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Influence of Dry Fire Practice on Rifle Shooting Performance of School Going Students

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Abstract: Purpose-The purpose of the study is to find out the Influence of dry fire practice on rifle shooting performance of school-going students. This study is helpful for various rifle and pistol shooting events.
Methodology: For the present study the sample consisted of thirty (30) school-going boys students who were randomly selected from Dr.Nandurkar Vidyalaya, Yavatmal, Maharashtra. Whose ages ranged between 14 to 16 years. The rifle shooting performance was evaluated through .22 long rifle shooting target board by researchers on the scoring system. For the analysis of data statistical mean, S.D. and 'T'-test was used. The level of significance was set at 0.05 levels.
Result -The outcome shows that Dry fire practice improving the rifle shotting performance. After six week dry fire practice of experimental group mean score 12 ± 3.84 and control group mean score 7.47± 2.45
Conclusion- With the help of the study, it is concluded that there are significant differences was found in dry fire practice on rifle shooting performance of the experimental and control groups.
Keyword: Dry fire, Rifle shooting, Performance

I. INTRODUCTION

Shooting is the most popular sport in the world. Nineteen century that shooting becomes a sport. Shooting for men was included in the first modern Olympic in Athens in 1896. Accurate shooting is built upon and is the product of three fundamental components: the rifle, the ammunition, and the shooter.

The three are all equally important and interrelated. Failure to pay respect to any one of the fundamentals will result in poor shooting. Dry fire practice increases the rifle shooting performance. First, the rifle must be set up correctly for its shooter, in physical terms.

It must be correctly configured with its ancillary equipment such as scope and bipod, and it must also be compatible with the use of good hand-loaded or match ammunition. Second, the ammunition. The ammunition must be sized in terms of power, recoil, and caliber to the shooter's abilities, needs, and purposes, and it must be correctly manufactured and optimized for the rifle it is to be fired from. Third, but not last or least important, is the shooter.

The shooter must maintain good physical fitness and operate the rifle correctly, properly maintain their rifle, select the correct ammunition for the shot, and provide a stable shooting platform for the rifle and ammunition. If any one of the fundamental aspects is overlooked, it will be reflected in the shooter's range score or trophy wall and will prevent the shooter from further honing their skills. Care must be taken and efforts must be made to ensure that all three of these fundamentals are addressed equally and appropriately. The rifle and its correct maintenance, use, and employment form the first fundamental component of accurate shooting, and while the rifle may seem to have pride of place as a symbol of a shooter's skill, it is, in fact, no more or less important than the condition of the shooter and ammunition, with regards to accurate shooting.

A rifle's scope is the shooter's link to their target. The scope allows the shooter to spot for and acquire targets, assess the range to the target (and, in some cases, set the scope for the range and wind or hold-off and -over as necessary), engage targets, and then follow through after the shot to assess the fall of the shot and begin spotting for the next target. This is a complex set of operations; all being carried out by the one piece of fairly innocuous and generally overlooked equipment. The choice of shooting position and the location of the shot go hand in hand. The first principle of both is that they must provide a solid and stable platform for the shooter and the rifle.

II. OJECTIVE

To find out the influence of dry fire practice on rifle shooting performance of school going students.

III. METHODS AND DESIGNS

Participants, criterion measures, and test administration, Experimental Design of the study, training program, and data collection are described below.

1) *Participants:* For this study, 30 school-going boys students were selected randomly from Dr. Nandurkavidyalaya, Yavatmal, Maharashtra. The age range of the subject 14 to 16 years. All the subjects belong to different socio economic backgrounds.
2) *Criterion Measures:* For the present study, the researcher wanted to measure the performance of rifle shooting of school-going students. .22 Long rifle shooting test was used and the score is recorded by the rifle shooting target board.
3) *Adinistration of the Test:* After that, the researcher will administer the .22 long rifle shooting test to measure the shooting performance of the school-going students before and after the dry fire practice training program of six weeks. Variables will be tested and measured through the standard procedure with the help of an expert and under the direct supervision of the experimental researcher.

A. *22 long rifle shooting test*

1) *Purpose:* To measure rifle shooting performance-
2) *Equipment:* The researchers consider the best categorical or standard equipment for this study. (.22 long Rifle, Bullets, shooting target board, Indoor shooting range, and marking tape)
3) *Procedure:* The researcher, first of all, provides the student's security, and all subjects are dry fire shooting practiced by the researcher's guidance. In this test circular shooting target board was placed at height of 52 inches from the ground. The target board dimension is 15.44 cm. Subjects standing at a distance of 10 meters from the target made 40 trails for shooting in the center of the target.
4) *Scoring:* For each shooting in the inner circle 10 points were awarded. For each shooting in the next circle 9 points were awarded. For each shooting in the next circle 8 points were awarded. In this way for each shooting in the outer circle, points were awarded. If the subject missed the target board completely no point was awarded. Each subject was given 40 trials. After the End of 40 trials, individual scores of each trial were added to get the final result of the Test.

B. *Experimental Design of the study:*

The experimental study was made on thirty (30) male subjects. All the subjects were divided into equal groups of fifteen (15) subjects in each. One was the experimental group, the second one was the control group. The investigator was prepared a suitable training program for the experimental group the prescribed dry fire practice. The duration of the training program was 5 days a week for a period of 6(six) weeks with 45 minutes each day, the period of six weeks under the direct supervision of the experimenter. The control group did not practice any training during the period of six weeks.

Table 1. Training schedule

Exercise	Time	1st to 2nd week	3rd to 4th week	5th to 6th week
Dry fire practice	7:00 am to 7:45 am	4 sets	5 sets	6 sets

Note: 1) One set=15 repetition.
2) Two minutes rest between two sets.

C. *Collection of Data*

For this study data were collected through the administration of .22 long rifle shooting test before and after the dry fire practice.

IV. RESULT AND DISCUSSION

To find out the effect of dry fire practice on rifle shooting performance of secondary school students were collected through the administration of .22 long rifle shooting test before and after the six weeks training program. The collected data were analyzed by employing the 'T'-test statistical technique.

The following notations were used for all the subsequent tables for elaborations. E.G.- Experimental Group, C.G- Control Group, N- Number of the subjects in a group, M- Mean of the group, MD- Mean difference between pre and post scores, SD- Standard Deviation, 't'- t ratio.

Table 2. The Mean and S.D Sdifferences between the pre-test and post-test scores of the experimental group on the rifle shooting performance test.

Group	Test	N	Mean ±S.D.	M.D	't' value
E.G	PreTest	15	7.8 ± 2.36	4.2	3.41*
	Post Test	15	12 ± 3.84		

*Significant at .05 level of confidence.
Table value .05 (2, 28) df = 2.04

Table no-2 reveals that the mean of pre-test score and post-test score Experimental group are 7.8 and 12, and their calculated 'T'-value is 3.62* which is greater than that of tabulated value 2.04 (28) df atthe 0.05 level of confidence. It is indicates that there is significant difference between the pre-test score and post-test score of the experimental group. Therefore, it is indicated that there is significant difference found before and after the dry fire practice program to the experimental group. It was indicated that before training the rifle shooting performance of the group was below level.

Fig.1Bar diagram of Mean and S.D. difference between the pre-test and post-test scores of Experimental group on rifle shooting performance Test

Table 3. The Mean and S.D. difference between the post-test scores of the experimental and control groups on the rifle shooting performance test.

Post Test Group					
Group	Test	N	Mean ±S.D.	M.D	't' value
E.G	post Test	15	12 ± 3.84	4.53	3.87*
C.G	Post Test	15	7.47± 2.45		

*Significant at .05 level of confidence.
Table value .05 (28) df = 2.04

Above Table, no-3 shows that the post-test mean score of experimental and control group effect on rifle shooting performance of secondary school students are 12 and 7.47 respectively and their calculated 't' value is 3.87 which is greater than that of tabulated value 2.04 at 0.05 (28) level of confidence. It was indicates that there was no significance difference between the post-test mean of experimental and control groups. It was also indicated that dry fire practice effect on shooting performance of the experimental group. Hence, the null hypothesis is rejected.

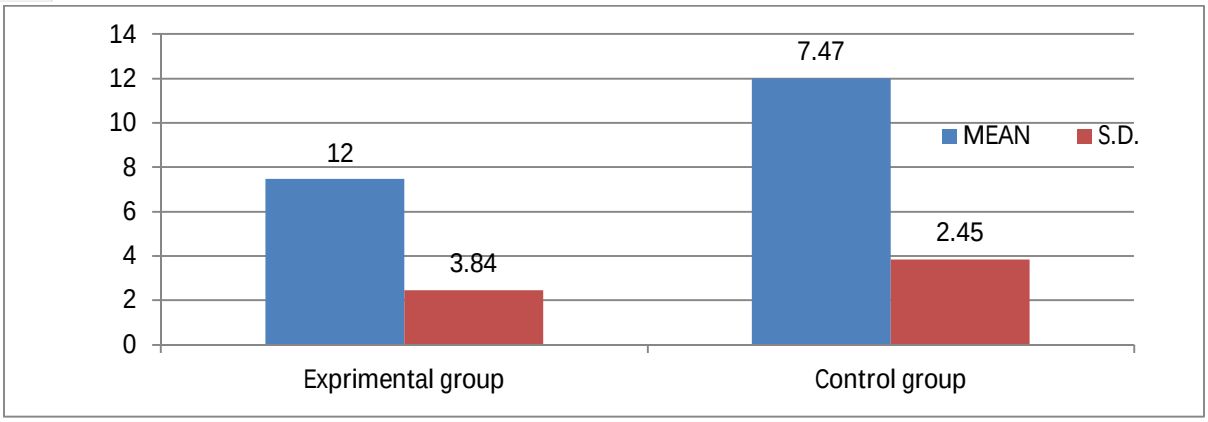


Fig.2 Bar diagram of Mean and S.D. difference between the post-test score of Experimental group and control group on rifle shooting performance Test

V. CONCLUSIONS

Within the limitations of the present study, the following conclusions were drawn:

1) The study shows hat there was significance difference in dry fire practice on rifle shooting performance of the experimental and control groups.

2) It was also concluded that there were significance differences in post-test results on the experimental and control groups.

3) It was also found that there were significance differences in pre-test and post-test results of rifle shooting performance of the experimental group.

4) Finally it was concluded that six-week dry fire practice program significantly effects on rifle shooting performance of secondary school students.

REFERENCES

[1] Olçucu, B., Cenikli, A., Kaldırımcı, M., and Bostancı,O. (2011). The effects of movement training with and without ball on physical fitness of tennis playing children. J of Sports and Performance Researches 2(1), 32-40.

[2] Era P, Konttinen N, Mehto P, Saarela P, Lyytinen H, 1996. Postural stability and skilled performance-a study on top-level and naive rifle shooters. Journal of Biomechanics. 29(3), 301-306.

[3] Florendo, F., & Bercades, D. (2007). The effectiveness of shadow practice in learning the standard forehand drive. In 10th Anniversary ITTF Sports Science Congress Proceedings Book. University of Zagreb, Faculty of Kinesiology,18-20.

[4] K.Niilo.,M.Kaisu.,v.Jakka.,and M.Toni.(2017). The Effects of Augmented Auditory Feedback on Psychomotor Skill Learning in Precision Shooting. Journal of Athletic Performance and Nutrition, Volume: 4(2) ,11-28.

[5] Misra,C.R.Major.(2007).A hand book of NCC, Kanti Prakashan, 64-68.

[6] Mononen, K., Konttinen, N., Viitasalo, J., & Era, P. (2007). Relationships between postural balance, rifle stability and shooting accuracy among novice rifle shooters. Scandinavian journal of medicine & science in sports, 17(2), 180-185.

[7] Ranes, B., Lawson, B., King, M., & Dailey, J. (2014). Effects of rifle handling, target acquisition, and trigger control on simulated shooting performance. Army aeromedical research lab for tucker al warfighter health div.

[8] Rose, D. J., & Christina, R. W. (1990). Attention demands of precision pistol-shooting as a function of skill level. Research Quarterly for Exercise and Sport, 61(1), 111-113.

[9] Tang, W. T., Zhang, W. Y., Huang, C. C., Young, M. S., & Hwang, I. S. (2008). Postural tremor and control of the upper limb in air pistol shooters. Journal of sports sciences, 26(14), 1579-1587.

[10] Tremayne, P., Barry, R., & Burke, S. (1993). From Novices to Experts in Pistol Shooting: What the Researchers. Sports Coaching, 16, 37-41.

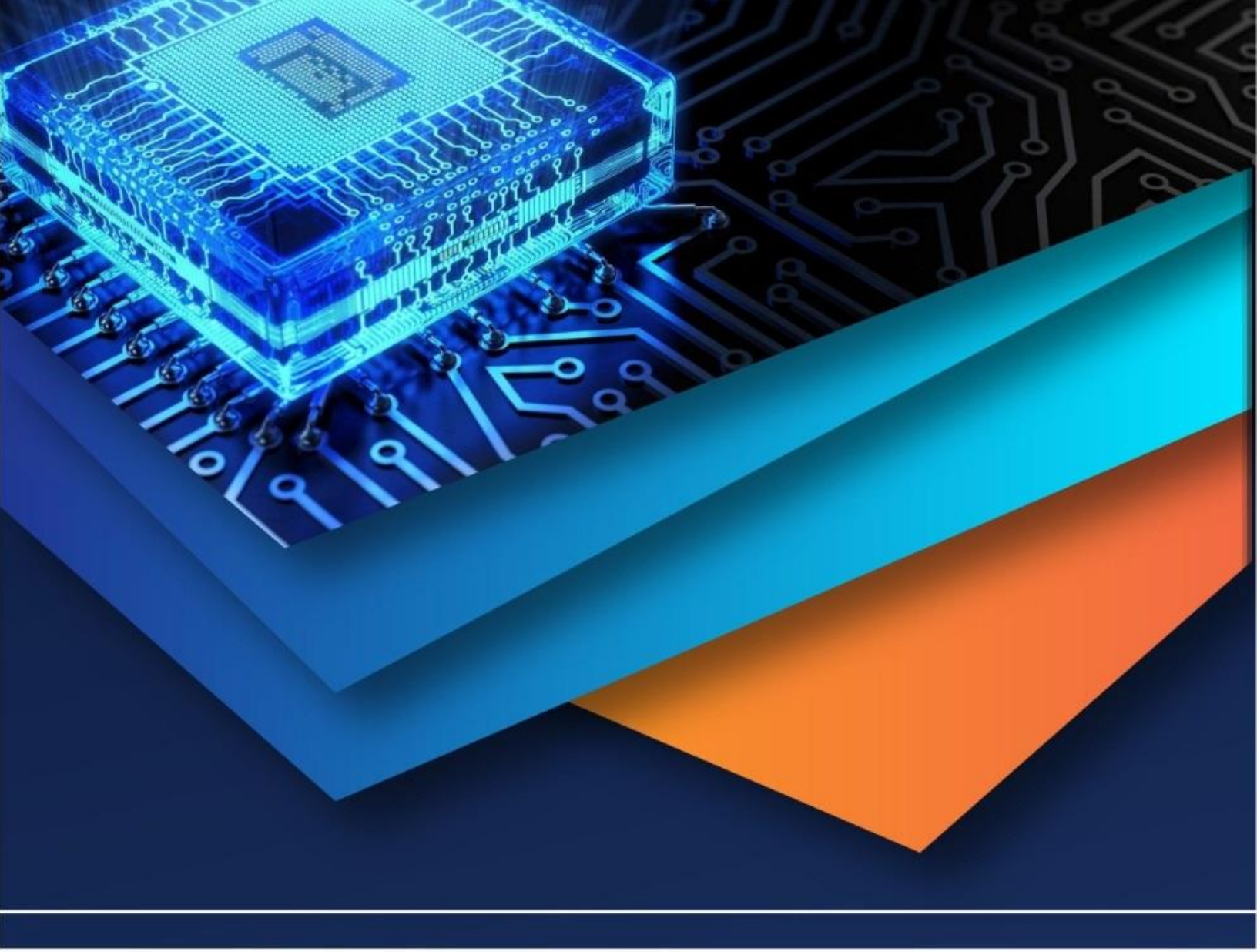
[11] Vuckovic, G., & Dopsaj, M. (2007). Predicting efficiency of situational pistol shooting on the basis of motor abilities of the students of Academy of criminalistic and police studies. Serbian journal of sports sciences, 1(1), 23-36.

[12] Winter D.A, Patla A.E, Prince F, Ishac M, Gielo-Perczak K, 1998. Stiffness control of balance in quiet standing. Neurophysiology. 80(12), 11-21.

[13] Wolfe,A.,Peak,K.,Burch,J.,and Burch,G.(2018).The effects of innovative shotgun shooting methods on collegite shotgun shooters. International Journal of Physical education, fitness and sports,7(3),57-65.

[14] Zatsiorsky V, Aktov A, 1990. Biomechanics of highly precise movements: the aiming process in air rifle shooting. Journal of Biomechanics. 23, 35-41.

[15] Y.F.Mehmt.,A.Latif.(2017).The Effect of Shadow Badminton Trainings on Some the Motoric Features of Badminton Players. Journal of athletic performance and nutrition,4(2),11-28.



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