The two basic aspects of military self-efficacy: leadership and athletic skills’ self-efficacy

A literature review

1Dr. Karamanoli Vasiliki, 2Dr. KontodimakiVasiliki

1Assistant professor - Psychology, 2Scientific-educational Staff - Physical Education
Department of Military Sciences
Evelpidon Hellenic Military Academy
Vari, Greece.

Abstract- This study aims to bring out theoretical knowledge about military self-efficacy, as little has been identified in scientific research about this issue. A literature review was conducted handling papers on theoretical and experimental research on self-efficacy theory, perceived self-efficacy, military leadership, transformational leadership, military resilience, military performance, effective leadership, athletic self-efficacy, sports self-efficacy, performance self-efficacy, and personality characteristics, between the period from 1975 to 2024, for framework study consummation. The search was carried out across PubMed, PsycINFO, Scopus Databases, and Google Scholar. General self-efficacy’s definition, options, function, and manipulation were presented. Argumentation of its aspects: leadership self-efficacy and self-efficacy in athletic skills were developed and further investigated. As demonstrated by the research, the above factors correlate to one another. The theoretical backgrounds of the experimental designs that have been used, in both aspects, to manipulate self-efficacy, were included. Suggestions for future research to define how military self-efficacy can be improved and how self-efficacy in leadership and athletic performance may affect the effectiveness in the military field were supplied. The research will be valuable in understanding the relationship between the terms self-efficacy, military performance, leadership, and athletic skills; and finally, how self-efficacy in leadership and athletic performance may impact effectiveness in the military field.

Keywords: Self-efficacy, manipulation of self-efficacy, military self-efficacy, leadership self-efficacy, sport self-efficacy, self-efficacy in athletic performance, athletic and motor skill performance.

I. INTRODUCTION
This review refers to military self-efficacy theory, focusing on its dimensions and the fields it affects. It has been proven that self-efficacy’s perception influences human behavior and, more specifically, leadership self-efficacy and self-efficacy in athletic competence are highly related to and construct military self-efficacy. According to Bandura’s social learning theory [1] and self-regulation [2], one learns by observing the actions and emotional reactions of others, thus clarifying which of his actions have positive or negative consequences. It is a cognitive process connected with self-regulating corrective adjustments based on feedback after an action [2]. Individuals observe and control their behavior (copy models), which leads them to attain a specific and feasible goal by making positive changes. Achieving a goal requires self-evaluation actions [2], along with intrinsic motivational factors [3,4], self-observation [5,6], and self-reinforcement thus creating a sense of self-efficacy. That means, expectations of a certain behavior leading to a specific outcome, creating the confidence, the so-called belief, that he could indeed succeed in achieving a positive result, are in the core of self-efficacy process.

Expectations of self-efficacy are based on four dimensions. The first one refers to the actualization of the effort, meaning that successful or unsuccessful efforts influence the expectations of efficacy (repeated successes create high expectations, while failures create new failure beliefs). The second dimension refers to the experience of a representative, meaning that observing other people who succeed in activities could provoke fear and encouragement in the individual (“if the others can do it, I can do it too”) [7]. The third one refers to verbal persuasion, meaning that verbal suggestions lead the individual to believe that he can achieve what he has failed in the past. Finally, the fourth dimension refers to emotional stimulation, meaning that the individual is affected by stress and anxiety. These are created when the person is called upon to complete a task, thus affecting the results before the task even begins.

Perceived self-efficacy is the faith in one’s ability to manage things in general [8] and especially the belief in his ability to manage the achievement of specific tasks, as well as actions, thoughts, mood, motivation, and decision-making in daily life [9] that are crucial for self-motivation and human behavior. Beliefs of high self-efficacy may influence human effort when the task seems very challenging or impossible, but in low-perceived beliefs, it seems to be a personal threat [10].
and provokes behaviors of avoidance which results in dropping out of the effort. High stress is experienced when the task is difficult, and failure is attributed by the person to internal (his own) reasons, resulting in a loss of faith in his potential and quitting from future expectations, creating the perception of his incompetence.

On the contrary, the perception of high self-efficacy is associated with high effort and eventually influences positively human relationships [10]. Positive affect and optimism are both correlated to positive perceived self-efficacy [11]. These people are more efficient and set higher goals [12], confront their challenges, manage pressure [13], and commit to several activities at a time [14]. Therefore, high perceived self-efficacy can be applied as a remedy [15] in many situations, such as in one's weakness due to personal stereotypes or prejudices and thoughts of incompetence, by generalizing the perception of self-efficacy to different activities where one is more capable. Individuals with high self-efficacy seek challenges, new behaviors, and successes [1]. They attribute their success to intrinsic factors such as their ability and effort. These internal characteristics further increase their high perceived self-efficacy and thus increase their expectations of future success. Consequently, the main educational goal in several military academies is to train military officers with strong beliefs, trust in their self-efficacy, and effective commanding abilities (leadership self-efficacy perception) [16]. Thus, military educational programs are based on cognitive, physical, athletic, and emotional readiness to create a strong and efficient military leader [17,18].

Perceived self-efficacy is crucial in cultivating physical and mental readiness as much as cultivating leadership self-efficacy since it can indirectly influence the decision-making process, which is a central characteristic of the military profession (Army, Navy, and Air Force). Military readiness is cultivated and guaranteed through intensive military training, lifelong sports, and physical exercise [19]. Physical and mental resilience is practiced and improved under conditions of stress and high demands; through self-efficacy perception enrichment (experiences, values, and norms); and finally, through social group identity cultivation (common characteristics, team cohesion, leadership effectiveness) [20]. Military self-efficacy, following social learning theory, is cultivated through experiences, observations, and the strengthening of personal perceptions and reactions [21]. Since experience is crucial to cultivating military self-efficacy, education in military programs and schools, besides academic education, provides many applications in commanding, military practice and training, sports, and readiness, cultivating positive experiences of managing very stressful situations and, for this reason, creating a positive perception of military self-efficacy. Leadership self-efficacy is a basic feature for military personnel, influencing leadership behavior as well as physical and mental readiness [19]. Research has shown that self-efficacy can predict one’s leadership ability which is influenced by one’s opinion about himself and the leadership process; his opinion about his capacity to behave as a leader; the empirical experience in leadership processes; and of course, the identifications with his trainers and his commanders [22].

A person with high leadership capacities has abilities of self-regulation and manipulation of each goal [23] which are associated with personal self-efficacy [14,24]. Leadership self-efficacy has two dimensions: the internal and the external. Personal and situational variables influence leadership self-efficacy, which subsequently influences personal behavior [25,26], while self-perception of leadership efficacy may be influenced by colleagues’, trainers’, and external observers’ assessments [27]. Research has shown that an effective leader has a strong commitment to his role and duty, is self-determined, resilient, and focused on his goal, and is multitasking, resourceful, and effective in problem-solving [28,29]. Individuals with high perceived self-efficacy are more persistent in achieving goals, working harder, successfully performing their duties, succeeding more often even in difficult conditions, and are resilient even in probable failure [14,30-33]. Additionally, they create personal goal-accomplishing strategies to facilitate the process and respond more optimistically to negative feedback [28]. The stronger perceived self-efficacy, the stronger personal commitment to several activities and goals becomes, while strengthened perceived self-efficacy increases the motivation to achieve goals [14,31]. Self-feedback and self-efficacy are important in effective goal-choosing [28], while self-efficacy is connected to the increased effort that leads to better results [28,34-36]. Bandura’s experimental research on self-efficacy and leadership in decision-making shows that high perceived self-efficacy helps personal leadership efficacy because it influences the evaluation of goal strategy [37]. Finally, several personal features are connected to leadership [38] since historically, leadership theory focused on the role of self-confidence in leadership success [39-43].

Methods
To access and analyze the most relevant content on the topic, studies were sought covering the following terms of theoretical and experimental research on self-efficacy theory, perceived self-efficacy, military leadership, transformational leadership, perceived self-efficacy, military resilience, effective leadership, leadership, athletic self-efficacy, sports self-efficacy, military performance, performance self-efficacy, and personality characteristics.

Data sources
The main criterion, for selecting the scientific articles that constituted our data, was to be written in English. We used the following sources: Google Scholar, PubMed, PsycINFO, and Scopus Databases. From bibliographic references of each primary source, we searched for additional relevant journal articles. Our pool data included 58 articles and books, and one meta-analysis article which had analyzed 35 articles.
Eligibility criteria
For the presentation, we focused on scientific articles concerning military leadership and the prerequisites for effective military leadership, as well as the impact of performance in sports activities. We did not include or neither exclude articles from our data pool based on the size of the subjects' populations, the type of study design, or the specific results of the studies. The incorporated articles provided precise data on self-efficacy and its association with the military environment and personnel. The selected journal titles and abstracts were screened by the authors, and those that did not fit the inclusion criteria, or in which there was no consensus between the authors, were discarded.

II. REVIEW
Although military self-efficacy is an issue of great interest, it has not been investigated enough yet. The American Manual on Army Leadership (FM 6-22) [44] defines the doctrine of fundamental principles and desired levels of effectiveness in military leadership. The main motif specifies the skillful leader by his personality characteristics and his abilities [45]. Physical and mental resilience has also been shown to be solid foundations for effective military leadership and consequently for military self-efficacy.

Effective military leadership and personality
Recent military leadership research has focused on moral attributing values (patriotism, discipline, readiness, liability, courtesy, respect, hierarchy, broadmindedness, cooperation, camaraderie, fair play, and morality). Also, personality characteristics or individual skills (conscientiousness, openness to experience, and extraversion) are of great importance in the research for military leadership. Finally, creative thinking (autonomy, psychological safety facing error, or criticism) of effective leaders plays an important role in this kind of research [46-48]. Thereby, the effectiveness of leadership seems to be the most important goal of military training, where behavioral austerity rules, individual posture/dress standardization, a list of penalties, stressful challenges and exigencies, and a myriad of unexpected circumstances contribute to a strict relationship between self-efficacy and military leadership [45-47,49]. In addition, service members perceived self-efficacy, seems to be a mediator to the engagement and the response in psychological treatment in cases of remote concussion. Thus, increasing patients' levels of self-efficacy may be important for the successful treatment of psychological distress in those with remote concussion [50].

Personality characteristics and intellectual abilities are, allegedly, the necessary criteria for effective leadership, which mainly develop from moral reasoning [51]. The relationship examined between moral reasoning and effective military leadership of students of the American Military Academy “West Point” [52], where high associated levels emerged, as well as in another study, a highly significant relationship was found between moral reasoning leaders and transformational leadership [53]. Other studies show that self-efficacy is a partial mediator of the relationship between personality traits and cadet performance [47].

Transformational leadership is defined as a leadership style that inspires co-workers, subordinates, and the group’s interests beyond its expectations. Encourage them in a specific mode by conducting leadership development practices (workshops and programs) to lead all team members to perform according to their best abilities and skills and contribute to project success [54]. Such leaders are more likely to think about problems in different ways and have knowledge of a greater number of behavioral options. Therefore, leaders with more complex moral reasoning are more likely to appreciate their goals beyond self-interest and to provide the benefits of actions that serve the collective advantage. On the contrary, according to the transactional leadership style, the leader motivates his co-workers or subordinates through amending existing techniques, mainly based on reward and punishment [55].

Military leadership is associated with emotional intelligence, defined as the individual’s ability to (a) recognize emotions; (b) control and regulate emotions (anxiety, fear, anger), (c) be optimistic despite obstacles and difficulties; and finally, (d) develop social skills (e.g. ability to influence, effective communication, inspiring and guiding leadership, proper crisis management, relations capacity, cooperativeness, and teamwork) [56]. A survey applied in the Military Navy showed a positive correlation between four basic features of emotional intelligence such as perceiving emotions, facilitating thought, understanding emotions (both in self and others), and emotion management with effective military leadership [57].

Resilience and leadership effectiveness
Another investigated parameter is the person's resilience, which is associated with leadership effectiveness. The American doctrine of military leadership describes the effective leader as a person who quickly regains his strength, keeping the mission even after a setback, an injury, or increased stress derived from adverse military conditions (fear, hunger, cold, threat). Thus, resilience is listed as one of the twelve properties that constitute a capable leader [44].

Resilience as a personality characteristic is developed early in life and remains relatively constant over time, enriched by positive experiences and following beliefs of positive self-efficacy, although it may change under certain conditions. A resilient person has a high sense of life and work commitment, a high sense of self-control, and adaptability to changes and challenges throughout their life. He interprets a stressful and painful experience as a provocative and unexpected life aspect [58]. As such, resilience operates as a protective individual’s factor against pressure, increasing his performance. Five different factors related to leadership performance were examined in students from “West Point”, during the social
crisis in effective leadership, where resilience emerged as the strongest [58]. Similarly, it was identified as an essential element of effective leadership applied to the participating soldiers in the Gulf War as an adjustment pressure element to which they were exposed (stress buffer) [59]; and when psychological resilience is low, the perceived stress level reduces the effect of resilience on military performance [60]. Thus, the high intellectual situation of leaders seems not to be a decisive factor in effectiveness because eventually other personality characteristics or behaviors, such as hardiness, influence the leader even under high-pressure conditions (i.e. military battle) [48,61]. Nevertheless, effective military leadership is generally evaluated by the achievement of training goals, objectives, and content [17,43,44,62]. Research reveals significant differences between military students and other college students in their leadership self-efficacy. The military-trained students were found to be more effective in leadership skills than the college students [18]. Military personnel with high self-efficacy tend to set ambitious goals and demonstrate with determination the required effort to achieve them. This optimistic and confident attitude has a positive impact on the performance of individuals in military contexts, and afterward, it is proven to be decisive not only for achieving individual success but also for enhancing the collective effectiveness of military groups [49]. On the contrary, a sense of high self-efficacy in the academic field is more positively associated with high learning goals and high academic achievement and negatively correlated with all three types of academic delinquency (copying, plagiarism, falsification) [63].

**Military leadership, physical fitness, and effectiveness in sports activities**

A few studies illustrated that participation in physical exercise and sports affects leadership development [19,62,64] and that effective athletic experience can forecast leading abilities [65], although this correlation has not been confirmed yet [66]. Consequently, experiences aiming to conquer the strict sense of leadership ability play an important role in the conquest of self-efficacy in leadership. So, the military education programs formed by a stern culture, value system, and history exist, influencing the way leadership is experienced [18]. These experiences relate to (a) leadership and (b) participation in athletic exercise and sports.

Research shows that cognitive human behavior strategies have a principal effect on athletic performance, as physical ability is connected to personal psychological characteristics, perceived behaviors, and motor skills. Thus, self-efficacy perception greatly affects the athlete's behavior (facing success or defeat) [67]. Self-efficacy in sports performance and skills is described as “one’s belief in organizing and executing the necessary actions required to achieve desired motor skills and sports performance” [14]. This kind of self-efficacy is connected to decisions about what someone can do with his skills and how much faith he can rely on his competencies, attempts, commitments, and perseverance [68]. Individuals create their self-image (body and mind) through self-perception, self-esteem, and self-confidence, and that is how it is determined briefly in the self-efficacy schema in sports and performance [69,70]. Individuals with a high self-efficacy perception of body activity participate more, work harder, persist for longer periods (when facing difficulties or defeats), and finally demonstrate higher performance, improving, once again, their effectiveness, due to their new personal experiences [71,72]. Therefore, several factors influence self-efficacy’s perception of physical activity and sports. First, physical self-image is important because all characteristics of physical appearance perception create a coherent self-image. Self-perception of physical athletic ability and physical skills are also at the center of that process. In addition, confidence in physical self-presentation means beliefs of success in sports performances and skills influence that kind of self-efficacy. Finally, total physical self-efficacy plays an important role because faith in possessing all necessary physical abilities and characteristics to achieve skills, bodily activities, and sports performances are at the center of one’s process to construct self-efficacy’s perception of physical activity and sports [67,71,72]. Suitable motivation combined with necessary skills increases the sense of self-efficacy, influencing challenges, activities, attempts, perseverance, and achievements. Motives provoke exercise participation, along with behaviors and attempts needed to act. The phase of action is followed by the need for self-adjustment, and facing difficulties or failures is performed where needed. New experiences require adapted behaviors and new efforts to face them until they become a new personal attitude, affecting a new sense of self-efficacy [14,51,73]. A key feature of successful athletes is their ability to handle adversities with an unshakable sense of self-efficacy focused on their athletic performance. They ignore distractions, control their negative thoughts, and are fixated on their goals and challenges. Successful athletes with high self-efficacy can forgive themselves for their mistakes and continue as if nothing ever happened. Thus, the emotional reactions and the anxiety of failure or stress do not aggravate their situation, which may have negative effects on their future and their performance [52].

More than thirty-five studies have concluded that there is a close correlation between athletic performance and a sense of self-efficacy. These studies were investigating three main groups: athletes (individuals), sports teams, and coaches. Analyses were conducted on the types of self-efficacy measurements and physical performance, as well as the type of physical exercise and the time of the evaluation [72]. Thus, self-efficacy directly relates to the achievement of high sports performance. However, the impacted strength varies from survey to survey depending on (a) the required skills (motor skills objective, group or individual sports skills, strategic skills, emotional skills, etc.), and (b) how it is used according to the level of the sport's aim (score) [72,74-77].
Other studies have focused on the correlation between the perception of self-efficacy and self-confidence in various types of athletic-motor skills and sports performances [78-81]. Experimental studies, on handling efficiency, confirmed the contribution of self-confidence to the causal relationship between self-efficacy and motivation under competitive conditions [82-87]. High perceived self-efficacy improves the motivational indexes and reduces the athletes’ susceptibility to the negative consequences of defeat. Self-confidence in athletic-motor skills and sports performance is required during exercise for the achievement of high athletic goals. Low self-confidence prevents even the most talented athletes from taking advantage of their abilities [52]. Athletes with high self-efficacy maintain high values even under physically strenuous conditions [83].

Finally, a lot of studies focused on the relationship between the perception of self-efficacy and perceived physical preparedness (fatigue and stress), have confirmed a negative correlation. People with a perception of high self-efficacy in false positive feedback report increased well-being and experience significantly less anxiety and exhaustion [88-90]. The enhancement of self-efficacy helps to strengthen objectives. It also plays an important role in increasing physical effort and persistence (physical readiness) along with the continuation of physical exercise and strain on the individual [91-95], as well as intelligence and cognition along with athletic-motor skill readiness under difficult, stressful, and tiring conditions [96]. It seems that future research could focus on feedback-orientated techniques for the development of athletic-motor skills and sports performance (enhancing personal experiences) to strengthen military self-efficacy [97-99].

III. CONCLUSIONS

Bandura, self-efficacy theory father [10] investigated its relationship with several effective suggestions, involving personality dimensions, and emotions. However, a research gap on self-efficacy in military leadership and the investigation of personal-social-cognitive characteristics and skills, as well as other self-efficacy fields show up [20]. Cognitive and behavioral concepts of individual self-efficacy are demonstrated in this review including the way it affects and is affected by several variables and its role in the military leadership and sports performance fields. Research in military self-efficacy is not as rich as in sports and perceived self-efficacy of physical exercise readiness.

A deduction is also made about, how physical exercise helps in shaping a multifaceted and harmonious personality, including self-awareness and self-esteem [70,71], necessary information considered for the military personnel profile. Military leadership, as a specific leadership form, begins with project planning and administration and is completed by their application and implementation, always requiring physical readiness. Considering that Military personnel must demonstrate intelligent, cognitive, and athletic-motor skill readiness under difficult, stressful, and tiring conditions [62,96]. Despite the high levels of intellectuality and ethics leaders possess it seems to not be a decisive factor of effectiveness, because eventually other personality characteristics or behaviors, such as hardness, influence the leader, especially under high-pressure conditions (i.e. military battle) [61].

Whereas Astin concluded that participation in sports can predict leadership abilities [65] and Navickienė appointed the multifaceted relationship amongst cadets’ resilience, self-efficacy, and military professional achievements [49], further investigation may follow. Research focuses on: (a) the relationship between perceived self-efficacy in physical activity and leadership, and (b) how this relationship is associated with the perception of military self-efficacy could enlighten the field. Experience seems to be the connecting factor in both military self-efficacy and its two leading factors (leadership self-efficacy and sports management leadership). Moreover, it is useful to investigate: (a) whether participation in sports affects leadership development [64], and (b) how these two variables in the military environment are connected.

It is notable to mention that there is no measurement tool to assess military leadership. The existing leadership self-efficacy [18] is part of a broader study tool of leadership characteristics in the context of theoretical military studies. It would be useful to develop a smaller and more manageable tool that is geared towards both military academy students and other military permanent personnel.

To conclude, future research can focus on interventional programs using psychological skills and feedback techniques oriented to the development of athletic-motor skills and sports performance (enhancing personal experiences) to strengthen military self-efficacy [72,97-99]. Finally, exploration might be focused on several other personality dimensions and variables, such as locus of control, obsession, sense of organization, narcissism, etc. which could be associated with perceived military self-efficacy.

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