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A COMPARATIVE ANALYSIS OF PULSE RATE AND STORK BALANCE IN SHOOTING PLAYERS OF MANIPUR

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Abstract

This study aimed to investigate the Pulse Rate and Stork Balance of Shooting Players. The subjects of the study are the Shooters who represent the state of Manipur in the Male Air Pistol and Male Air Rifle events. A total of 30 male Shooters, consisting of 15 each from Pistol and Rifle, were investigated for their Pulse Rate and Stork Balance. For this study, the researcher selected National shooting players, ages ranging from 18 to 25 years. The data was collected from male Shooter of Khuman Lampak Shooting Range, Manipur. The result reveals a significant difference in Pulse Rate between Air Pistol and Air Rifle as the t-value was 2.29 and the p-value was 0.03. Since p- the value was 0.03 <0.05. It is concluded that the Pulse Rate of an Air Pistol was higher than that of an Air Rifle. Again, there was no significant difference in Stork Balance between Air Pistol and Air Rifle as the t-value was 0.47 and the p-value was 0.63. Since the p-value is 0.63>0.05, it was concluded that the Stork Balance of Air Rifle was higher than the Air Pistol.

Keywords: Comparative, Shooters, Confidence, Pulse Rate, Stork Balance.

INTRODUCTION:

In shooting, the requirement for good physical and psychological condition, as well as technical perfection, is highly demanded (Antal & Shanaker, 1985). To maintain a good performance and ranking in the respective events, shooters must undergo various kinds of training phases, starting from basic to specific training (Whitehead, 1975). The level of their physical fitness is very essential as well. The traditional definition of physical fitness in Training Methodology sub-divides the term into two major parts, that is, general fitness(related to the physical component of an activity irrespective of the sport or game) and specific fitness (about the requirements of a particular sport or its discipline) (Bompa, 1994). Later on, specialists in training methodology and scientifically oriented coaches felt that some link was missing in converting generalized motor abilities into specialized ones.

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Besides, quite often, they noticed that there was no positive influence of general physical fitness and conditioning on specific fitness and conditioning and further on competition performance. This brought to life the term and a factor presently known as Auxiliary fitness and, consequently, Auxiliary conditioning, which has to provide an effective conversion of general fitness into a specific one (Verhoshansky, 1986). The main feature of auxiliary fitness and conditioning is that it combines the characteristics of both general and particular fitness in terms of muscular groups involved in the exercises, efforts applied, movement kinematics, and physiological regimes of functioning (Verhoshansky, 1986). The main feature of auxiliary fitness and conditioning is that it combines the characteristics of both general and specific fitness in terms of muscular groups involved in the exercises, efforts applied, movement kinematics, and physiological regimes of functioning. Therefore, when considering competitive shooting as any other athletic effort, the shooters must be trained and conditioned physically (Hawley & Burke, 1998). While shooting is a skill sport, fully trained athletes require strength, strength endurance, an efficient cardiovascular system, and flexible joints (Bury, 1995). Thus, if shooters are adequately conditioned and maintain good muscle tone, they will maximize their physical capability to hold the rifle or pistol motionless (Killing, 1992). Surveys indicated that low back pain is the main area of injury, having three times the number of problems as the knee and neck among rifle and pistol shooters (Killing, 1992). Therefore, young shooters need to obtain a proper level of physical fitness to minimize the probability of injury (Stanitsky, 1989). Generally, in the training in most sports, after the competition phase, athletes move into the transition phase (Bompa, 1994). This is where they are involved in other types of activity and do not undergo intensive training. Thus, detraining occurs rapidly when an athlete does not participate in exercise programs (Houmard, 1991).

OBJECTIVE OF THE STUDY:

To determine the significant difference between the Air Pistol and Air Rifle Shooters in Pulse Rate and Stork Balance.

HYPOTHESIS:

It is hypothesized that there was a significant difference between the Air Pistol and Air Rifle Shooters in Pulse rate and Stork Balance.

MATERIALS AND METHODS:

The researcher selected 30 male shooters, 15 from Air Pistol and Air Rifle, ages 18 to 25 years. The data was collected from male shooters at the Khuman Lampak Shooting Range, Manipur.

Administration of the tools:

A. PULSE RATE (COUNTING THE PULSE AT RESTING CONDITION)

The test was to find out the pulse rate of the subjects at rest.
Equipment- A stopwatch, pencil, and score sheet was used to assess the pulse rate at rest.
Procedure- The resting heart rate of the subjects was recorded in the sitting position immediately after wake-up. Before taking the resting heart rate, the

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subject was asked to relax in a sitting position for 30 minutes. To record the heart rate, the fingertips were placed on the radial artery at the subject's wrist so that the palpation was clear, and the number of palpations was counted for one minute. The pulse rate was taken at the wrist in such a manner that the fingertips clearly feel palpitation. The measurement of palpitation will count for one minute.
Scoring - The pulse rate of each subject was recorded for one minute.

B. BALANCE (STORK BALANCE STAND TEST)
Equipment required: Flat, Non-Slip Surface, Stopwatch, Paper and Pencil.
Procedure: Remove the shoes and place the hands on the hips, then position the non-supporting foot against the inside knee of the supporting leg. The subject was given one minute to practice the balance. The subject raises the heel to balance the ball of the foot. The stopwatch was started as the heel was raised from the floor. The stopwatch was stopped if any of the following occurred:

- The hand(s) come off the hips
- The supporting foot swivels or moves (hops) in any direction
- The non-supporting foot loses contact with the knee.
- The heel of the supporting foot touches the floor.

Scoring: The total time in seconds was recorded. The score was the best of three attempts.

STATISTICAL TECHNIQUE:

The necessary data are computed and analyzed using descriptive statistics like Mean, SD, and t-test through Statistical Package for Social Sciences (SPSS) version 20.0. The level of significance was set at 0.05.

FINDINGS OF THE STUDY:

The data was collected on 30 Male players, 15 each from Air Pistol and Air Rifle, and finding the Pulse Rate and Stork Balance between the players.

The mean difference between Air Pistol and Air Rifle shooters concerning Pulse Rate and the Stork Balance Stand Test is shown in Table 1.

Variable	Event	N	Mean	Std. Deviation	Std. Error Mean	t-value	p-value
Pulse Rate	Pistol	15	75.26	5.94	1.53	2.29	.03
	Rifle		71.06	3.84	.99		
Balance	Pistol	15	.88	.37	.09	.47	.63
	Rifle		.82	.38	.10		

**Significance at 0.05 level*

Table 1 shows a significant difference in pulse rate and no significance in stork balance between the Air pistol and Air rifle shooter, as the calculated values of t= 2.29 and .47.

Fig 1:

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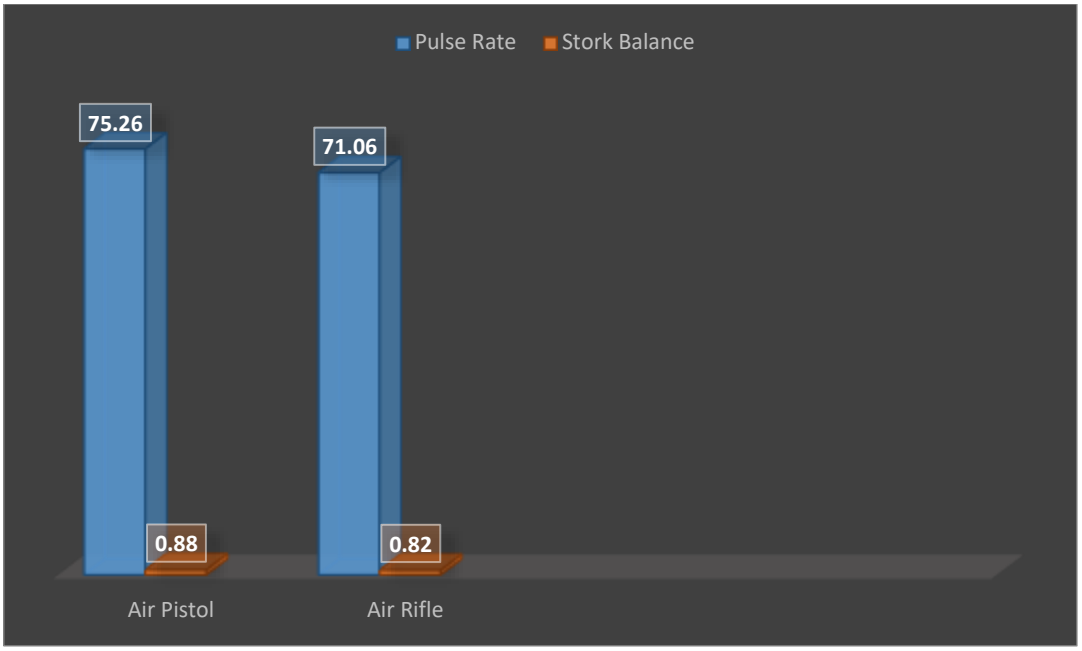
The graphical presentation of Air Pistol and Air Rifle Shooting players concerning Pulse Rate and Stork Balance



DISCUSSION OF THE FINDING:

From the above table, the mean Pulse Rate of Air Pistol and Air Rifle Shooting events score was 75.26 and 71.06, respectively. The Standard Deviation score of the Pulse Rate of Air Pistol and Air Rifle Shooting events was 5.94 and 3.84, respectively. The Standard Deviation mean score of the Pulse rate of Air Pistol and Air Rifle Shooting events was 1.53 and 0.99, respectively. The t-value was 2.29, and the p-value was 0.03. Since p- the value is 0.03 <0.05. There was a significant difference, and the null hypothesis was rejected.

From the above table, the mean score of the Stork Balance Stand test of Air Pistol and Air Rifle Shooting events was 0.88 and 0.82, respectively. The Standard Deviation score for the Stork Balance of Air Pistol and Air Rifle Shooting events was 0.37 and 0.38, respectively. The Standard error means score of the Stork Balance Stand Test of Air Pistol and Air Rifle Shooting events was 0.09 and 0.10, respectively. The t-value was 0.47, and the p-value was 0.63. Since p-value is 0.63>0.05. There was no significant difference, and the null hypothesis was accepted.

CONCLUSION:

Within the limitation of the study, the following conclusions were made. The study results show that the Pulse Rate of 15 Air Pistol shooter was higher than the 15 Air rifle shooters. The study results show that there were no significant difference in stork balance test scores between 15 Air Pistol shooters and 15 Air Rifle shooters. This analysis provides valuable insights into how different types of events (Pistol vs. Rifle) impact physiological (Pulse Rate) and motor skills (Balance) in participants. Further research could explore potential factors (e.g., psychological or physical exertion) that influence pulse rate, or examine other variables that might affect balance.

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