DEVIATION TIME D1, D3 AND ITS RELATIONSHIP WITH THE HORIZONTAL DISTANCE OF THE MAXIMUM DEVIATION AND THE ACHIEVEMENT LEVEL IN SNATCH LIFT FOR THE WEIGHTS (73-77) KG

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ABSTRACT

This study aimed at identifying the relationship between deviation time d1, d3 and its relationship with the horizontal distance of the maximum deviation and the achievement level in snatch lift for the weights (73-77) kg:

The study used the descriptive approach by the survey studies due to its compatibility to the study nature and objectives. The study sample was chosen intentionally from weight lifters who achieved advanced levels at the level of Iraq and the international level. Videotaping was performed via (Sony) video camera with a frequency of 100 photos/second; it was placed on a tripod stand at a distance of (5m) and a height of (1.40m) in a vertical way on the motion range. These distances show the whole snatchlift. The video clips were then stored on a computer and analyzed using "dart fish edition mpt34m 5.5 pro" that is installed on the computer; this software is designed to analyze sports movements, where a movement-timing exists within the software. The researcher use (SPSS) for data analysis.

The study concluded that the following: 1- the horizontal velocity of the weight in the deviations d1 and d3 is affected by the time of stage (d1), 2- the time of deviations (d1 and d2) is important in achieving the achievement since these deviations are considered as the most important stages in the snatch lift, especially the deviation (d1).

I. INTRODUCING THE RESEARCH:

1.1 Introduction and the study importance:

Advancement took place in all the domains of life to the extent that it has become difficult to cope with all the developments taking place in life domains. This advancement resulted from the constant efficiency and efforts exerted by scientists and specialists in the various aspects of life. The domain of physical education also had a good portion of that development and the advancement in skilled performance was due to the continuous efforts and researches which were mainly concerned with the field practiceto accomplish achievements with the most cost-effective way, particularly in relation to the activities that are characterized by rapid skills and high motor responses. Weight lifting is amongst the sports activities that manifested the advancement of the human beings and their superiority over the limited resources and potentials, where achievements reached their best in the various types of snatches. Biomechanics has an important role in that, where it directly contributed to providing the information which, in turn, enhances achievement. Biomechanics addressed the fine details which promote the human power to lift weights that are twice as the weight of humans.

In addition to strength, the activity of weight lifting is characterized by the high speed in performing the lift, particularly snatch lift, which does not need a long time; overcoming the weight requires a high speed in order to finish the lift, in accordance with Newton second law which revealed that speed refers to the great strength in performing the movement.

Based on the pre-mentioned, the study importance lies in understanding the extent to which speed and time contribute to promoting achievement by providing the weight with the suitable speed; this entails the necessity of focusing on these components during the training process and enhance the level to reach the best achievements.
1.2 The study problem:
The sport of weight lifting is considered as one of the most difficult sports that requires constant investigation and research in order to gain important information about mechanism of performance and the extent to which some components contribute to the achievement. These data may not be available obviously which, in turn, requires emphasizing them to help both coach and weight lifter in achieving the best. Based on the researcher's review for the studies that addressed the sport of weight lifting, he noticed that focusing on the time of those two stage could be marginal within a large number of variables that attract more attention as compared to these variables which attracted little attention. Therefore, the researcher conducted this study to address this problem.

1.3 The study objectives:
1. Identifying the relationship between the deviation time (d1), (d3) and achievement in snatch lift for the weights (73-77) kg.
2. Identifying the relationship between the deviation time (d1), (d3) and the horizontal velocity for the deviation time (d1), (d3) in the snatch lift for the weights (73-77) kg.

1.4 The study hypotheses:
1. There is a significant correlation relationship between the deviation time (d1), (d3) and achievement in the snatch lift for the weights (73-77) kg.
2. There is a significant correlation relationship between the deviation time (d1, d3) and the horizontal speed of deviation (d1, d3) in the snatch lift for the weights (73-77) kg.

1.5 The study domains:
1. The human domain: (11) weight lifters for the average weight (73-77) kg.
3. The spatial domain: the Hall of Badra club and Al-Kout club in the governorate of Wasit.

II. THE STUDY METHODOLOGY AND FIELD PROCEDURES:

2.1 The study methodology:
The study used the descriptive approach with its survey image due to its compatibility to the study nature and objectives.

2.2 The study sample:
The study sample was chosen intentionally from weight lifters who achieved advanced levels at the level of Iraq and the international level. The intentional sample is a sample that is chosen in order to generalize its results to other weight lifters (5:165). The sample consisted of (8) athletes with (73) kg, and (3) athletes with (77) kg, who were selected based on the achievements that they achieved in the championships of (Iraq, Africa, Asia), where they achieved advanced levels and gained medals.

2.3 The used methods, tools and devices:
Arabic and foreign references.

A video camera (Sony) with a frequency of 100 photos /second.

Tripod stand

The internet

Computer (core i7).

Specific software for analysis
A drawing scale with (1 meter) long.

2.4 Videotaping the experiment:
Videotaping was performed using a video camera (Sony) with a frequency of 100 photos /second. It was placed on a tripod stand at a distance of (5m) and a height of (1.40m) in a vertical way on the motion range, so that the whole snatch lift is noticed.

2.5 Computer analysis:
The video clips were then stored on a computer and analyzed using "dart fish edition mpt34m 5.5 pro" that is installed on the computer; this software is designed to analyze sports movements, where a movement-timing exists within the software.

![Figure (1) dartfish edition mpt34m 5.5 pro](image)

2.6 The pilot study:
The pilot study was conducted on (8/1/2020) in the hall of Spots' Port club on a sample that is approximate to the main sample in order to verify the distances at which the camera video is placed and identify some of the obstacles that may affect the proceedings of the main experiment.

2.7 The main experiment:
The main study was conducted during (12/1/2020 – 14/1/2020) distributed to more than one governorate (the Hall of Badra club and Al-Kout club) due to the variation of the places at which the study sample individuals exist. Some measurements, such as weight and height were implemented before the final experiment and the attempts were videotaped with regard to the maximum weight that the weight lifter can lift for the research purposes; however, most weight lifters didn't reach the scores that they achieved during the championships in which they participated, where the results were approximate.

III. THE STUDY VARIABLES:

1. The first deviation time (d1): it is the time that the weight requires from the lifting moment up to the end of deviation (d1).

2. The first deviation time (d3): it is the time that the weight requires from the lifting moment up to the highest point of the weight before falling.

3. Achievement: the maximum weight that the athlete can lift in the snatch lift during the experiment.

3.1 The statistical methods:
(SPSS-22) was used and included:

- Means.
- Standard deviations.
- Pearson correlation coefficient.
IV. DISPLAYING AND DISCUSSING THE RESULTS:

After analyzing the attempts and calculating the time in each attempt, the required statistics were performed to achieve the study objectives as shown in table (1) and (2).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>deviation time (d1)</td>
<td>.4412</td>
<td>.01222</td>
<td>11</td>
</tr>
<tr>
<td>deviation time (d3)</td>
<td>.2209</td>
<td>.01221</td>
<td>11</td>
</tr>
<tr>
<td>Horizontal speed for deviation time (d1)</td>
<td>0.19</td>
<td>0.006</td>
<td>11</td>
</tr>
<tr>
<td>Horizontal speed for deviation time (d3)</td>
<td>0.43</td>
<td>0.01</td>
<td>11</td>
</tr>
<tr>
<td>Achievement</td>
<td>111.5455</td>
<td>5.90531</td>
<td>11</td>
</tr>
</tbody>
</table>

The mean for the deviation time (d1) was (0.4412) and a standard deviation of (.01222). The mean for the deviation time (d3) was (0.2209) and a standard deviation of (.01221), while the mean for the achievement change in the snatch lift was (111.5455) and a standard deviation of (5.90531)

In order to test the hypothesis relating to the using Pearson correlation coefficient as shown in table (2).

Table (2)

<table>
<thead>
<tr>
<th>Variable</th>
<th>deviation time (d1)</th>
<th>deviation time (d3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td>0.693 Sig 0.034</td>
<td>0.881 Sig 0.00</td>
</tr>
<tr>
<td>Horizontal speed of deviation d1</td>
<td>0.792 Sig 0.025</td>
<td>0.724 0.039sig</td>
</tr>
<tr>
<td>Horizontal speed of deviation d3</td>
<td>0.431 sig0.125</td>
<td>0.875 0.00sig</td>
</tr>
</tbody>
</table>

The value of correlation coefficient for deviation time (d1) and achievement was (0.693) with a correlation of (0.034), which means that there is a significant correlation relationship.

The researcher suggested that the deviation represents the early lift stage, which is too important due to the great power produced by the weight lifter in order to overcome the weight and providing the weight with the speed that contributes to transferring the weight to a good height, which is considered as a basis for the other stages in terms of reducing the inertia and facilitating the transmission of the weight in the following deviation stages; the starting point of lifting the weight is considered as the most difficult since it considerably contribute to the following stages and the reduced time period of this early stage is attributed to acquiring a high speed due to the increased speed according to Newton second law which states that the acceleration of an object depends directly upon the net force acting upon the object, and inversely upon the mass of the object (1:132).

It is noteworthy that this stage or the deviation follows the stage of lift-starting where the weight is fixed and has a high inertia, which means that starting the movement was less quickly due to the starting point of lifting the weight, overcoming inertia and the slow motion and that refers to a longer period of time. The results revealed that there is a significant correlation relationship between deviation time (d1) and the horizontal speed of the deviation. The researcher suggested that time is one of the most important variables that are viewed as an element of differentiation between speed or lack of speed, especially that time correlates negatively with speed, where speed increases as long as the time is less, knowing that speed in this deviation is less than the other stages since this stage follows the starting rapid lifting of the weight; therefore, the speed is relatively low. Time is an effective component in the speed of the weight and it differs based on the length of the route of the various stages according to the relationship between distance, time and speed (2:75). Usually, the weight lifter aims to increase speed by pulling the weight towards the body in order not to increase the route's depth of the deviation which, in

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turn, increases time and reduces speed. It is noteworthy that being slightly away from the center of the athlete's weight is the best for the route since it doesn't need too much effort when performing the lift (3:181). The results also revealed that the speed in this deviation is related to the deviation time (d3). The researcher suggested that the continuous movement of the weight accompanied with the right adjustment and the appropriate kinetic transmission reduces the time of the other stages, and thus affects the time speed of the other stages, including (d3). The study showed that the right start reduces effort in the following stages, whereas the wrong start results in confusion in the other stages of the lift, and thus the athlete will find it difficult to continue well (4:196).

The results showed that there is a correlation relationship between the horizontal speed of the of the deviation (d3) and the time of deviation, since time is considered as an important factor in decreasing or increasing the speed; knowing that speed is dependent on what has been achieved of strength in the preceding stages as well as implementing Newton laws in the appropriate was during the performance.

V. CONCLUSIONS:
1. The achievement is obviously affected by the time of the two stages (d1) and (d3).
2. The horizontal speed of the weight in the two deviations (d1) and (d3) is affected by the time of stage (d1).
3. Deviations times (d1) and (d3) are important in achieving achievement since they are viewed as the most important stages in the snatch lift, especially the deviation (d1).

VI. RECOMMENDATIONS:
1. Paying attention to the trainings related to achieving a low time, which ensures the speed of the weight movement during the following stages.
2. Setting specific trainings via tools that contribute to improving the time of the two deviations (d1) and (d3) due to their importance.
3. Conducting further studies for other deviations and identifying their correlation with achievement in the snatch lift.

RESOURCES:
4. Emad Adel Ali: Analysis of the relationship between the values of some biomechanical variables in the snatch lift and some neural signal variables and indicators of the work of mechanical sensory receptors among young weightlifters, unpublished PhD, the University of Basra, the Faculty of Physical Education, 2015, p. 196.