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Marksman training influence on psychological state of cadets from higher educational establishments of Federal Penitentiary Service in Russia

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Abstract: The level of firing proficiency in Federal Penitentiary Service (FPS) higher educational establishments cadets in Russia is closely connected with the process of their marksmanship (the basis of shooting) and psychological training. Conjugate realization of these processes during teaching shooting provides favorable psychological states creation in cadets. They have positive influence on the effectiveness of shooting. **Materials.** The influence of marksmanship training on psychological state of FPS higher educational establishments cadets in Russia. **Research methods.** Information sources analysis and summarizing, testing, questionnaire survey, control tests, experiment, methods of mathematical statistics. **Results.** The article presents the results of cadets' health state, activity and mood study at Federal public educational establishment of higher education "Perm Institute of Federal Penitentiary Service in Russia", while they were fulfilling the exercises of target practice. We defined the problems of cadets' psychological readiness, presented the recommendations concerning these problems solution during marksmanship training practical lessons. **Conclusion.** The received results prove that the effectiveness of target practice is influenced not only by psychological state of cadets, but also by the process of marksmanship training. Conjugate technical and psychological training during practical lessons provide cadets' health state and mood working capacity improvement, activity increase, real interest formation in personal result improvement in practical shooting. **Keywords:** cadets, higher educational establishment of FPS, marksmanship training, psychological training.

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INTRODUCTION

Marksmanship training is one of the main disciplines, which are studied at higher educational establishments of FPS in Russia. The aim of this discipline is technical and psychological readiness formation for shooting iron use [3, 5].

Very often the reason, which defines the quality of shooting, becomes psychological state of cadets [1, 4]. This state can be estimated as positive one and is demonstrated as cheerfulness, flow of spirits, activity is accompanied by inner mobilization, self-confidence, concentration. In this case the results of target practice are characterized by high speed of shooting, accuracy and high values [2].

In case if psychological state of cadets is negative: lack of confidence, apprehension, low

energy, indifference, increased anxiety, they make a lot of mistakes, sometimes bad mistakes, which have negative influence on the quality of shooting [1, 3]. As the example of such a mistake we can mention "pulling off" trigger, when a cadet, trying to get rid of negative emotions, caused by non-confident work with the gun, tries to make a shot as quickly as possible [2].

Taking into account the fact that psychological state of cadets can change even within the short time period of the exercises fulfillment at a firing line [4], the questions of conjugate technical and psychological training realization during practical "Marksmanship training" lessons become urgent.

MATERIALS AND METHODS

The second course cadets of the Perm Institute

of Federal Penitentiary Service (80 people) took part in the research. Two groups were formed: control group and experimental group, each included 40 people. The groups formation was realized according to the results of the preliminary questionnaire survey and pilot control tests, in the way that cadets had relatively the same level of psychological, physical and marksmanship training. Cadets' psychological state during practical marksmanship training lessons was estimated by means of a questionnaire survey, using "Health state, activity, mood" (HAM) questionnaire. The questionnaire survey was used in order to study the influence of marksmanship training, realized on the basis of physical loads, on psychological state of cadets.

The received results were handled with the help of StatPlus program. In order to estimate the validity of differences both inside the samplings and between them, we used non-parametric WRST (Wilcoxon rank sum test), as the results of the questionnaire survey present non-parametric data.

RESULTS AND DISCUSSION

During practical lessons as the techniques,

which form positive psychological state in the experimental group cadets, the following tasks were used:

- shooting on the background of physical load (running, knee-bends, dip-ups);
- ideomotor formulas and autogenic mindsets saying;
- pronouncing the technique of shooting fulfillment or its separate elements (ready position, grasp, aiming, breathing, handling the sear);
- respiratory gymnastics exercises;
- shooting in complicated conditions (noise, sound, luminous effects and others).

In order to solve these objectives the following tasks were used in the control group:

- shooting according to the task of a teacher (gain 25 points from 5 – 4 – 3 shots);
- mutual analysis of the shooting technique with the stress on technically correct elements fulfillment;
- the algorithm of actions saying before the exercise fulfillment;
- control shooting.

Picture 1 presents the dynamics of diagnostics results according to "Health state" index of "HAM" methodology.

Picture 1 – Dynamics of questionnaire survey results among the respondents according to "HAM" methodology in the control and the experimental groups ("Health state" index)

Before the experiment there were no valid differences between the results of the experimental and control groups respondents. Approximately each third student in both groups characterized his health state as satisfactory one. In our opinion, such situation is typical enough at the beginning of practical marksmanship training lessons, when in some cases we can see this state: emotional worry, increased respiration and heart rate, hands and fingers tremor, movements dis-coordination, visual perception mistakes and etc.

During the experiment there were no statistically valid changes in the level of cadets' health level in the control group. The observed individual changes of cadets' psychological state

during the results interpretation were at the same interval.

In the experimental group changes were statistically valid. Only five (12,5%) cadets from the experimental group at the end of the experiment characterized their health state as satisfactory one (in the control group-11 cadets –27,5%). In our opinion, such results changes were conditioned by the techniques of psychological training, which we used during practical shooting fulfillment.

Picture 2 presents the diagnostics of the results dynamics in cadets according to "Activity" index.

КГ – CG ЭГ – EG НЭ – Initial stage (IS) КЭ – final stage (FS) Низкий – low Средний – average Высокий – high

Picture 2 – Dynamics of questionnaire survey results in the respondents according to "HAM" methodology in the control and the experimental groups ("Activity" index)

We were surprised by initially low indices of cadets' activity self-assessment. At the same time, there were no statistically valid differences in the results of the control and the experimental groups. However, during the experiment we deliberately increased the volume of motor activity in the experimental group cadets (fulfilled the exercises on the background of physical load), which had positive influence on the results of the second diagnostics. At the end of the experiment the experimental group cadets improved their results. Most of them (34 people – 85%) estimated the level of their activity

during the lessons as "high" and "average". In the control group the number of such cadets was only 23 people- 57,5%. At the same time, after target practice the experimental group cadets had higher results. They prove our hypothesis concerning positive influence of physical loads on the effectiveness in shooting.

Changes in the control group were statistically not valid ($p > 0,05$).

Picture 3 presents the results of the respondents diagnostics according to "Mood" index.

Picture 3 – Dynamics of questionnaire survey results in the control and experimental groups respondents according to “HAM” methodology (“Mood” index)

In scientific-methodical sources there is thesis concerning considerable influence of mood on the effectiveness of shooting [1, 3]. The authors mention that negative mood leads to considerable disorders in the technique of shooting: too long time of aiming; violation of trigger handling technique (delay or spurt); tempo-rhythmic characteristics of shooting violation [2, 3]. Good mood appears with the increase of results together with self-confidence. It causes further shooting results improvement [4, 5].

During our lessons for cadets' mood correction we used the technique of ideomotor and autogenic training. It had a positive influence on the research results. 24 cadets from the experimental group estimated their mood as “good” one (60%), 9 cadets estimated it as “perfect” one (22,5%). In the control group the results turned out to be less expressive - 19 (47,5%) and 7 (17,5%) cadets.

CONCLUSION

The received results prove that the target practice effectiveness is influenced not only by psychological state of cadets, but also by the process of marksmanship training. Conjugate technical and psychological training during practical lessons provide cadets' health state and mood working capacity improvement, activity increase, real interest formation in personal result improvement in practical shooting.

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