

Applying exercises to improve and enhance physical strength according to standards of healthy police soldiers for students of the University of Fire

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Abstract-The use of exercises to improve and enhance physical strength for students has been used relatively diversely, abundantly by teachers of universities and intermediate schools. However, the use may be infrequent, so the effectiveness of the exercises is not high, and their advantages have not fully developed. Therefore, the selection of thematic exercises has a very important meaning in improving the physical strength for students of the University of Fire (UOF) in particular and for the other universities and intermediate schools in general, such exercises will help students to improve their physical fitness as well as help them to comprehensively develop important qualities and capabilities such as the strength, endurance, flexibility, agility and coordination in various exercise activities in order to achieve the standard of physical training for healthy police soldiers

Index Terms- Physical training endurance, flexibility, healthy police soldiers

I. INTRODUCTION

University of Fire belongs to the system of People's Police Schools and is an unique institution for training and retraining staff, doing scientific research on fire prevention and fighting and rescue in Vietnam. The UOF requires students to have a certain health to be able to serve the study of general subjects, and students also have to participate in studying subjects requiring physical strength such as National Defence Education, Martial Arts for People's Policemen, Physical Education, and specialized subjects including: Personal fire fighting techniques, high-rise fire fighting tactics, fire fighting tactics for industrial zones, forest fire fighting tactics, rescuing victims stuck in the fire and stuck in high-rise buildings.... Therefore, doing exercises and sports regularly is the responsibility and obligation of each police officer and soldier in general and of each student of the UOF in particular, for the purpose of physical training and physical development for each student from the time of their study at university, which will help them quickly integrate with the practical work and fulfill all assigned tasks successfully after graduation from university.

On April 11, 2013 The Ministry of Public Security issued Circular No. 24/2013 / TT-BCA on regulations and standards for physical training in the people's police force This Circular is applied to units in the People's Police [1]; officers, non-commissioned officers and soldiers serving for a definite time; students of institutes and schools; People's Public Security officers and employees (hereinafter referred to as People's Police officers and soldiers) aged between 18 and 50 for men and 18 to 45 for women (calculated according to birth month) have rights and obligations to perform physical training according to the standards. Annually, the UOF has a plan to inspect healthy public security officers for the officials, teachers and trainees courses to assess the physical training process from which to be considered for emulation during the academic year.

Through the teaching practice of physical education subject with limited duration of course, the small sports field in respect of area, the exercises for training physical fitness according to the standard of healthy public security officers still lack of both quantity and attractiveness, the rate of not reaching the standard of physical training for healthy police soldiers also accounts for a relatively high proportion in both the staff and teachers in general and the students in particular [2].

The quality of physical training of students of the UOF first and foremost depends on the views, policy and guidelines of the Public Security Sector in general and the views of the leaders of the UOF in particular about physical training work. In addition, the

guarantee factors such as cadre work, facilities, sports and physical education organization and management,... are important factors that greatly affect the quality of students' physical training in the University of Fire. Besides, the effectiveness of physical training activity also depends on the effectiveness of studying the regular physical training hours and extracurricular training. In other words, it is decided by the quality of physical education in the university, where the process of teaching sports and physical education plays a key role.

The assessment of the sport and exercise activities and physical training of the UOF in the recent years shows that: Since the beginning of the academic year, the UOF has issued a resolution on special subject in the aspect of leadership to build the movement of doing exercises and sports and physical training with an aim of improving physical fitness for cadres, teachers and students in the university. Thereby, the specific implementation of the resolution of the UOF's Party Committee, coordinating with the specific characteristics and conditions of their unit is carried out to organize exercises and sports activities and physical training movements with high results and attract many officials, teachers and students to participate. Since then, cadres, teachers, students can be clearly aware of the importance of physical training which is necessary and needs to be thoroughly grasped by each individual in their units.

However, in reality, there are still many outstanding issues that do not meet the renovation requirements such as the awareness of some management staff, leaders, teachers and students is still insufficient, and sometimes it has deviant expression, disregarding the position, role, effects of physical education and physical training subject. The movement is sometimes up and down, and has not formed a extensive dynamic and regular movement which has a practical effect in the study and daily life.

Therefore, in order for the sports and physical training in the university to be better and more deeply developed, besides the interest of the Party organizations and the authorities at all levels, there should be close and regular coordination across departments, faculties, departments, unions and especially it is necessary to raise awareness about sport activities and physical training for students.

II. REAL SITUATION

The University of Fire is an education institution under the Ministry of Public Security, so 100% of students are staying in the dormitories within the university campus [3]. Besides, the UOF also has a team of teachers working as form teachers (the form teachers belong to the student management department) are always available with students to supervise and manage all activities of students after the regular main lessons in the class. It can be said that the team of form teachers is the team that sticks close on students most (eating, playing, staying with students) in sports exercise and extracurricular activities. In the UOF, each student of each class must register the contents of the exercises sports, physical training and extracurricular activities with the form teacher, and the form teacher must be responsible for all aspects of the class he or she is in charge of management and reporting to the upper level leaders. Yearly, there is a review of emulation votes among excellent form teachers; excellent classes and there are accompanied authentic rewards, so it is a great motivation for the form teachers to be closer to the class and the class collective also strives its best to achieve the highest honours [4-6].

The subject of Physical Education has 10 units including 1 theoretical unit, 09 practicing units which are taught within 135 period lessons in the first and the second semesters of the first academic year. Of the units, the athletics subjects are taught in the first semester, the subjects of football, swimming are taught in the second semester.

- In terms of knowledge: the subject of PE provides learners with understanding of: Views of the Party and the State on sports and exercises, the meaning and the effect of sports, exercise and physical training on the body, how to handle injuries in practice, keep hygiene in practice, and grasp the principles of performing techniques of short distance running, hurdle, medium distance running, long jump, high jumps, single beams, swimming and the sports of soccer and volleyball. Knowing the methods of organizing sports competition...

- In term of skills: After completing the course, the learners will be able to perform athletics contents such as short distance running, hurdle running, medium distance running, long jumps, high jumps, single beams, swimming and the sports of soccer, volleyball Meet the standard of training healthy police soldiers of the Ministry of Public Security and the standards of physical fitness of the Ministry of Education and Training.

Table 1. Content of techniques required to study physical education program

<i>Unit</i>	<i>Content</i>	<i>Total</i>	<i>Theory</i>	<i>Practice</i>	<i>Checking</i>
Part I		75	11	56	8
Unit 1	General theory of sports and physical fitness		5		
Unit 2	Techniques of short distance running	0	1	8	1
Unit 3	Techniques of hurdle running	0	1	8	1
Unit 4	Technique of single bar	0	1	8	1
Unit 5	Techniques of long jump	0	1	8	1
Unit 6	Technique of high jump	0	1	8	1
Unit 7	Techniques of medium distance running	5	1	14	1
Mid-term test					5
Part II		0	4	49	7
Unit 8	Football	5	2	12	1
Unit 9	Volleyball				
Unit 10	Swimming techniques	0	2	37	1
Final examination of module 2					5
Sum		135	15	105	15

On April 11, 2013, the Ministry of Public Security issued Circular No. 24/2013 / TT-BCA on regulations and standards for physical training in the People's Police force, including the four following criteria:

- 100-metre distance running (15 sec)
- 1500-metre distance running (6 min 30 sec)
- Long jump (or jump away) (2,45m)
- Hand shrinking/ bending with single bar (16 times)

The test subject is 72 first-year students (D34 course) who are studying the first part of the subject of Physical Education at the University of Fire Fighting and Prevention. Test results are presented on Fig 1.

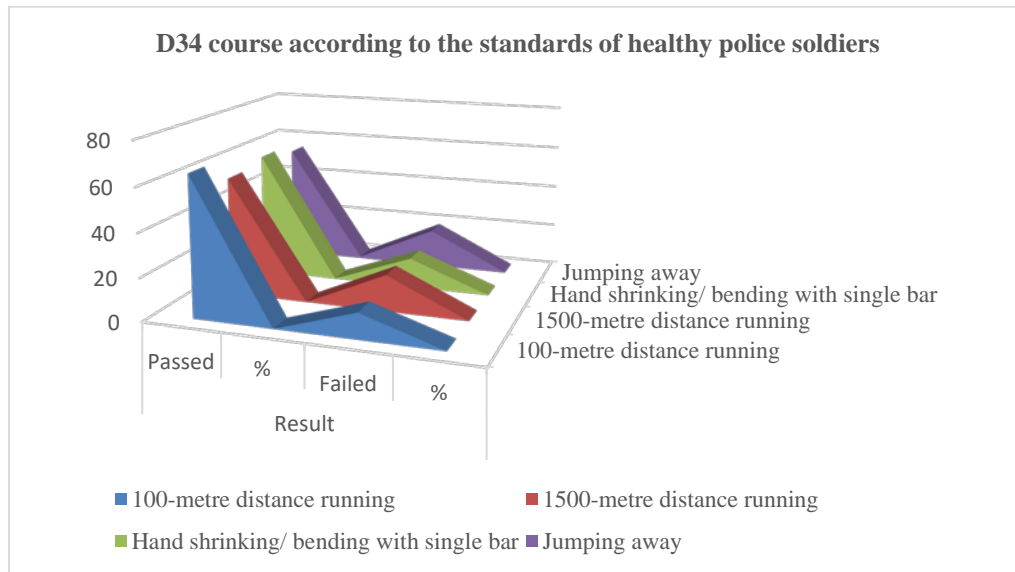


Figure 1. Results of physical fitness test of boy students of D34 course according to the standards of healthy police soldiers.

The test results show: For the first year boy students, among 72 students there are only 50 satisfactory students in 100-metre distance running, 45 satisfactory students in 1500-metre distance running; 30 satisfactory students in hand shrinking/ bending with single bar; and 33 satisfactory students in jumping away. Thus, it can be seen that in the first year, the number of boy students who did not meet the checking criteria for healthy police soldiers is relatively high. In all 4 contents, there have been a number of unsatisfactory students accounted for from 30.6% to 58.4%.

III. SOLUTIONS TO IMPROVE PHYSICAL FITNESS

Physical education for students of the UOF is relatively good, but there are still shortcomings that may be due to objective reasons such as new enrolment in the subjects and limited sports fields, and unclear awareness of physical training, so the results of physical training in accordance with the standards of healthy police soldiers are not high, and there are still a quite large number of unsatisfactory students when taking the fitness test according to the required standards. Therefore, the research and selection of exercises to improve physical fitness for students following the standards of training healthy police soldiers are extremely necessary.

Exercise 1: 30-metre distance running with high starting (s)



Purpose: to develop agility

How to do it: Running on the running track with starting and finishing lines

Volume: Running 3-5 times x 30m with maximum intensity, break time of 1-2 minutes.

Requirements: quick reaction, fast frequency, using the following pedal force.

Exercise 2: 100-metre distance running with high starting(s)



Purpose: to develop agility

How to do it: Running on the running track with starting and finishing lines

Volume: 2-3 times. Maximum intensity, 2-3 minute break time

Requirements: Focussing attention with maximum effort

Exercise 3: Continuous jumping up and down on a 30-40cm high platform

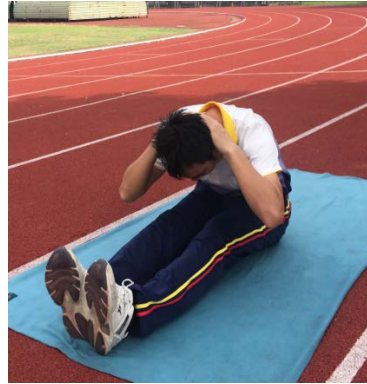


Purpose: to develop the strength of the legs

How to do: choose a wooden platform, a bench or cement platform on the sport training ground with a height of about 30-40cm. Stand in a horizontal line and jump up to and down from the platform continuously.

Requirements: Jump up to the platform, after standing straight up, jump up to the platform and then drop down from the platform to the original position, such action is continuously performed. Perform 4-5 times x 20 '' with break time of 30 ''.

Exercise 4: *Lie supine and bend abdominal muscles*



Purpose: to develop a group of abdominal muscles

How to do it: In preparing posture, 2 people sit linking one's legs with another person's legs , bending knees to create a 60 degree angle, put 2 hands on the nape, leaning backward in a lying position, quickly bend body and then sit up coming back to the original posture.

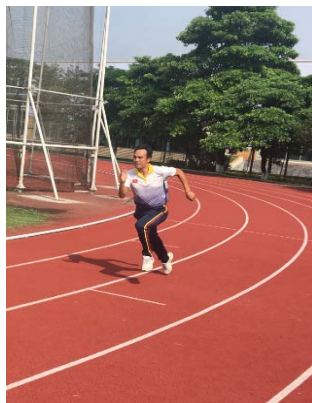
Requirement: Perform maximum bending and stretching amplitude, head is not allowed to touch the ground. Perform in 3 groups, from 20-30 times/ group, 1-minute break time.

Exercise 5: *Lie on stomach, lean hands and push body upwards.*

Purpose: to develop the moving strengths of the muscle groups when bending and stretching arms.

Requirement: For each time of performance, you have to bend and stretch your arms with maximum the amplitude. Perform 3 teams, from 10-15 times / team, rest between 2 minutes.

Exercise 6: *800-metre distance running*



Purpose: to develop common endurance

How to do it: Gather on the starting line, when command is given out, run around the yard or run on the running track with a distance of 800 metres.

Requirements: Run at a stable speed, take deep breath. The running intensity is about 80-85% of strength power.

Exercise 7: Lying on stomach and bending the back muscles



Purpose: to develop the strength of the back muscles group

How to do it: In the preparing posture, performing person has to lie on his stomach stretching body straight, while the helper sits on the heel of the performing person. The performing person put his hands on the nape and then lift up the upper body from the ground with all power and then lower it.

Requirements: Perform movements up and down with maximum amplitude from 20-30 times/ group. Perform in 3 groups, 1- minute break time.

Exercise 8: Jumping rope



Purpose: Develop the endurance of speed and ability to coordinate movements.

How to do it: stand in a horizontal line 2 metre apart, in the preparing posture, two hand hold the rope and then jump at the same time turn round the wrist swinging the rope from the back up to the top and down to the front, and two legs jump over and take the rope through the beneath of the foot.

Requirements: Perform smooth coordination between hands and feet Perform in 3 groups, each team performs for 2 minutes, 1- minute break time.

Exercise 9: Jumping up like a toad

Purpose: to develop the strength of leg muscles group.

How to do: In the preparing posture, squat on 2 legs, put 2 hands behind the nape when a signal is given out, immediately push up body ahead (distance from 25-30m).

Requirements: perform continuously, bounce legs straight ahead with maximum power. Perform in 2 groups, 1-minute break time.

Exercise 10: Jumping up and away from the spot (m)



Purpose: to develop strength of the leg muscles group .

How to do it: Person who is tested stand naturally on 2 legs, 2 tips of feet are set close to the edge of the jump line, 2 hands are raised high, lower the centre of gravity, fold the elbow joint, bend the body, the upper body rushes slightly ahead, head bends slightly , 2 hands are lowered to the back, use the whole power to coordinate the entire body to press strongly the tips of the toes into the ground, and then jump out with 2 arms swinging forward when jumping away and when landing two feet perform simultaneously. The measured results are calculated by the length from the feet stamping line to the last touch point of the heel, the length of the jump is measured in centimetre, taken every single centimetre.

Requirements: perform with the best effort, properly and subject to the rules, 3-5 times x 3 groups. Break time is around 60-90 ''.

After 3 months of experiment, by applying research and selection exercises, the training of the students has brought much higher efficiency than before the specific experiment. Test results are presented on Fig 2.

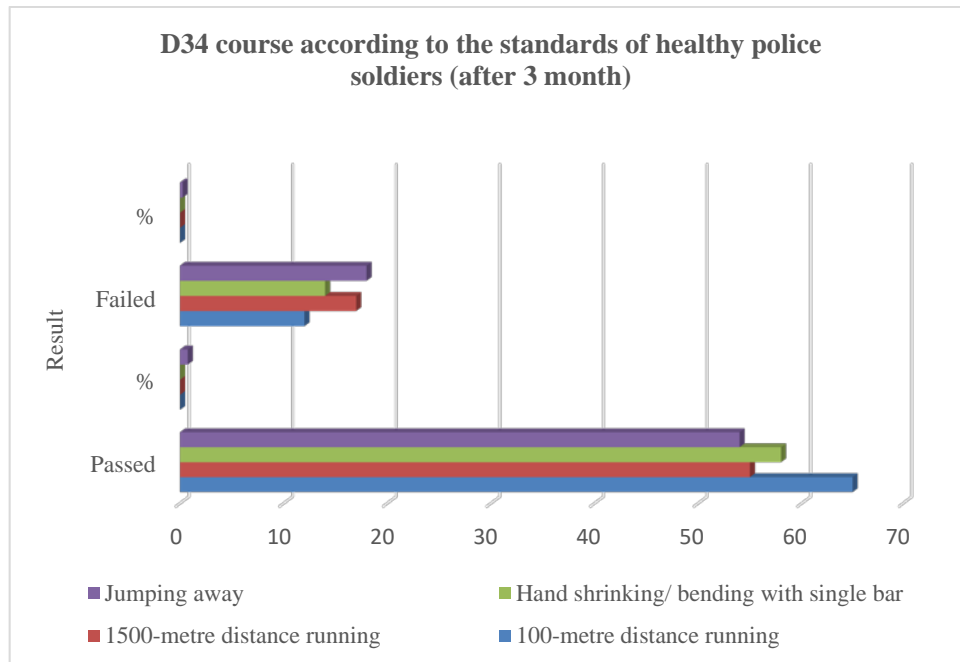


Figure 2. Results of physical fitness test of boy students of D34 course according to the standards of healthy police soldiers after 3 month.

For the first year boy students after 3 month, among 72 students there are 65 satisfactory students in 100-metre distance running (90,3%), 55 satisfactory students in 1500-metre distance running (76,4%); 58 satisfactory students in hand shrinking/bending with single bar (80,5%); and 54 satisfactory students in jumping away (75%). Thus, it can be seen that after 3 month, the number of boy students who did not meet the checking criteria for healthy police soldiers is relatively low. In all 4 contents, there have been a number of unsatisfactory students accounted for from 9,7 % to 25%.

IV. CONCLUSION

The research has selected 10 exercises to improve physical fitness for students in the University of Fire in accordance with the standards of physical training in the Public Security force for students. The selected exercises are closely practical and suitable for scope of students' sports and extracurricular activities. The exercises have shown the effectiveness clearly demonstrated at the physical fitness level of the students participating in the experiment in all four criteria of physical fitness.

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