

A PROPOSED TRAINING PROGRAM TO DEVELOP SOME PHYSICAL CHARACTERISTICS DUE TO JOB REQUIREMENTS FOR CIVIL PROTECTION WORKERS

Dr. Hagggar Kherfan Mohamed

Institute of Physical & Sport Education, Mestghanem

mohadjar@hotmail.com

Abstract:

With the evolution of man and human societies and prosperity of industry and urbanization and the consequent modern technology in addition to various disasters and calamities,

It is necessary to the world to think of finding a solution for the protection of property and persons came the idea of establishing a Civil Protection,

As the nature of the work this work requires incumbent rely on physical activity and sports to maintain the level of fitness agents of civil protection, as it is so physical activity only way for that, because of its great importance as it contributed in maintaining fitness and improve the technical level through interventions daily.

Based on these important public administration decided for Civil Protection to make physical education and sports practice mandatory for being an integral part of the civil protection tasks.

Through field visits we've made to the National School of Civil Protection not lucky random in training and weakness in the composition of predators, where limited training to do some exercises and some games in football, and this prompted us to address this phenomenon to study and proposing a training program to develop some physical attributes and in accordance with the requirements of the profession, and this was asked the following question:

- Is the proposed training program develops some physical capacities for civil protection agent?

Keywords: Training program - The physical attributes –Civil Protection

1. INTRODUCTION:

Since his creation, man attempted to protect himself from disasters and dangers. Soon, man identified the nature of this land and faced types of dangers. There are natural dangers such as heavy rains and accompanying lightning, floods and torrents, hurricanes, earthquakes, volcanoes and other dangers such as epidemics and killer diseases of human societies. With life development, these dangers facing humans increased including forest fires, floods, outcomes of wars, riots and various risks and dangers facing humans in this age.

Civil protection field is one of the basic pillars of society through its basic tasks including rescuing, first aids, firefighting, working day and night in order for humans to live a safe life (Ministerial Decree No. 108/83 for 1983). Civil protection workers face multiple troubles including natural or industrial disasters. They try to reduce their effects and results, but these noble human tasks aim to help in civil protection make them need to own a set of physical characteristics, physiological and psychological abilities. This requires a careful scientific training in addition to the necessity of trainers to have knowledge, science and ability to qualify and train. Sport practicing in civil protection forms one important aspect as we consider sport as an element of physical, psychological and mental preparation for peers. Good work performance has to come from physically and mentally fit persons and this is achieved by sport activities. This is an application of the quote: "a sound mind in a sound body". The concern with sport activities increased as a major activity in preparing civil protection workers in order to reach good performance with high efficiency in implementing their assigned tasks. The sport activity became a goal through which championships are achieved.

Problem of the Study:

With the development of humans, the concept of prevention from dangers and taking necessary precautions and procedures to face dangers developed according to these dangers. With the increase of these dangers, there was the need to establish organizations with multiple names such as civil protection, civil defense or other names in order to keep lives of people and help them at times of natural or industrial disasters.

The concept of civil protection refers to protection and rescue of people and properties at all conditions. It can also be identified due to its tasks and goals of protection from natural, industrial and military dangers with mitigation of their results, working to continue operation of important facilities, set suitable procedures and works, protecting lives, private and public properties.

However, these noble and humane tasks of civil protection workers need them to own a set of physical characteristics, physiological and psychological abilities. This can only be achieved by having high fitness and physical attributes in order to perform their tasks well. Further, they should be able to overcome dangers, protect themselves and the others from them. This requires a careful scientific preparation in which sport training is the basic pillar through dependence on various sciences applied in sport training.

Sport training is this science or job that is characterized by improvising in decision making, selecting exercises and games on the expense of the trainer's desires. It exceeded to become an independent science in itself with its rules and norms on which it depends and from which it achieves the hoped goals. However, through field visits to the National School of Civil Protection at Mestghanem state, and after reviewing and analyzing contents of programs about training civil protection workers, it was clear that there was an arbitrary training and weakness in formation of workers. Training is restricted to perform some random exercises that are applied every day. These are circular station exercises performed by civil protection workers. Through analysis and discussion of contents of these exercises, it became clear that they are not subjected to the followed scientific basics in sport training such as gradual loads in addition to sport programming and planning, selection of suitable and purposeful training to prepare civil protection workers. This was a motivation for the researcher to discuss this phenomenon in study through suggesting a training program to develop some physical characteristics needed by civil protection workers. In order to define the effectiveness of the proposed program, the following questions were posed:

1. Are there statistically significant differences between results of pre and post-tests of the empirical sample?
2. Are there statistically significant differences between results of pre and post-tests of the control and empirical samples?

Objectives of the Study:

1. Define significance of statistical differences between pre and post-tests of the empirical sample in the studied variables.
2. Define significance of statistical differences between pre and post-tests of the empirical and control samples in the studied variables.

Hypotheses of the Study:

1. There are statistically significant differences between results of pre and post-tests of the empirical sample in favor of post tests for the studied variables.
2. There are statistically significant differences between results of pre and post-tests of the empirical and control samples in favor of the empirical sample for the studied variables.

Exploratory Study:

The researcher performed the exploratory trial to ensure good pace of the main trial of the study during the period from 09/12/2013 to 23/12/2013. The goal from this exploratory study was to find scientific basics of physical training and qualify respondents to use them in field application of tests. Accordingly, the researcher performed a study on a sample from the same school of civil protection workers. Results of this study were as following:

- Actual asserting that devices are relevant and suitable to serve the study.
- Controlling other random variables that may affect validity of the main results of study.

Physical exercises enjoy validity, reliability and objectivity as follows:

First: Test Reliability:

The Pearson correlation coefficient was used. After detecting significance level at freedom degree 13(n-2) and significance level (0.05), it was found that the counted value of each test was bigger than tabulated one estimated with 0.51 which asserts that tests enjoy a degree of reliability as shown in table No. (2)

Second: Test Validity:

Validity is measured by counting the square root of reliability coefficient. It was found that tests contain a high degree of validity as shown in table No. (2).

Third: Test Objectivity:

It is defined as consistency between different individuals for the same test and it can be expressed by reliability coefficient.

Table (1): Test validity at significance level 0.05

Statistical Scales Tests	Sample Size	Counted Value of Correlation Coefficient	Tabulated Value of Correlation Coefficient
Running from sanding	13	0.98	0.51
Retrospective Running		0.95	
The Pull-up		0.95	
Wide jump from stationary		0.92	
Jump by bending both legs		0.008	

Table (2): Test consistency at significance level 0.05

Statistical Scales Tests	Sample Size	Counted Value of Correlation Coefficient	Tabulated Value of Correlation Coefficient
Running from sanding	15	0.99	0.44
Retrospective Running		0.97	
The Pull-up		0.97	
Wide jump from stationary		0.95	
Jump by bending both legs		0.09	

Accordingly, the exploratory study achieved its goals at all levels by offering important details such as scientific bases of physical tests used in field trials which was asserted by tables (1) and (2) that show reliability and validity of physical tests.

2. METHODOLOGY:

The researcher used the empirical method with pre and post-tests as this is one of the most efficient and successful methods to test validity of hypotheses and determine relations among variables (Ibrahim, 2002: 137). The population of the study was represented in 760 civil protection workers from the National School of Civil Protection at Mestghanem state distributed to 14 groups. Each group includes 40 workers. Two groups were selected randomly and divided into control and empirical samples.

Table (3): percentage of the sample from population of the study

	Number	Percentage
Actual population	760	100
Sample of the study	80	10.52

Aspects of the Study:

Human Aspect: the sample of the study included two groups:

- One group representing the control sample consists of 40 civil protection workers.
- One group representing the empirical sample consists of 40 civil protection workers.

Time Aspect:

The main empirical study was conducted in the period from 03/01/2014 to 04/05/2014. In this period, pre and post physical tests were conducted as well as application of items of the proposed training program.

Spatial Aspect:

Pre and post physical tests were conducted in addition to units of the proposed training program at the playground of the National School of Civil Protection at Mestghanem state.

General Overview of Contents of the Certified Training Program:

Table (4): general overview of contents of the training program

Physical Requirements	Overview of Contents
Endurance	<ul style="list-style-type: none"> - Free running training at different distances. - Targeted games.
Speed	<ul style="list-style-type: none"> - Different running with various distances and intensities. - Running from different positions (standing, sitting...).
Agility	<ul style="list-style-type: none"> - Running with changing direction - Running among hurdles. - Running and leaping exercises.
Flexibility	<ul style="list-style-type: none"> - Muscle extension and joint flexibility. - Joint and ligaments extension training. - Stretching training.
Strength	<ul style="list-style-type: none"> - Jumping, pushing and lifting training. - Training of muscle strengthening with devices.

Certified Scientific Standards

With the great role of training programs in raising the level of physical performance in various activities, training theories and methods became an important aspect to achieve the best possible results in the light of abilities and potential of athletes. Raising level of physical abilities of civil protection workers is among other important things including correct planning of sport training and physical performance level.

The researcher depended on previous and latest studies and literature online about training and physical preparation in order to be consistent with the nature of preparing civil protection workers at the level of regional schools of civil protection. Thus, the researcher defined basics of the training program to be consistent with job requirements with consideration of characteristics of the age category and the nature of work in the school can be summarized in the following:

- Considering the nature of time dedicated for training onside school.
- Considering general principles of applying training loads such as gradual loads and individual differences.
- Integrating some helping means related to the nature of job.
- Variability and using the latest training and forms used in programs depending on video recordings and related references in addition to the internet.
- Considering recreational aspect with suspense and competition.

3. DISCUSSING RESULTS OF THE STUDY:

The study aims to define the effect of training on developing physical characteristics of civil protection workers. To do this, student researchers performed a set of pre and posttests including: 30 m dash, retrospective running and pull-ups for both samples of the study. Based on results, the researcher students studied sample homogeneity using the T test for students and this process resulted in the following:

Table (5): Homogeneity between empirical and control samples in results of pre-tests

Tests	Control Group		Empirical Group		T Counted Value	T Tabulated value	Significance
	Mean	S.D	Mean	S.D			
Running 30 m	5.05	0.44	4.85	0.39	1.89	2	Insignificant
Retrospective Running	11.04	0.68	10.97	0.63	0.43		Insignificant
The Pull-up	12.9	2.72	12.52	3.72	0.50		Insignificant
Wide jump from stationary	276	7.4	267.3	5.3	1.73		Insignificant
Jump by bending both legs 30 sec	63.77	6.23	61.6	7.02	1.44		Insignificant

Table (5) shows the following:

Both groups are homogeneous in physical tests: running 30 m, retrospective running, the pull-up, wide jump from stationary and the jump by bending both legs 60 sec. The counted T values were 1.89, 0.43, 0.5, 1.73 and 1.44 respectively which are less than tabulated T value (2) at significance level (0.05) and freedom degree (78) which means that differences between means are statistically insignificant. Accordingly, this statistical analysis asserts the extent of homogeneity between both samples of the study.

Results of 30 m Dash Test:

Table (6): results of pre and post-tests for both samples of the study in the 30 m dash test

	Statistical Methods						Significance	
	Sample	Pre-test		Post-test		T Counted Value		T Tabulated value
		Mean	S.D	Mean	S.D			
Empirical Group	40	4.85	0.39	4.73	0.37	1.37	2	Insignificant
Control Group	40	5.05	0.44	5.08	0.41	0.30		Insignificant

From previous we notice that the training program was not greatly affected. The researcher found that this was due to speed which requires greater time to develop. In addition, the sample of the study is among a quite advanced age category which makes it difficult to develop this characteristic. This was asserted by DORNHOFF, habil & Martin as they think that speed of athletes is counted for safety of nervous system, muscular tissues, genetic factors and training condition (DORNHOFF, habil & Martin, P. 82).

Results of Retrospective Running Test:

Table (7): results of pre and post-tests for both samples of the study in the retrospective running test

	Statistical Methods						Significance	
	Sample	Pre-test		Post-test		T Counted Value		T Tabulated value
		Mean	S.D	Mean	S.D			
Empirical Group	40	10.97	0.63	10.82	0.61	1.09	2	Insignificant
Control Group	40	11.04	0.68	11.17	0.69	0.86		Insignificant

From previous we notice that the applied program had a positive effect on members of the empirical sample, but differences are statistically insignificant. The researcher found that agility decreases the more athletes stayed away from training during the period of preparation and training of civil protection workers. This result agrees with Wagih Mahgoub's who believes that it is an experience and practice as it undermines and weakens if training is halted for a certain period (Mahgoub, 1989, p. 87).

Results of Pull-Ups Test:

Table (8): results of pre and post-tests for both samples of the study in the Pull-ups test

	Statistical Methods							
	Sample	Pre-test		Post-test		T Counted Value	T Tabulated value	Significance
		Mean	S.D	Mean	S.D			
Empirical Group	40	12.52	3.72	15.87	4.10	3.77	2	Significant
Control Group	40	12.9	2.72	13	3.03	0.15		Insignificant

From results of table (8), we notice that this study agrees with the study of (Tarson Noureldin, 2005). In addition, the effectiveness of the proposed training program gave a positive effect in developing strength endurance characteristic as it contains strength training with or without weights presented in a systematic way following modern methods of sport training science.

Results of Wide Jumping From Stationary Test:

Table (9): results of pre and post-tests for both samples of the study in the wide jumping from stationary test

	Statistical Methods							
	Sample	Pre-test		Post-test		T Counted Value	T Tabulated value	Significance
		Mean	S.D	Mean	S.D			
Empirical Group	40	267.37	8.11	282.35	9.52	7.74	2	Significant
Control Group	40	276.07	11.55	278.42	9.27	0.99		Insignificant

From results of table (9), the researcher tackles the effectiveness of the proposed training program gave a positive effect in developing explosive strength characteristic as it contains training designed in a systematic way following modern methods of sport training science and most of them contained exercises of strengthening, weight lifting and pushing in addition to jumping and leaping exercises.

Results of Jumping with bending both legs Test:

Table (10): results of pre and post-tests for both samples of the study in the jumping with both legs test

	Statistical Methods							
	Sample	Pre-test		Post-test		T Counted Value	T Tabulated value	Significance
		Mean	S.D	Mean	S.D			
Empirical Group	40	61.6	7.02	73	5.56	7.94	2	Significant
Control Group	40	63.77	6.23	63.45	6.62	0.22		Insignificant

From results of table (10), the researcher tackles the effectiveness of the proposed training program gave a positive effect in developing strength endurance characteristic for its importance in job requirements and the researcher found that this was due to content of training depending on running and muscular work for a relatively long time with multiple repetitions. This agrees with Akram Zaki Khetabiah as he refers to movements that are characterized with highly intense work activity and for a long time contributing to develop endurance (Khetabiah, 1996, p. 257).

Discussing Results:

After conducting physical tests, the researcher made treatment of results using the T test through T counted values and comparing them with the T tabulated value (1.67) at significance level 0.05 and freedom degree 39 as shown in the following table:

Table (11): the T counted value in physical post-tests for both samples of the study

Tests	Control Group		Empirical Group		T Counted	T Tabulated value	Significance
	Mean	S.D	Mean	S.D			

					Value		
Running 30 m	5.08	0.41	4.73	0.37	3.94	2	Significant
Retrospective Running	11.17	0.69	10.82	0.61	2.38		Significant
The Pull-up	13	3.03	15.87	4.10	3.51		Significant
Wide jump from stationary	278.4	9.27	282.3	9.52	2.27		Significant
Jump by bending both legs 30 sec	63.45	6.62	73	5.56	6.89		Significant

Based on data collected by the researcher with the aid of the used data collection methods in this study, discussion and analysis of results of statistical analysis of the sample with limitations of the study, the researcher found that the sample of the study achieved statistically significant differences in means for pre and post-tests as these differences were in favor of post-tests in all physical tests which is asserted by statistical tables 6, 7, 8, 9 & 10. The researcher attributes development in the sample of the study to the positive effect of the proposed training program in developing some physical characteristics due to job requirements related to civil protection workers in terms of endurance, speed, strength, agility and flexibility if modern scientific methods in sport training are followed in addition to legalizing training loads.

4. CONCLUSIONS:

- The proposed training program has a positive effect on the physical characteristics under study.
- There are statistically significant differences between results of pre and post-tests in favor of posttests at freedom degree 78 and significance level 0.05 for physical tests: (pull-ups, wide jump from stationary and jumping with both legs in 60 sec).
- There are statistically significant differences between results of pre and post-tests at freedom degree 78 and significance level 0.05 for physical tests: (30 m dash and retrospective running).

Recommendations:

Based on data collected in the study, conclusions and limitations of the study, the researcher recommends the following:

- 1- It is necessary for trainers to depend on modern training methods and select exercises that are consistent with the nature of civil protection workers' work and job requirements.
- 2- There should be an aid from trainers from abroad outside the field of civil protection with efficiency and knowledge that raise the level of fitness of civil protection workers.
- 3- Motivating researchers and specialists to conduct further studies in this sensitive field as it is important for society.

5. REFERENCES:

- 1- 05 Feb, 1983, Ministerial Decree No. 108/83, Algeria, Ministry of Interior.
- 2- Abdelkhalek Sidu Abu Abdou (2003): "Concepts Related to Sport Training Science", Cairo, Dar Al Fikr Al Arabi.
- 3- Karam Zaki Khattabiah (1996): "Encyclopedia of Volleyball", Cairo, Dar Al Fikr Al Arabi Press.
- 4- Kamal Abdelhamid, Mohamed Sobhy Hassanin (2001): "Fitness and its Basic Components", Cairo, Dar Al Fikr Al Arabi.
- 5- Marwan Abdelmegid Ibrahim (2002): "Methods & Means of Scientific Research in Physical and Sport Education", 1st Edition, Amman, Scientific National House Press.
- 6- Wagih Mahgoub (1989): "Kinetics", Iraq, Dar Al Kotob Press – Al Mawsel University.
- 7- Habih, M., & DORNHOFF. (1993). L'éducation physique et sportives. Alger: office des publications universitaires