65

Disparities among Greek Army Units due to Physical Training Instructor's Competency Influencing the Organizational Efficiency of the Army Physical Training

Vasiliki Kontodimaki^{1,*} and Costas Mountakis²

¹Hellenic Military Academy, Varis - Koropiou av. 16673, Attiki, Greece

²University of Peloponnese Department of Sport Management, Orthias Artemidos & Plateon str. 231 00, Sparta, Greece

Abstract: There has been no systematic measurement of the parameters affecting the organization's efficiency of the physical training of the Hellenic Army's Physical Training (APT). The purpose of this study was to evaluate the competency of the five different types of "Physical Training (PT) Instructor" within the Hellenic Army Units Training Cycles (HAUTCs), which influences the APT program's organizational efficiency in the Hellenic Armed (HA) forces. Two thousands eight hundred sixty four (2864) survey questionnaires (5 point *Likert type scale*) were selected. Participants came from a wide spectrum of Greek Permanent Army Personnel in HA. Five (5) different types of the PT Instructors were tested, measured along three (3) dimensions (a) contribution to implementation, (b) frequency of implementation and (c) effectiveness/adequacy of implementation, which evaluate their competency in performance of APT programs (15 dependent variables). *ANOVA* and *Bonferroni* post comparisons were calculated for the total of the dependent variables among the three HAUTCs (A', B' and C') (3 independent variables). The probability of statistical significance was set at $p \le 0.05$. The results showed that the "Officer" (OFC) contributes, applies and suffices the APT programs mainly in HAUTCs A' and B', whereas "Permanent Commissioned Officer" (PCOF) applies APT programs more often in HAUTC C'. In HAUTCS B' and C' the "Physical Education Graduate" (PEG) seems more capable, efficient, and suitable when ordered to perform the PT programs. The results evaluated the duty of the PT Instructors' competency according to HAUTCs' requirements and introduce the necessity of its improvement in some cases.

Keywords: Army Instructor, army organization efficiency, army physical training, army units, regular army personnel, survey research.

INTRODUCTION

The planning, the management and the implementation effectiveness of a program or a military operation are an old and widespread concern. In the past, the armies used to measure their effectiveness in times of war and not in times of peace [1]. Nevertheless, according to the U.S. Army Physical Fitness School, the army is more efficient if the demand objectives have been set and the elements effecting them have been revealed, and finally if all these parameters have been achieved and evaluated during training [2]. More specifically, in the Hellenic Army Standing Orders and Special Military Training and Exercise Plans it is stated that in order to ensure the achievement of the expressed objectives, it is essential to have well organized Army Physical Training (APT) programs, to ensure these programs are managed properly and more so, to consider all the parameters that influence positively or negatively the achievement of the objectives set by each and every armed

forces or military unit [3-5]. Thus, the armed forces have the responsibility to prepare (plan) and execute (implement) APT programs, but most of all, to promote appropriate leadership based on army doctrine, readiness tasks, specific army conditions and standards to manage the military training [2, 6].

According to initial studies the following parameters were found to influence the organization and the management of the APT programs in Hellenic Army Units (HAUs): (a) The "Physical Training (PT) instructor", (b) The "conditions having a negative effect on APT programs' implementation and on trainees' participation", (c) The "training programming", (d) The "sports facilities", and (e) The "auxiliary means of training" [7-9]. These studies conclude that an influencing parameter in the effectiveness of the APT programs is indeed the PT Instructors' involvement. However, there is no research measuring the PT Instructor's competency in performance and management of the APT programs. Furthermore, there exist a few studies using Hellenic regular army personnel (career officers, low rank officers or permanent soldiers) as sample groups and even fewer concerning the Hellenic Army physical training organization and management.

^{*}Address correspondence to this author at the Hellenic Military Academy, Varis - Koropiou av. 16673, Attiki, Greece; E-mail: valikako@gmail.com

In the HAUs, there are three classes of personnel, professionals (career officers of high and low ranks), volunteers (regular army of low ranks and permanent soldiers) and conscripts (soldiers that are bound by law to train in basic army standards to serve with the army for a predetermined period of time). The Hellenic Army is organized in commands, formations and units which are divided into the brigades, divisions and corps, with two different branches, the Arms and the Corps. The Arms (i.e. Armor, Artillery, Signals, Engineering, Army Aviation, Special Forces) have direct participation in combat and are responsible for combat missions, while the Corps (i.e. Technical Corps, Supply & Transportation Corps, Ordnance Corps, and Medical Corps) are responsible for logistical support. All the HAUs are divided according to their operational training mission, and this is carried out in three training cycles: A', B' and C'. Thus, all the HAUs are divided in three Army Units' Training Cycles (HAUTCs). The HAUs that carry out the first training cycle (A') are mainly Boot Camps that include Basic Training (lasting 6 weeks) and Specialist Training (lasting 3-7 weeks). Basic and Specialist trainings take place in dedicated training facilities. The second training cycle (B') is conducted in Combat Units, which includes training for specialization and ranking of candidates in Arms and Corps and lasts for 6 months. Finally, the third cycle (C') is comprised of the operational and fitness training following the previous cycles and carries out in Regular Army Units. It includes the period from the end of cycle B' up to the duty discharge [5].

The PT instructor is a qualified fitness leader specialist that plans, implements and evaluates a physical training program. In general, every professional PT instructor is specialized in leading groups through various fitness programs aimed at muscle strength and endurance training, cardiovascular conditioning, stretching and relaxation, etc. In the Hellenic armed forces, the troop personnel, ordered to perform the duty of the PT Instructor in HAUs come from different Army Grades (professionals' or volunteers') who usually have considerable expertise in a diversity of sports, and demonstrate tactical and technical competences. While at the same time, they have also other duties within the troop or platoon. They have to be able to explain and demonstrate all sports activities, as well as know the best methods of presenting and performing them. Furthermore, for the Army PT instructor's "profile", it is essential and invaluable that she/he has the skills in planning, demonstrating and leading all physical readiness training exercises, drills and activities, as well as teaching the appropriate techniques, so she/he is tasked with ensuring that "her/his team" is and remains "Fit to Fight" [2, 10]. In some armed forces (e.g., British Armed Forces, New Zeeland Armed Forces) there are Army Fitness Schools which invite army personnel to be recruited and follow courses to specialize in this duty [11, 12].

APT refers to the implementation of PT programs within Army Units. The majority of the Headquarters and military commanders believe the current army has to conduct battle focused on physical training [13-15]. The aim of the APT is to make sure that the troops have the appropriate physical capacity needed for all aspects of the military mission readiness and at the same time it has to retain the army personnel healthy and uninjured [3, 13, 16]. These main physical fitness components guarantee the operational readiness of every Army Force. To achieve high levels of operational effectiveness and readiness, army members are required to be physically fit in strength, stamina, agility and coordination. Also they have to be able to perform general military, defense and security activities in accordance to their military occupation, such as, march long distances with full pack, crawl for long distances, lift and carry heavy objects, jump into and out of foxholes, lasting for many hours without sleep, etc. [17, 18].

Therefore, the purpose of this study is the evaluation of the "PT instructor's" competency in the performance and management of PT programs in HAUs, as one of the parameters that influences the APT's organizational efficiency. With this article we tend to give responses to the questions concerning (a) the differences in the competency of every type (commander, troop leader or personnel) who performs and manages as PT Instructor in the APT programs in HAUs, as well as (b) the statistically significant differences of every type of PT Instructor's competency among the three Training Cycles (A', B' and C') of HAUs, according to the operational mission and training of each Unit.

METHOD

Participants

Three thousands survey questionnaires were distributed in a wide spectrum to the Greek Permanent Army Personnel population, of which 2864 were fully and validly completed and entered in the research (rate of correspondence 95.5%). The sampling survey was conducted according to the stratified methods and proportional quotas in order to include a variety of spectrum of Greek Permanent Army Personnel by taking into consideration: (a) geographic stratification, (b) Armor, Artillery, Army-Corps (Infantry, Signals, Engineering, Army Aviation, Special Forces, Technical Corps, Supply & Transportation Corps, Ordnance Corps, and Medical Corps), (c) Regular army personnel (professionals and volunteers), and (d) Army Units' Training Cycles (HAUTCs), whereby all army units were divided into three cycles according to their operational training mission (A', B', and C'). From the total sample of this research shown in Table 1, 87.4% correspond to men and 12.6% to women. These Greek permanent army personnel were commissioned in HAUs divided in 3 training cycles according to their military operational mission of which 12.8% were in HAUTC A', 70.2% in HAUTC B', and 17.0% in HAUTC C'.

Instrumentation

For the assessment of the PT Instructor's competency, the appropriate part of the standardized Kontodimaki, Mountakis, Travlos, & Stergioulas questionnaire, was used [19]. This questionnaire included ten parameters that influence the effective organization and implementation of APT in HAUs [7-9]. It was drawn up in the Greek language and was adjusted to be used for investigation in the Hellenic armed forces [8, 19]. For the conduction of the present research, the parameter concerning the PT Instructor's

Split Sample Categ	ories	Percentages OF Sample (n=2864)
Sex	Men	87.4% (n=2504)
553	Women	12.6% (n=360)
	A´	12.8% (n=368)
Hellenie Amerikaise Treinie - Cooler	B′	70.2% (n=2010)
Hellenic Army Units Training Cycles	C′	17.0% (n=486)

Table 1. Split Sample Categories with their Percentile Scores and the Absolute Values in Parentheses.

involvement was selected, which consisted of 15 closed-type questions with reliable tested characteristics ($\alpha = 0.80$) also piloted before use of this study ($\alpha = 0.86$) [8, 9, 19-22]. The troop personnel usually ordered to perform the duty of the PT Instructor in HAUs came from different Regular Army Grades (RAGs): (i) "Officer" (OFC), (ii) "Permanent Commissioned Officer (PCOF), (iii) "Cadet Army Reserve (CAR)", (vi) "Physical Education Graduate" (PEG), (v) "Permanent Enlisted Soldier" (PENS) (5 dependent variables). All the above types of PT Instructors have been measured along three (3) dimensions which evaluated their competency in performance and management of APT programs: (a) the contribution of each one to the organizational efficiency of APT programs, (b) each one's frequency of application during the implementation of the APT programs, and (c) the estimation of each one's adequacy when the implementation of APT program had been completed. The questionnaire included three main questions concerning the three dimensions of competency with five sub questions concerning the different troop personnel (5 RAGs) ordered to perform the duty of the PT Instructor, thus it constituted of 15 researchable variables in total [3, 23, 24]. Details of the questionnaire are given in Appendix A.

The five-graded *Likert type scale* was used for responses to the questions, beginning with the lower point "1" which signified "not at all" and/or "never" up to the highest point "5" which signified "extremely" and/or "almost always" [8, 19]. Demographics of the participants were not allowed to be collected.

Procedure/Data Collection

The questionnaires were sent from the Hellenic Military Academy (HMA), the higher military educational institution in Greece, to the Military Major Formations by military post. Every post package was accompanied by the HAGS's official permission, including a classified table indicating the necessary number and criteria of participants, calculated in accordance to the scientific process as described above (e.g. number of personnel according to their military specialization, military ranks, and training cycle of units). A random sampling was conducted by anonymous and voluntary completion of the survey questionnaires in sealed envelopes, including a cover letter giving respondents all the instructions on how to fill out the questionnaire. The whole process, step by step, was monitored through official correspondence and collaboration among HAGS, HMA and the researchers, to facilitate and smoothly implement the research plan [25-27].

VARIABLES AND STATISTICAL ANALYSIS

One-way analysis of variance (one way *ANOVA*) and *Bonferroni post hoc* comparisons were conducted to test our hypothesis: There is no statistically significant difference concerning each PT Instructor's competency (15 dependent variables) among the HAUTCs, which are distinguished in three training cycles according to their operational mission: A', B', and C' (3 independent variables). The alpha level for rejection of the null hypotheses was set at $p \le .05$ [21, 25, 28, 29]. All statistical analyses were conducted using the Statistical Package for Social Sciences (SPSS, Chicago, Illinois, USA) version 17.0.

RESULTS

According to one-way ANOVA and the Bonferroni post hoc analyses shown in Table **2** statistical significant differences in contribution to the implementation appeared for all the Instructors (5 RAGs) ordered to perform the duty as PT Instructor among all the HAUTCs except for that of the PCOF's competency. The OFC's contribution was more essential as PT Instructor in HAUTC A' than in HAUTC C'. The rest of the paired comparisons did not reach statistical significance. The PENS was considered more necessary as PT Instructor in HAUTC A' than in all the other HAUTCs, while the PEG seemed to be more necessary in HAUTC C' than in the other HAUTCs.

The research showed statistical significant differences in frequency of implementation for all the Instructors ordered to perform the duty as PT Instructor chosen among all the HAUTCs in every troop personnel (5 RAGs) except for that of the CAR's and the PEG's (Table 2). The OFC applied the APT programs as PT Instructor in HAUTC A', while the PCOF managed the APT programs in HAUTC B' more often than in the other HAUTCs. The PENS seems to apply APT programs in HAUTC A' more often than in the other HAUTC A, despite s/his low values.

Finally, the research also showed statistical significant differences among all the HAUTCs in every troop personnel (5 RAGs) ordered to perform the duty as PT Instructor in accordance to their effectiveness/adequacy of implementation, except for that of the PCOF's competency (Table 2). The OFC was mostly effective/adequate as PT Instructor in

Table 2. Results according to one-way ANOVA analysis and Bonferoni comparisons for PT Instructor's competency (contribution to implementation, frequency of implementation and effectiveness/adequacy of implementation) in APT programs in HAUs among the 3 sections of HAUTCs (A', B', and C') (degrees of freedom=2861) on 5 point scale (Likert type)

One-way ANOVA Analysis for Phy		g Instructor's (PTI my Physical Traini	· •	• •		ons of HAUTCs (A	A´, B´, C´) On
HAUTCs PTI's Competency					A´ Training Cycle	B´ Training Cycle	C´ Training Cycle
Contribution to Implementation	Sum of Squares	Mean Squared Error	F-value	p-value	Mean ±SD		
Officer (OFC)	13.4	6.730	3.422	.033	3.56±1.5*	3.44±1.4	3.31±1.4*
Permanent Commissioned Officer (PCOF)	3,57	1.788	1.134	.322	3.26±1.3	3.36±1.2	3.37±1.2
Cadet Army Reserve (CAR)	10.6	5.321	3.164	.042	2.57±1.4*	2.40±1.3*	2.35±1.3*
Physical Education Graduate (PEG)	37.4	18.720	6.928	.001	3.26±1.7**	3.5±1.6**	3.66±1.6**
Permanent Enlisted Soldier (PENS)	45.3	22.683	11.172	.000	2.97±1.6***	2.73±1.4***	2.50±1.4***
Frequency of Implementation							
Officer (OFC)	24.6	12.326	6.561	.001	3.89±1.4**	3.36±1.4**	3.12±1.3**
Permanent Commissioned Officer (PCOF)	10.4	5.244	3.320	.036	3.20±1.3*	3.27±1.2*	3.15±1.2*
Cadet Army Reserve (CAR)	5.19	2.599	1.556	.211	2.53±1.4	2.45±1.3	2.38±1.3
Physical Education Graduate (PEG)	10.7	5.354	2.018	.133	2.54±1.6	2.48±1.6	2.65±1.6
Permanent Enlisted Soldier (PENS)	50.6	25.349	12.452	.000	2.89±1.6***	2.63±1.4***	2.40±1.4***
Effectiveness /Adequacy of Implemen	itation						
Officer (OFC)	31.3	15.680	9.303	.000	3.49±1.4***	3.33±1.3***	3.12±1.2***
Permanent Commissioned Officer (PCOF)	7.96	3.981	2.724	.066	3.25±1.3	3.1±1.2	3.06±1.1
Cadet Army Reserve (CAR)	12.1	6.081	4.334	.013	2.52±1.3*	2.33±1.2*	2.31±1.1*
Physical Education Graduate (PEG)	32.9	16.484	5.935	.003	3.19±1.6**	3.42±1.7**	3.59±1.6**
Permanent Enlisted Soldier (PENS)	40.9	20.476	11.512	.000	2.87±1.5***	2.66±1.31***	2.44±1.3***

*p<0.05 significantly diferent within all HAUTCs according to ANOVA analysis and Bonferoni post hoc comparisons

**p<0.01 significantly diferent within all HAUTCs

***p<0.001 significantly diferent within all HAUTCs

HAUTC A' than in the other HAUTCs. The PEG seemed to be effective/adequate more in HAUTC C' than in the other HAUTCs. The PENS and the CAR were effective/adequate more in HAUTC A' than in the other HAUTCs, despite their low values. The Fig. (1) demonstrates a more visual presentation of the dependent values' comparisons among the independent values.

DISCUSSION

The results of this study clearly showed which types of RAGs are more competent for the duty of PT Instructor in the different HAUTCs. It was observed that the OFCs were chosen more often as more competent and adequate than any other PT Instructor in HAUs. OFCs are the professional officers, who are graduates of the Hellenic Military Academy, the higher institution in Hellenic army forces, and they become typically the army personnel who command units. After four years of education, both in academic and military/physical fitness training, one of their duties in HAUs is the leadership supervision of the PT programs, having the most completed and appropriate education in armed forces based on their practical experience and participation as cadets in the APT programs implemented in HMA [3, 5, 30, 31]. Moreover, the results showed that OFCs implement APT programs more often in HAUTCs A' and

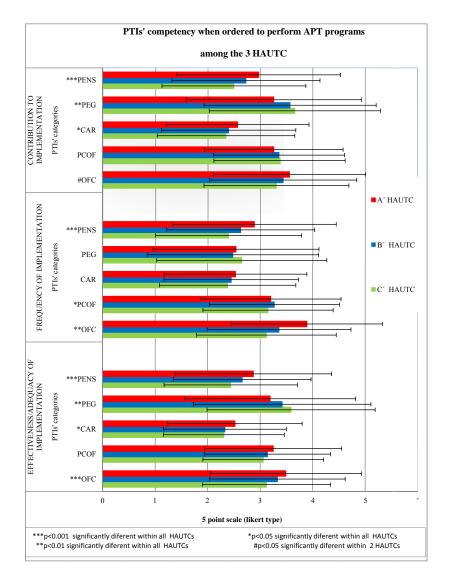


Fig. (1). Means, sd and significant differences based on the statistical data presented on the Table **2**. PTI=Physical Training Instructor, APT=Army Physical Training, HAUTC= Hellenic Army Units' Training Cycle, OFC=Officer, PCOF= Permanent Commissioned Officer, CAR= Cadet Army Reserve, PEG=Physical Education Graduate, PENS=Permanent Enlisted Soldier.

B', and are quite suitable for doing so. In their career, following their rank responsibilities, OFCs lead units and troops and are responsible for their military training. Basic and Specialist training and ranking of soldiers in Arms and Corps are performed mainly in HAUTCs A' and B', where the OFCs' leadership and commandment are indispensable. As mentioned before, the OFCs develop specific abilities on basic and specialist training and demands through their own educational training in their institution as cadets. Nevertheless, they have not acquired other specialization in the fitness management and planning, training methods, techniques implementation and supervision, limits of human physiology, elements of human behavior, etc. that are required for efficient PT leadership [2, 10].

The PCOFs' "profile" did not show great fluctuations in the total measurement of their competency and, as OFCs, they seem to be in the position of PT Instructor more often than the rest of the RAGs, and specifically in HAUTC B'. PCOFs are the professional commissioned officers, the three or four lowest officers' ranks, graduates of the Hellenic Permanent Commissioned Officers' School having passed two educational years, both in academic and military/physical fitness training. Units, under their command, are generally not expected to operate independently for any significant length of time, although they usually fill staff roles as platoon leaders or subordinates involved in leadership and training. Their competency as PT Instructors is based on their practical and exercise experience as cadets in the APT programs implemented during their studies [3, 5, 32]. Moreover, during their career in all HAUTCs, they gain more experience, subsequent to their military branch, competences and professional qualifications as units' and troops' commanders and sub leaders, a fact that makes them obviously more adequate PT Instructors than the lower RAGs.

The results also showed that PEGs contributed more to implementation of APT programs than all the other RAGs and they were more effective and more suitable as PT Instructors. However, PEGs were appointed to the position of PT Instructor in HAUs the least of all RAGs. PEGs are considered to be more essential in HAUTCs B' and C', probably due to their specialization in physical education training. Their knowledge on physical education (motor skills, training methods, sport management, sport behavior etc.) enriches the mode and the methods of the military training in HAUTCs B' (combat training for specialization in army) and C' (operational training for maintenance of training). In practice this type of PT Instructor is rare in HAUs, because there are few army personnel trained prior to entering army carrier.

There are no opportunities from army personnel to specialize in PT training appropriate to each HAUTC while in the army. An army fitness school began operating in 1955 and its purpose was to educate Senior Officers as PT Instructors. The educational program consisted of participation in specific variety in army training exercises (i.e. basic and combat fitness, physical fitness endurance, rifle exercise, army obstacle course) and sports (i.e. fighting, boxing, sports teams, shooting, swimming), as well as fitness leadership skills, oorganizational skills of sports events and military competition, and sports management and refereeing. The school closed in August 1987 for reasons unknown to the researchers. Since then, the education dedicated for fitness training is distributed in all the particular RAGs' training programs [9].

It would be an omission to not mention that, PEGs do exist in HAUTCs but are not equally distributed amongst them, as indicated from the results. Their recruitment in HAUs is by coincidence and not because of strategic placement of duty.

PENSs and CARs have a lower PT "profile" concerning their competency than the other PT Instructors. These RAGs are often referred as "the backbone" of the armed services. They are the primary and most visible leaders within the army population (conscripts'). Their admission in armed forces depends on qualifications and success (pass) in some physical fitness tests. Subsequently, the particular training cycles for each of these RAGs last for a few months in HAUTCs A' and B'. Additionally, passing a battery of physical fitness tests during their Basic and Combat training is also required. Their advice and guidance are particularly important for junior officers. Although they begin their careers in a position of authority they generally lack practical experience and specific knowledge [3, 5, 33].

To conclude, it is inferred that, while the survey responders declared that the PEG's contribution, especially in HAUTCs B' and C', could be the most useful and effective, the Regular Army Personnel of high (OFC) and low ranks (PCOF) seem to be more confident as PT Instructors for every HAUTC based on their army leadership skills, a fact that explains why they are the most frequent ordered PT Instructors in HAUs. To date, the modern army PT Instructors' adequacy and competency rely on the individuals' total practical experience prior to the military service, as well as their participation in military exercises and sports teams during their career, thus their practical experience should not be clearly attached and oriented to the HAUTCs' missions and demands. These conceptions seem to agree with the results of a similar Canadian army research, where PCOFs mainly implemented the APT programs, while it had been realized that they were inadequate in qualifications and knowledge to ensure the APT programs' efficiency. To overcome this problem the Canadian Armed Forces developed the educational programs entitled "Military Fitness Training Instructor" and "Assistants of Training Instructors on Basic Military Fitness" (Basic Fitness Training Assistant-BFTA) [34-36]. The US Army (USAPFS) uses similar methods, in order to promote the appropriate doctrine and military physical fitness training, either via the Master Fitness Training program (Exercise Leaders Course) or through revisions of the Field Manuals, Training Circulars and Army Doctrine Reference Publications. These processes provide the necessary leadership elements, which address the importance of army fitness leadership appropriate to each HAUTC [2, 37]. In some other armed forces, such as in Britain or New Zeeland, Army Fitness Schools operate by recruiting personnel to follow courses that certify them as APT Instructors according to the HAUTCs' (Basic and Combat) training missions and demands [14, 18]. The appropriate and efficient PT Instructor's profile needed for success includes a military specialized experience, a development in all required military and fitness skills, an educational background that instills the fitness leader's competencies, and personal and professional goals of continued education. Consequently, the following recommendations can be proposed to HAGS: (a) to conduct specific theoretical and practical PT training in Military Academies and Schools, (b) to develop advanced studies in APT with a postgraduate degree (military master's degree), (c) to promote scientific research in the whole spectrum of military physical fitness performance and management, and (d) to recruit PEGs, to participate in the APT programs' implementation in HAUs, after having completed a relevant course on military training and doctrine, similar to the other armed forces' programs.

CONCLUSIONS

The usefulness of this study lies in putting an appropriate assessment in place and providing information to the Army about the PT Instructors' competency thus influencing the management of the APT effectively. The main conclusion is that in the Hellenic Army there are many differences among PT Instructors' competency especially among the different HAUTCs. Consequently, in HAUTC A', OFCs are the most frequent PT Instructors and are considered the most effective and adequate to contribute to the demands of the training mission of this cycle. In HAUTC B' PEGs are considered as the most capable and effective PT Instructors when they are recruited in these units. However, due to an uneven distribution of this population, the OFC and the PCOF perform the APT programs as PT Instructors more often than all the other types. Nevertheless, PEGs and OFCs are effective for the implementation of APT programs in the HAUTCs above (A' and B'). Finally, in HAUTC C' PEGs are considered the most effective in the implementation of the APT programs and can equally contribute to APT when they are recruited. However, as it was mentioned before, the PCOF and the OFC perform the APT programs as PT Instructors more often than all the other types, due to their practical experience and army authority. The appropriate

Greek Army Units' Disparities in the Fitness Instructors' Competency

specialization in leadership and management of the military physical fitness training according to each HAUTC's mission seems essential because only the best qualified PT Instructors should effectively lead APT programs in the army units. Thus, promotion of the PEGs recruitment in HAUs combined with the opportunity for all army personnel to further specialize as military PT Instructor by attending army physical fitness bachelor or post graduate programs would be useful for the Hellenic army. Further research could be conducted in this area by seeking potential differences among specific army ranks' opinions to enrich the results of this study.

CONFLICT OF INTEREST

There were no financial or personal conflicts of interest for this study. The results of the present study do not

APPENDIX A

constitute endorsement of the product by the author or the Journal.

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	The following survey questions were given to the responders who were asked to grade each of the five types of PT Instructor (RAGs) using the five-graded Likert type scale	
CONTRIBUTION TO IMPLEMENTATION	 (1) How much, <u>each one of the</u> RAGs below ordered to perform the duty of PT instructor, can contribute to the efficiency of the APT programs: (i) "Officer" (OFC)? (ii) "Permanent Commissioned Officer (PCOF)? (iii) "Cadet Army Reserve (CAR)"? (vi) "Physical Education Graduate" (PEG)? (v) "Permanent Enlisted Soldier" (PENS)? 	Likert type scale 1 2 3 4 5 1 2 3 4 5
FREQUENCY OF IMPLEMENTATION	 (2) How often, <u>each one of the RAGs below</u> does perform the duty of PT instructor of the APT programs: (i) "Officer" (OFC)? (ii) "Permanent Commissioned Officer (PCOF)? (iii) "Cadet Army Reserve (CAR)"? (vi) "Physical Education Graduate" (PEG)? (v) "Permanent Enlisted Soldier" (PENS)? 	Likert type scale 1 2 3 4 5 1 2 3 4 5
EFFECTIVENESS /ADEQUACY OF IMPLEMENTATION	 (3) How qualified, <u>each one of the RAGs below</u> is to perform adequately and sufficiently the duty of PT instructor of the APT programs: (i) "Officer" (OFC)? (ii) "Permanent Commissioned Officer (PCOF)? (iii) "Cadet Army Reserve (CAR)"? (vi) "Physical Education Graduate" (PEG)? (v) "Permanent Enlisted Soldier" (PENS)? 	Likert type scale 1 2 3 4 5 1 2 3 4 5

REFERENCES

- Jankowski B. Officers' values and military effectiveness 44th Annual Convention Portland, Oregon 2003: 12-15
- [2] U.S. Army Physical Fitness School. Army Physical Readiness Training. Army Training Circular TC 3-22.20 [cited 2010]. Available from: http://www.physicallytrained.com/category/tc-3-22-20/, last accessed in 20/3/2013
- [3] General MTEP/HAGS/training directorate/3a. General Military Training and Exercise Plan. Hellenic Army General Staff, Army Training Directorate /3a (in greek). Athens, GR: Hellenic Army press 2005.
- [4] General MTEP/HAGS/Training Directorate/3a. General Military Training and Exercise Plan. Hellenic Army General Staff, Army Training Directorate /3a (in greek). Athens, GR: Hellenic Army press 2006.
- [5] HAGS/ ETD/3/2nd. Standing Military Order: 3-44 (in greek). Athens, GR: Hellenic Army press 2007.
- [6] Exley R. Organizational Effectiveness and Efficiency. In U.S. Army Audit Agency Strategic Plan. FYs 2011-2015; USA: Department of the army 2011: pp. 17-21.
- [7] Kontodimaki V, Mountakis C, Dimitriou A. The organization and management of physical education in the Greek Army. Proceedings of the 17th International Congress of Physical Education & Sport. Komotini, Greece: Democritus University of Thrace 2009: pp. 22-4.

- [8] Kontodimaki V, Mountakis C, Dimitriou A. Development of a questionnaire to investigate the management of physical education in the Greek Army. Proceedings of the 17th International Congress of Physical Education & Sport. Komotini; Greece. Democritus University of Thrace 2009: pp. 22-4.
- [9] Kontodimaki V. The organization and management of the physical education in Greek Army. An approach concerning the parameters of the educational organization on the army physical training and fitness and their objectives. Ph.D. diss., Department of Sport Management, University of Peloponnese: Greece 2012. Available from: http://sse.gr/files/Kontodimaki_Perilipsi.pdf, last accessed in 7/7/2013
- [10] Headquarters Department of the U.S. Army. Army Physical Readiness Training. Field Manual FM 7-22. Washington: DC 2012.
- British Army. Royal Army Physical Training Corps. Recruiting. Crown Copyright. Available from: http://www.army.mod.uk/raptc/30475.aspx
- [12] New Zeeland Army. Physical Training Instructor. Defence Careers NZ Forces. Available from: http://www.defencecareers.mil.nz/army/jobs/physical-training-instructor
- [13] Knapik J, Daniels W, Murphy M, et al. Physiological factors in infantry operations. Eur J Appl Physiol Occup Physiol 1990; 60: 233-8.
- [14] Research workshop on physical fitness standards and measurements within the Military Services. Fort Detrick, Meryland, U.S.A.: Military Operational Medicine Research Program 1999.
- [15] Batchelor JE. The Applicability of the Army Physical Fitness Test in the Contemporary Operating Environment. Master's degree thesis, U.S. Army Command and General Staff College. ATTN: ATZL-SWD-GD Fort Leavenworth 2008.
- [16] Land Force Command. Army Fitness Manual. Canadian forces 2005.
- [17] Special MTEP/HAGS/ALD/3/2nd. Special Military Training and Exercise Plan. Hellenic Army General Staff, Army Training Directorate 3/2nd (in greek). Athens, GR: Hellenic Army press 2007.
- [18] Roy T, Springer B, McNulty V, Butler N. Physical Fitness. AMSUS - Association of Military Surgeons of the U.S. Military Medicine 2010; 175 (1): 14-20
- [19] Kontodimaki V, Mountakis C, Travlos AK, Stergioulas A. The investigation of the efficiency of the organization of physical training in Greek army. J Biol Exerc 2012; 8: 27-36.
- [20] Welk G. Physical activity assessments for health-related research. Champaign, IL: Human Kinetics 2003.

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- [21] Sun W, Chou Ch, Stacy AW, Ma H, Unger J, Gallaher P. SAS and SPSS macros to calculate standardized Cronbach's alpha using the upper bound of the phi coefficient for dichotomous items. Behav Res Meth 2007; 39 (1): 71-81
- [22] Howitt D, Cramer D. Introduction to SPSS in psychology: for version 16 and earlier 4th ed. Harlow: Pearson Education Limited 2008.
- [23] Dimitropoulos E. The evaluation of education and training activities. Athens, GR: Gregory publications 2004.
- [24] Canadian Battle School/Section 5 PT PIP. Physical Fitness Training. Available from: http://www.army.forces.gc.ca/32cbg_hq/2005/Battle School/Section 5 PT PIP.doc.
- [25] Kabitsis C. The Research in Sports Sciences. Thessaloniki, GR: Tsiartsianis & co. 2004.
- [26] Thomas JR, Nelson JK, Silverman SJ. Research Methods in Physical Activity. 5th ed. Champaign, IL: Human Kinetics 2005.
- [27] Creative Research Systems. Sample Size Calculator. Available from: http://www.surveysystem.com/sscalc.htm, [retrieved on 20/11/2007].
- [28] Meyers LS, Gamst G, Guarino A. Applied multivariate research: Design and interpretation. Thousand Oaks, California: Sage Publications 2006.
- [29] Cronbach LJ, Shavelson RJ. My current thoughts on coefficient alpha and successor procedures. Educ Psychol Meas 2004; 64(3): 391-418.
- [30] Hellenic Army Academy Cadets. Enrolment-Studies [cited 2008-2013]. Available from: http://www.sse.gr/files/eisagwgi-foitisi.pdf.
- [31] Hellenic Army Academy Cadets. Regiment Organization (Daily Program) [cited 2008-2013]. Available from: http://www.sse.gr/page_en.php?id=17
- [32] Hellenic Permanent Commissioned Officers' School [cited 27 June 2013]. Available from: http://www.smy.gr/commandants-greeting/
- [33] HAGS/ ETD/3. Professional Soldiers' Training. Standing Military Order: 3-43 (in greek). Athens: GR: Greek Army Press 2008.
- [34] Personnel Support Agency. Fitness Programs. Available from: http://www.cfpsa.com/en/psp/fitness/programs_e.asp.
- [35] Canadian Forces. Cadet Instructor [cited 2013]. Available from: http://www.forces.ca/en/job/cadetinstructor-174#training-1, [last accessed in 20/3/2013].
- [36] The Canadian Forces/Personnel Support Agency. Military Educational Seminars [cited 2013]. Available from: http://www.cg.cfpsa.ca/cgpc/Petawawa/EN/FitnessandSports/MilitaryFitness/Pages/MilitaryE ducationalSeminars.aspx
 [27] Hundward Forces/Personnel Support Agency. PM 21 20. Physical Section 2014; 2015 [2017].
- [37] Headquarters Department of the U.S. Army. FM 21-20. Physical Fitness Training. Field Manual. Washington 1998.