburg & Strack, 1999; Tingey et al., 1996).

Chart 1 presents the summary of the Up-Mind program, with its 4 phases and stages.

[3]The RCI is the minimum statistically significant difference between the initial value and the final value obtained with the program, which is necessary to obtain to be considered that a given improvement is reliable (Shauenburg & Strack, 1999; Tingey et al., 1996).

[4]The concept of clinically meaningful change implies that the values observed in the participant are not only statistically reliable (exceed the error estimated measurement of the instrument), as well as they are below the cut-off point defined as a comparative reference point between the police officers' population and the population of the normalized sample (Shauenburg & Strack, 1999; Tingey et al., 1996).

Table 1. Overview of the UP-Mind programme

PHASE	GENERAL AND SPECIFIC AIMS		OPERATIONALIZATION	HEAD QUARTER UNIT COMMAND SUPORT	TEAM OF PSYCHOLOGISTS
1	PRESENTATION AND TRAINING	- Presentation of the program to a group of operational police officers - Training with a small group	- Dissemination to the operational police officers' large group	- Support and encouragement for the participation of police officers in the program (motivational dimension)	- Presentation of the techniques and phases of the program, including return of results and goals - Collection of informed consent - Need to fill in the timeline and the evaluation form - Training of the designated elements, for handling the BFB - Availability of BFB equipment
2	INITIAL ASSESSMENT	Baseline	- Connection to BFB, with HRV-S cable on the chest	- Adequate timeline filling	- Reading, analysis and individual return of the results
		Training	- Previously defined training plan - Connection (+3H) to biofeedback, with HRV-S cable on the chest	- Definition of clear goals and aims that can be generalized to the entire police workforce, to eliminate confounding variables in the procedure - Adequate timeline filling and evaluation sheet	- Reading, analysis and individual return of the results - Identification of strengths and development needs
		Critical Incidents in the Theatre of Operations	- Connection to BFB, with HRV-S cable on the chest	- Adequate timeline filling	- Reading, analysis and individual return of the results - Identification of strengths and development needs
		Cognitive Tests	- VTS tests in the laboratory	- Completion of the tests	- Reading, analysis and individual return of the results - Identification of strengths and development needs
3	SPECIFIC PRESENTATION	Presentation of Phase 3 to the operational police officers who completed the previous phase	- Connection to BFB, with Multi-S2 sensor and possibility of connection to Point RESP and EMG, in addition to EDA	- Voluntary registration for group sessions and availability in the scheduling of individual sessions	- Presentation of individual and group training techniques, and definition of periodicity and logistical procedure, including return of results and goals
	GROUP TRAINING	Intervention through psychoeducation	- Psychoeducation session and training in group practices, mindfulness, psychophysiological relaxation and group cohesion	- Provide a room for the application of the psychoeducation session and group techniques	- Individual static baseline lasting 5 minutes before and after the intervention - Analysis of the psychophysiological results of the practices, in each session
	INDIVIDUAL TRAINING	Intervention framed in a training plan	- Training using BFB with stress inoculation technique and distractors	- Provide training setting	- Design of the training plan, according to the individual results of Phase 2 - Reading, analysis and individual return of the results - Identification of strengths and development needs
4	FINAL EVALUATION	Repeat of the Phase 2 protocol Evaluation of the effectiveness of the program			

Conclusion and theoretical and practical implications

The Up-Mind program was assumed on the assumption that, in parallel with physical, technical and tactical-police training, it is necessary to train psychophysiological skills in order to promote health and to optimize performance, through specific training for the operational groups of the Portuguese Police. Thus, after identifying the specific needs of each operational police officer (with reference to the competence profile of their professional group), resulting from the assessment carried out both in a simulated scenario and in a real context, it is intended to submit the participants to the training of self-regulation skills, using BFB equipment, in order to achieve excellence in police performance. Moreover, the effectiveness of the program itself is also assessed, which allows for successive adjustments and improvements.

Theoretically, the program is innovative for the following reasons:

- As far as it is known, there are no other programs in the Portuguese security forces.

- To evaluate psychophysiological performance, more specifically, in everyday exercises in the context of training, as well as in critical incidents in the theatre of operations.

- It integrates the evaluation phase and the performance optimization training phase into a single program.

- It evaluates the effectiveness of the program within the continuous improvement cycle.

- because all phases are supported by collected data that provide an empirical basis for validation in light of the scientific method.

- And, finally, it includes a multidisciplinary team that combines synergies between psychology and police sciences, complementing the interpretation of the data collected, based on experience in areas such as psychophysiology, neuropsychology, stress management, crisis intervention, police sciences, and scientific research methods.

Regarding the practical implications, the results obtained in the evaluation phase, as they reflect the psychophysiological identity of the operational police officers, can constitute reference values for future selection processes, as well as serve as a pre-morbid condition in different contexts, namely returns from international missions, work accidents and re-entry to the exercise of operational functions (e.g.: unpaid leave; temporary incapacity to perform operational functions). It should be noted that the program can be applied to various police forces to promote physical and psychological health, contributing to the relationship established between the operational procedure and the internal quality response (as described previously). In addition, at a time when police forces played a relevant role in combating the COVID-19 pandemic, with modified functions and high physical and emotional overload, the psychological impact of this situation may now be revealing itself in terms of increased levels of stress and mental health problems (Borovec et al., 2021; Brown

& Fleming, 2021; Craddock & Telesco, 2022; Frenkel et al., 2021; Tehrani, 2022), being crucial to prevent future impacts and to encourage adequate stress management.

Thus, together with the movements of interest of the operational police officers themselves, the PSP team of psychologists identified the need for a paradigm shift focused on the body to give permission to work on the mind. In this sense, the Up-Mind program challenges the laws of psychology in the approach to the mind through the body, as well the relationship between psychology and psychologists with operational police officers, discarding myths and negative beliefs and stimulating the partnership materialized in this new (re)encounter.

References

Amaranto, E., Steinberg, J., Castellano, C., & Mitchell, R. (2003). Police stress interventions. *Brief Treatment and Crisis Intervention*, *3*(1), 47–54. https://doi.org/10.1093/brief-treatment/mhg001

Anders, R., Petignat, L., Salathé, C., Samson, A.C., & Putois, B. (2022). Profiling police forces against stress: Risk and protective factors for post-traumatic stress disorder and burnout in police officers. *International Journal of Environmental Research and Public Health*, *19*, 9218. https://doi.org/10.3390/ijerph19159218

Anderson, G. S., Litzenberger, R., & Plecas, D. (2002). Physical evidence of police officer stress. *Policing: An International Journal*, *25*(2), 399-420. https://doi.org/10.1108/13639510210429437

Andersen, J. P., Papazoglou, K., Koskelainen, M., Nyman, M., Gustafsberg, H., & Arnetz, B. B. (2015). Applying resilience promotion training among special forces police officers. *SAGE Open*, 1-8. https://doi.org/10.1177/2158244015590446

Andersen, J. P., & Gustafsberg, H. (2016). A training method to improve police use of force decision making: A randomized controlled trial. *SAGE Open*, *6*, 1-13. https://doi.org/10.1177/2158244016638708

Andersen, J. P., Di Nota, P. M., Beston, B., Boychuck, E. C., Gustafsberg, H., Poplawski, S., et al. (2018). Reducing lethal force errors by modulating police physiology. *Journal Occupational Environment Medicine*, *60*, 867-874. https://doi.org/10.1097/JOM.0000000000001401

Arendasy, M., Hornke, L. F., Sommer, M., Häusler, J., Wagner-Menghin, M., Gittler, G., Heinginger, C., Herle, M., & Körtner, T. (2012). *Intelligence Structure Battery*. Dr. G. Schuhfried Ges.m.b.H.

Arnetz, B. B., Arble, E., Backman, L., Lynch, A., & Lublin, A. (2013). Assessment of a prevention program for work-related stress among urban police officers. *International Archives of Occupational and Environmental Health*, *86*, 79-88. https://doi.org/10.1108/13639510210429437

Arnetz, B. B., Nevedal, D.C., Lumley, M. A., Backman, L., & Lublin, A. (2009). Trauma resilience training for police: Psychophysiological and performance effects. *Journal of Police and Criminal Psychology*, *24*, 1-9. https://doi.org/10.1007/s11896-008-9030-y

Beauchamp, M.K., Harvey, R.H., & Beauchamp, P.H. (2012). An integrated biofeedback and psychological skills training program for Canada's Olympic short-track speedskating team. *Journal of Clinical Sport Psychology*, *6*(1), 67-84. https://journals.humankinetics.com/view/journals/jcsp/6/1/article-p67.xml

Blumberg, D.M., Papazoglou, K., & Schlosser, M.D. (2022). *The POWER manual: A step-by-step guide to improving police officer wellness, ethics, and resilience*. Washington, DC: American Psychological Association. https://doi.org/10.1037/0000272-000

Blumenstein, B., & Bar-Eli, M. (2001). A five-step approach for biofeedback training in sport. *Sport Wissenschaft*, *31*, 343-354.

Blumenstein, B., & Weinstein, Y. (2011). Biofeedback training: Enhancing athletic performance. *Biofeedback*, *39*(3), 101–104. https://doi.org/10.5298/1081-5937-39.3.07

Bompa, T. O. (2002). *Treinamento total para jovens campeões [Total training for young Champions]*. S. Paulo: Manole.

Borovec, K., Fabris, S.D., &Jakupovic, A. (2021). Impact of stress caused by the COVID-19 pandemic on the work and conduct of police officers in stressful emergency situations. *European Law Enforcement Research Bulletin* (CEPOL), *5*, 2-12.

Brammer, J.C., Peer, J.M., Michela, A., Rooij, M., Oostenveld, R., Klumpers, F., et al. (2021). Breathing biofeedback for police officers in stressful virtual environment: Challenges and opportunities. *Frontiers Psychology, 12*, 1-9. https://doi.org/10.3389/fpsyg.2021.586553

Brouzos, A., Vassilopoulos, S., Romosiou, V., Stavrou, V., Tassi, C., Baourda, V., & Brouzou, K. (2021). 'Stay Safe-Feel Positive' on the frontline: An online positive psychology intervention for police officers during the COVID-19 pandemic. *Journal of Positive Psychology*, 1-11. https://doi.org/10.1080/17439760.2021.1975161

Brown, J. M., & Campbell, E. A. (1994). *Stress and policing: Sources and strategies*. Chichester: John Wiley & Sons.

Brown, J., & Fleming, J. (2021). Exploration of individual and work- related impacts on police officers and police staff, working in office-based or front-line roles, during the UK's first COVID lockdown. *The Police Journal: Theory, Practice and Principles*, 1–23. https://doi.org/10.1177/0032258X21105289

Campbell, H.L. (2022). *Biofeedback and Neurofeedback Applications for Military and Law Enforcement* (31 august 2022). Available in https://biofeedbackinternational.com/biofeedback-and-neurofeedback-applications-for-military-and-law-enforcement/

Carleton, N., Afifi, T., Turner, S., Taillieu, T., Duranceau, S., Le Bouthillier, D., et al. (2018). Mental disorder symptoms among public safety personnel in Canada. *Canadian Journal of Psychiatry, 28*, 54-64. https://doi.org/10.1177/0706743717723825

Carleton, R.N., Afifi, T.O., Taillieu, T., Turner, S., Krakauer, R., Anderson, G., et al. (2019). Exposures to potentially traumatic events among public safety personnel in Canada. *Canadian Journal of Behavioural Science / Revue canadienne des sciences du comportement*, *51*(1), 37-52. https://doi.org/10.1037/cbs0000115

Cohen, A., Tenenbaum, G., English, R. W. (2006). Emotions and golf performance: An IZOF-based applied sport psychology case study. *Behavior Modification*, 30(3), 259-280. https://doi.org/10.1177/0145445503261174

Colzato, L. S., Szapora, A., & Hommel, B. (2012). Meditate to create: The impact of focused-attention and open-monitoring training on convergent and divergent thinking. *Frontiers in Psychology, 3*, 116. https://doi.org/10.3389/fpsyg.2012.00116

Craddock, T., & Telesco, G. (2022). Police stress and deleterious outcomes: Efforts towards improving police mental health. *Journal of Police and Criminal Psychology*, *37*, 173–182. https://doi.org/10.1007/s11896-021-09488-1

Crews, D. J., & Landers, D. M. (1993). Electroencephalographic measures of attentional patterns prior to the golf putt. *Medicine & Science in Sports & Exercise, 25*(1), 116–126. https://doi.org/10.1249/00005768-199301000-00016

Crews, D. J., Lochbaum, M. R., & Karoly, P. (2001). Self-regulation: Concepts, methods, and strategies in sport and exercise. In R. Singer, H. Hausenblas, & C. Janelle (Eds.), *Handbook of Sport Psychology* (pp. 566-58). New York: John Wiley.

Di Nota, P., & Huhta, J-M. (2019). Complex motor learning and police training: Applied, cognitive, and clinical perspectives. *Frontiers in Psychology, 10*, 1-20. https://doi.org/10.3389/fpsyg.2019.01797

Dickerson, S.S., & Kemeny, M.E. (2004). Acute stressors and cortisol responses: A theoretical integration and synthesis of laboratory research. *Psychological Bulletin, 130*(3), 355–391. https://doi.org/10.1037/0033-2909.130.3.355

Dupee, M., & Werthner, P. (2011). Managing the stress response: The use of biofeedback and neurofeedback with Olympic athletes. *Biofeedback, 39*(3), 92-94. https://doi.org/10.5298/1081-5937-39.3.02

Edmonds, W., Tenenbaum, G., Mann, D., Johnson, M., & Kamata, A. (2008). The effect of biofeedback training on affective regulation and simulated car-racing performance: A multiple case study analysis. *Journal of Sports Sciences*, 26(7),761-773. https://doi.org/10.1080/02640410701813068

Filho, E., Moraes, L., & Tenenbaum, G. (2008). Affective and physiological states during archery competitions: Adopting and enhancing the probabilistic methodology of individual affect-related performance zones (IAPZs). *Journal of Applied Sport Psychology*, 20, 441-456. https://doi.org/10.1080/10413200802245221

Frenkel, M., Giessing, L., Egger-Lampl, S., Hutter, V., Oudejans, R., Kleygrewe, L., & Plessner, H. (2021). The impact of the COVID-19 pandemic on European police officers: Stress, demands, and coping resources. *Journal of Criminal Justice*, *72*, 101756. https://doi.org/10.1016/j.jcrimjus.2020.101756

Galanis, P., Fragkou, D., & Katsoulas, T. A. (2021). Risk factors for stress among police officers: A systematic literature review. *Work*, *68*(4), 1255-1272. https://doi.org/10.3233/WOR-213455

Goleman, D., & Davidson, R. (2018). *Altered traits: Science reveals how meditation changes your mind, brain, and body*. New York: Avery Books.

Gouveia, M. J. (2001). Tendências da investigação na psicologia do desporto, exercício e actividade física [Research trends in the psychology of sport, exercise and physical activity]. *Análise Psicológica, 1*(XIX), 5-14. https://doi.org/10.14417/ap.339

Hagman, E., & Bratfisch, O. (2006). *Inductive Reasoning Test*. Dr. G. Schuhfried Ges.m.b.H.

Hatfield, B.D., & Hillman, C.H. (2001). The psychophysiology of sport: A mechanistic understanding of the psychology of superior performance. In R.N. Singer, H.A. Hausenblas, & C.M. Janelle (Eds.), *Handbook of Sport Psychology* (pp. 362-388). New York: John Wiley.

Jensen, A.E., Bernards, J.R., Jameson, J.T., Johnson, D.C., & Kelly, K.R. (2020). The benefit of mental skills training on performance and stress response in military personnel. *Frontiers in Psychology, 10*, 2964. https://doi.org/10.3389/fpsyg.2019.02964

Jensen, H.H., Mortensen, E.L., & Lotz, M. (2010). Effectiveness of short-term psychodynamic group therapy in a public outpatient psychotherapy unit. *Nordic Journal Psychiatry, 64*, 106-114. https://doi.org/10.3109/08039480903443874

Johnson, B. R. (2008). *Crucial elements of police firearms training*. New York: Looseleaf Law Publications.

Joyce-Moniz, L. (2010). *Hipnose, meditação, relaxamento, dramatização. Técnicas de sugestão e auto-sugestão*. [Hypnosis, meditation, relaxation, dramatization. Suggestion and autosuggestion techniques]. Porto: Porto Editora.

Khazan, I. (2013). *The clinical handbook of biofeedback. A step-by-step guide for training and practice with mindfulness*. Oxford: Wiley-Blackwell.

Kirschenbaum, D.S. (1984). Self-regulation and sport psychology: Nurturing an emerging symbiosis. *Journal of Sport Psychology, 6*(2), 159-183.

LeBlanc, V.R., Regehr, C., Jelley, R.B., & Barath, I. (2008). The relationship between coping styles, performance, and responses to stressful scenarios in police recruits. *International Journal of Stress Management, 15*(1), 76–93. https://doi.org/10.1037/1072-5245.15.1.76

Lehrer, P.M., & Gevirtz, R. (2014). Heart rate variability biofeedback: How and why does it work? *Frontiers Psychology, 5*, 756. https://doi.org/10.3389/fpsyg.2014.00756

Lovallo, W.R. (2016). *Stress and health: Biological and psychological interactions*. 3rd Ed. Thousands Oaks, CA: SAGE.

Marques-Teixeira, J. (2022). *Neurofeedback: Aspetos teóricos e práticos [Neurofeedback: theoretical and practical aspects]*. Lisboa: Taiga.

McCraty, R., & Atkinson, M. (2012). Resilience training program reduces physiological and psychological stress in police officers. *Global Advances in Health and Medicine, 1*(5), 42-64. https://doi.org/10.7453/gahmj.2012.1.5.013

Mendes, M.L., Patrão, A., Silva, J., Passos, F., & Queirós, C. (2021). Estudo sobre indicadores de eficácia e aumento de competências no treino do GOE: Relatório anual de 2021 [Study about indicators of effectiveness and increase of skills in GOE training: Annual report 2021]. Belas, Sintra: Divisão de Psicologia da Direção Nacional da Polícia de Segurança Pública.

Michela, A., Peer, J.M., Brammer, J.C., Nies, A., Rooij, M., Oostenveld, R., Dorrestijn, W., Smit, A.S., Roelofs, K., Klumpers, F., & Granic, I. (2022). Deep-Breathing biofeedback trainability in a virtual-reality action game: A single-case design study with police trainers. *Frontiers in Psychology, 13*:806163. https://doi.org/10.3389/fpsyg.2022.806163

Neves, J. G., Garrido, M., & Simões, E. (2008). *Manual de competências pessoais, interpessoais e instrumentais [Personal, interpersonal and instrumental skills manual]*. Lisboa: Edições Sílabo.

Nieuwenhuys, A., &Oudejans, R. (2010). Effects of anxiety on handgun shooting behaviour of police officers: A pilot study. *Anxiety, Stress and Coping, 23*, 225-233. https://doi.org/10.1080/10615800902977494

Nygren, M., & Karp, S. (2010). *Stress and Stress Management in Policing A cross-sectional analysis of the literature in the field.* Working Paper 21. Geneva: International Police Executive Symposium, Geneva Centre for the Democratic Control of Armed Forces.

Papazoglou, K., & Blumberg, D.M. (2020). *Power: Police officer wellness, ethics, and resilience.* San Diego: Elsevier.

Patrão, A., Mendes, M.L., Silva, J., Passos, F., & Queirós, C. (2020). *Manual de boas práticas na seleção e assessoria do grupo de operações especiais: À procura da excelência da última ratio [Manual of good practices in the selection and advice of the special operations group: Seeking excellence in the ultima ratio]*. [Non-published document]. Polícia de Segurança Pública.

Patterson, G., Chung, I., & Swan, P. (2012). The effects of stress management interventions among police officers and recruits. *Campbell Systematic Reviews, 2012*(7). https://doi.org/10.4073/csr.2012.7

Pereira, A., & Queirós, C. (2021). O Stresse e as suas consequências na saúde e no bem-estar [Stress and its consequences on health and well-being]. In I. Leal & J.L. Pais-Ribeiro (Eds.), *Manual de Psicologia da Saúde [Manual of Health Psychology]* (pp. 137-145). Lisboa: Pactor.

Planche, K., Chan, J., Di Nota, P. M., Beston, B., Boychuck, E. C., Collins, P., et al. (2019). Diurnal cortisol variation according to high-risk occupational speciality within police: comparisons between frontline, tactical officers, and general population. *Journal Occupational Environment Medicine, 61*, 260-265. https://doi.org/10.1097/JOM.0000000000001591

Puhr, U. (2006). *Signal Detection Test*. Dr. G. Schuhfried Ges.m.b.H.

Puhr, U., & Schuster, B. (2006). *Vigilance Test*. Dr. G. Schuhfried Ges.m.b.H.

Queirós, C., Passos, F., Bártolo, A., Marques, A.J., Silva, C.F., & Pereira, A. (2020). Burnout and stress measurement in police officers: Literature review and a study with the operational police stress questionnaire. *Frontiers in Psychology, 11*(587). https://doi.org/10.3389/fpsyg.2020.00587

Rabbing, L., Bjorkelo, B., Fostervold, K. I., Stromme, H., & Lau, B. (2022). A scoping review of stress measurements and psychometry in police research. *Journal of Police and Criminal Psychology,37*(2), 457-482. https://doi.org/10.1007/s11896-022-09498-7

Schauenburg, H., & Strack, M. (1999). Measuring psychotherapeutic change with the symptom checklist SCL 90 R. *Psychotherapy and Psychosomatics, 68*, 199-206.

Schuhfried, G. (s/d). Biofeedback Xpert. Available in https://www.infoteste.pt/catalogos/Catalog%20BFB.pdf in 5 November 2020.

Tehrani, N. (2022). The psychological impact of COVID-19 on police officers. *The Police Journal*, *95*(1), 73-87. https://doi.org/10.1177/0032258X211039975

Tenenbaum, G., & Bar-Eli, M. (1995). Contemporary issues in exercise and sport psychology research. *European Perspectives on Exercise and Sport Psychology*, 292-323.

Thayer, J.F., & Sternberg, E. (2006). Beyond heart rate variability: Vagal regulation of allostatic systems. *Annals of the New York Academy of Sciences, 1088*, 361-372. https://doi.org/10.1196/annals.1366.014

Tingey R.C., Lambert, M.J., Burlingame, G.M., & Hansen, N.B. (1996). Assessing clinical significance: Proposed extensions to method. *Psychotherapy Research, 6*, 109-123.

Vealey, R.S. (1994). Current status and prominent issues in sport psychology interventions. *Medicine & Science in Sports & Exercise, 26*(4), 495-502. https://journals.lww.com/acsm-msse/abstract/1994/04000/current_status_and_prominent_issues_in_sport.15.aspx

Wagner, M., & Karner, T. (2011). *Cognitrone Test*. Dr. G. Schuhfried Ges.m.b.H.

World Health Organization (2022). *Mental Health and COVID-19: Early evidence of the pandemic's impact: Scientific brief (2 March 2022)*. In https://www.who.int/publications/i/item/WHO-2019-nCoV-Sci_Brief-Mental_health-2022