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REVIEW ARTICLE

COMPARATIVE EFFECTS OF IMAGERY TECHNIQUES AND PHYSICAL PRACTICE METHOD ON AIR RIFLE SHOOTING PERFORMANCE AMONG BEGINNERS

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Comparative Effects of Imagery Techniques and Physical Practice Method on Air Rifle Shooting Performance among Beginners

Dr. Babulal Dayma*

Dy. Director, Physical Education, Director, Yoga Center, Jai Narain Vyas University, Jodhpur

Abstract – The purpose of the study was to find out the effects of different types of training method namely physical practice and imagery practice on air rifle shooting performance. To achieve the purpose of the study twenty male students were randomly selected as subjects for this study from various schools and colleges of Gwalior, who had attended the summer coaching camp 2013 and willingly opted air rifle shooting sport. This camp was organized by Institute of Professional Studies, Gwalior. The criterion measures adopted for this study was to measure the rifle shooting ability of a subject in 10 meter Air Rifle Shooting. The training was conducted for four weeks duration. To find out the significance differences between pre and post-test adjusted means of the experimental groups, ANCOVA was applied at 0.05 levels. The findings revealed that there was no significant improvement found in air rifle shooting performance due to physical practice method and imagery practice method of four weeks of training program.

Keywords – ANCOVA, Imagery Practice, Air Rifle Shooting Performance, Physical Practice.

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INTRODUCTION

Mental imagery is the process by which, an athlete visualizes himself or herself performing an upcoming task. There are many names for mental imagery including visualization, mental rehearsal, mental practice, and cognitive enactment. Each name for mental imagery has its unique style in the way it is used. However, they are all used for the same purpose: to improve the performance of the individual. The use of mental rehearsal and mental imagery by an athlete prior to a competition results in improved performance in the competition. Many experiments in track and field, volleyball, and golf have been done to test this hypothesis. Imagery is a tool that has been used for many years. With all the new technologies, developments of equipment and performance enhancing drugs, the use of mental practice still weighs out to be one of the most beneficial forms of preparation for a sport. The focus and attention paid to the detailed motions and routines of a skill in imagery keeps it high on the basic practice schedule of coaches all across the world. The professional athletes are always seen on the court or field with their eyes shut or pointing to their head pointing out to the crowd and their opponents that the real game and preparation is in the mind not in performing the action. Success is the desired goal of anyone who wants to be an athlete. Mental imagery alongside practice is the best combination to ensure positive outcomes in the life ahead of the athlete.

Mental imagery gives a chance to deal with a problem or event in the head before one is confronted with it in the real world. Mental practice is used by many superior athletes to practice physical skills, such as jumps, shots, lifts, tricks, plays, routines, strategies and so on. Virtually any physical skill or combination of physical skill can be practiced in imagery, once an athlete becomes adept at using imagery. However, the effective use of imagery requires practice. It is important to note that the major difference between mental imagery working and not working relates to the athlete's ability to vividly imagine that he executes the desired skill or response. Many athletes find it helpful to visualize that they perform perfectly prior to their competitive performance. For some athletes it serves as a last

Minute reminder of the pattern they wish to produce, for others it takes their mind off any thoughts of worry or self-doubt, gives a last feeling of confidence and free their body to perform. Engaging in mental practice after a successful experience can also be valuable. Successful athletes use imagery and visualization to their advantage. Not all athletes are able to verbally describe exactly how they use imagery. but some can. Jack Nicklaus, one of the greatest go lifers of all time, not only used imagery but was able to describe in detail how he used it. The following quotation provides an eloquent description of how one great athlete used imagery prior to every shot: I never hit a shot, not even in practice, without

having a very sharp, in-focus picture of it in my head. It's like a color movie. First. I "see" the ball where I want it to finish. Then the scene quickly changes and I "see' the ball going there. . . . Then there is sort of a fade-out, and the next scene shows me making the kind of swing that will turn the images into reality (Nicklaus. 1974. p. 79). Other great athletes who have commented on the use of imagery in preparing for competition include Michael Jordan in basketball, Chris Evert in tennis, Greg Louganis in diving, Mike Piazza in baseball, and Nancy Kerrigan in figure skating. Clearly, imagery has been useful for great athletes. It is also instructive to hear how figure skaters utilized imagery in a controlled scientific investigation. Garza and Feltz (1998) randomly assigned elite figure skaters into a control condition and two different experimental imagery conditions. One imagery condition used a paper drawing exercise in which skaters traced with a pencil their imagined moves on ice. A second condition did a walk-through on the ice and imagined their skating moves along the way. The control condition simply engaged in stretching. When the post-intervention skating performance of the three ups was compared, no differences were observed between the imagery groups but significant differences, favoring the imagery groups were observed between the control group and the imagery groups.

METHODOLOGY

The purpose of the study was to compare the effect of imagery technique and physical practice on air rifle shooting performance. To achieve the purpose of the study twenty male students were randomly selected as subjects for this study from various schools and colleges of Gwalior, who had attended the summer coaching camp 2013 and willingly opted air rifle shooting sport. This camp was organised by Institute of Professional Studies, Gwalior. The twenty students randomly selected were further randomly divided into two groups on the basis of lottery system. These two groups were randomly assigned to the two experimental group namely imagery group and physical practice group by using a lottery system. Each group consist of ten subjects. Their age ranged from thirteen to twenty two years. Prior to the administration of tests, a meeting of all the subjects selected for this study was called in which the purpose of the study, and requirement of testing procedures were explained to them in detail to make them understand about what they are actually required to do during the experimental period of the study. All the subjects agreed to cooperate in the testing procedures explained to them. The experimental group A was randomly assigned to PETTLEP treatment, the experimental group B was randomly assigned to physical practice treatment. Each subject fired 10 shots with an air rifle at 10 meters distance. Scores range from one point for hitting the out ring zone and 10 points for a hit in the 10 ring ('bull'). If a shot hits the line between two zones, the higher score is awarded. To find out the significance of mean differences between pre and posttest and adjusted mean, analysis of covariance technique was employed. ANCOVA was used to analyze the significance of differences among the training effects brought out by different training methods. For testing the hypothesis, the level of significance was set at 0.05 levels.

There was thirty minutes program for a day for three alternate days in a week for four weeks was assigned for the imagery training. Each thirty minutes of session included three components: initial relaxation, concentration and mental reading for imagery mind/body and imagery of selected skills. The subjects were tested before the commencement of the experiment and after the experiment period of four weeks.

RESULTS AND DISCUSSION:

The mean gain differences between pre and post-performance in rifle shooting due to physical training and imagery training of four weeks of duration is presented in table 1.

Table No. 1

Mean Differences in Pre and Post Test Performance in Air Rifle Shooting Ability Due to Imagery and Physical Practice Method

Variables	Mean (Pre)	Mean (Post)	Mean Difference	S.D. (Pre)	S.D. (Post)
Imagery Practice Method	6.70	14.20	7.50	3.97	4.80
Physical Practice Method	7.40	17.00	9.60	4.67	5.86

It evident from the above table that there was greater improvement i.e. 9.60 score value due to physical practice training method in comparison to imagery practice method i.e. 7.50 in the skill performance of subjects when trained for a period of four weeks.

It is evident from the above table that there has been

gain or improvement in rifle shooting performance in physical practice group after four weeks of treatment as the mean difference value was found to be 9.60. Which is just little more than the imagery method i.e. 7.50. The graphical representation of their groups values is given in figure 1.

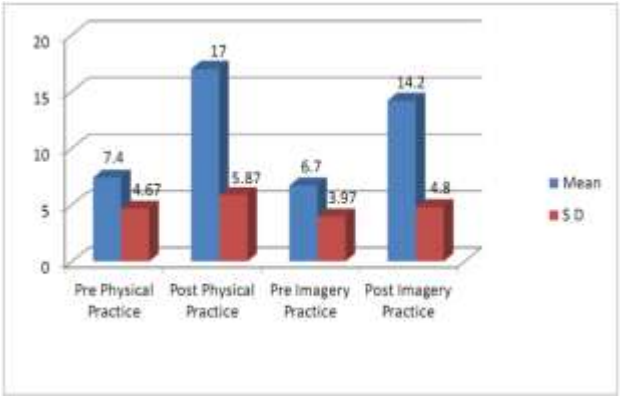

Figure 1: Graphical Representation of Pre and Post mean gain in Scores of Two Groups on Rifle Shooting Performance after Four Weeks of Experimental Period.

In order to find out the effects of different treatment methods on rifle shooting performance, analysis of covariance was applied. The analysis of data is presented in Table 2.

Table No. – 2

Analysis of Covariance of Adjusted Post Test Means of Experimental Groups in Rifle Shooting Performance

	Sum of Squares	df	Mean Square	F-Value
Contrast	31.669	1	31.669	1.156
Error	465.657	17	27.392	

* Significant at .05 level. $F_{.01}(1, 17) = 4.45$

Table 2 clearly revealed that there was no significant differences in performance between physical training and imagery training method of four weeks of duration among beginners as the calculated “F” value i.e. 1.86 was found to be lower than tabulated “F” value i.e. 4.45 at 0.05 level of significance.

CONCLUSION:

Within the limitations of the present study, the following conclusions may be drawn:

1. It is concluded that there is no significant improvement in the rifle shooting performance of beginner shooters due to four weeks of training.

2. It is concluded that four weeks of regular physical practice method is more effective method in improving rifle shooting performance among beginners in comparison to imagery practice method.

3. It is further concluded that performance in rifle shooting is not affected by growth and developmental factor of subjects of school and college level during a period of four weeks.

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Corresponding Author

Dr. Babulal Dayma*

Dy. Director, Physical Education, Director, Yoga Center, Jai Narain Vyas University, Jodhpur

dr.bldayma1965@gmail.com