

## THE ANALYSIS OF SCORES OF ATHLETICS COMPETITION HELD AT THE DIFFERENT TIMES OF THE DAY

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### Abstract\*

**Objective.** This research aimed at analyzing scores of competitions of athletes which is held in times closer to training hours and in different times during the same season. 72 athletes including 42 men and 30 women from different branches such as (100 m, 200 m, 400 m, 800 m, 1500 m) shot, high jump, long jump were involved in the research.

**Methods.** In this research the results that athletes who have been training at evening times during the preparatory period gained at competitions held at times that coincide with training hours and at morning hours was recorded. Research data were evaluated in SPSS 15.0 program. Due to the fact that the competition scores are very close to each other datas were converted according to unit of measurement and time. (1 min=60sec), (1 sec=100(cs), (1m=100 cm). Wilcoxon signed rank test was used because the data showed non parametric property.

**Results.** Statistically significant lower values were found in 100 m and 200 m races of male and female athletes ( $p < 0,05$ ) and at 400 m races that are held only among male athletes in times closer to training hours.

**Conclusions.** According to these results, it can be concluded that, planning the training hours of explosive athletes according to competition hours may positively effect the competition scores.

**Key words:** Athleticism, score, training hours, adaptation.

### Introduction

Athletics is a complex branch of sport that consists of basic movement forms, walking, running, jumping and throwing. (İşler,1997).

The word Athletics derived from the Greek word "athlos" which means "fighting, contest and struggle. With the history of 5000 years, Athletics is a branch of sport, which requires a multi-dimensional development involving running, jumping and throwing. (T.A.F,2003).

Walking is one of the basics of natural human movements and plays a very important role in a daily life. The basic movements such as, hunting, defence and attack that are being done since the existence of humankind in order to keep his life alive is based on running. Therefore, the birth of athletics can be said to be as old as the history of humanity (Şimşek and Gökdemir 2006).

Athletics has appeared with people's excellent creation characteristics, just like in other sport branches. With this economic, anatomical structure, Athletics has become one of the world's most

popular branches. (Works, 1997)

Elements such as time, distance and height differentiate the athletics from other sports branches. As the limiting factors are exceeded day by day and more heights and progresses are achieved in a short time so, new records are being broken and athletics has become more attractive and more popular sport branch in the world. (Works,1997)

Originating from the most basic natural movements of people, such as running, walking, jumping and throwing, athletics constitute the most important part of the ancient body culture and the Olympics. As the core of modern Olympics, Athletics is being continued to be at the forefront of basic sports. Athletic activities increase the overall efficiency and positively effects on physiological properties such as circulatory and respiratory system (Yapıcı et al. 2003).

The quality of the training is influenced by the achievement of the harmony between the stimulus and the reaction. Because the result of right

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stimulus is known to lead to an increase in performance. (Baechle and Earle 2000, Hoffman 2002).

Like in all sports branches, athletes of athletic branch also train long hours while preparing important competitions. However, nowadays many athletes are engaged in non-sports activities (study, work), so they usually plan their workouts outside of work or study. Athletes are generally trained at the same time like in several sport branches. However, competitions can be held at different times of the day.

In this study, scores of the same athletes in 2 competitions held at different times and period during a season were compared. Scores that are obtained during the competitions held at the training hours of preparatory period and at different times were analyzed.

### Methods

The research is conducted on male and female athletes who study at Kyrgyz- Turkish Manas and other universities and a large part of which participate in the competitions on behalf of the national team. 72 athletes including 42 men and 30 women from different branches such as (100 m,

200 m, 400 m, 800 m, 1500 m) shot put, high jump and long jump were involved in the research.

### Data collection

Due to the study and work schedules of athletes, trainings began at 17:30 in the evening. The scores of athletes obtained in the contest organized in the framework of the program of Athletic Federation of Kyrgyzstan at 10:00 o'clock, the scores that the same athletes achieved during the training hours in the same season were recorded, and the results were compared.

### Data analysis and regulation

Method: Research data was evaluated in SPSS 15.0 program Mean and standard deviation from descriptive statistics were used. Due to the fact that the scores of morning and evening competitions are very close to each other datas were converted according to unit of measurement and time. (1 min=60sec), (1 sec=100(cs), (1mt=100 cm). Wilcoxon signed rank test was used as the data showed non parametric property.

### Results

As shown in Table 1, the demographic features of the athletes included in the survey, which indicate the mean age, height, and body weight, are given

**Table 1. Demographic Characteristics of Athletes according to branches**

| Branch    | Sex    | n | Age Mean±sd | Height Mean±sd | Weight Mean±sd |
|-----------|--------|---|-------------|----------------|----------------|
| 100 m     | Female | 8 | 21,25±1,581 | 176,88±2,800   | 72,25±5,064    |
|           | Female | 8 | 20,00±1,309 | 162,63±5,153   | 56,50±4,071    |
| 200 m     | Male   | 7 | 22,14±1,952 | 178,57±2,070   | 75,14±4,413    |
|           | Female | 5 | 20,20±1,789 | 167,20±5,933   | 54,20±4,324    |
| 400 m     | Male   | 7 | 20,86±,690  | 181,14±3,532   | 71,00±7,047    |
|           | Female | 4 | 20,00±1,155 | 167,75±2,062   | 52,50±1,915    |
| 800 m     | Male   | 5 | 21,00±,000  | 179,40±1,342   | 69,80±9,391    |
|           | Female | 4 | 20,25±1,500 | 167,00±3,464   | 53,00±3,559    |
| 1500 m    | Male   | 5 | 21,20±,447  | 179,60±5,727   | 69,40±9,633    |
|           | Male   | 2 | 24,00±1,414 | 179,50±2,121   | 78,00±2,828    |
| Shot      | Female | 2 | 23,50±,707  | 165,00±2,828   | 59,50±2,121    |
|           | Male   | 4 | 21,25±1,500 | 189,75±5,252   | 73,75±4,787    |
| High jump | Female | 4 | 21,00±1,826 | 165,50±8,347   | 55,75±8,098    |
|           | Male   | 4 | 22,00±,816  | 185,50±4,203   | 69,75±6,850    |
| Long jump | Female | 3 | 21,33±1,155 | 168,67±10,066  | 58,00±2,646    |

**Table 2. 100 m Morning and Evening Competition Scores**

|             | Time    | mean±sd (cs)  | second (sec) | Mean rank | Top rank | Z      | P    |
|-------------|---------|---------------|--------------|-----------|----------|--------|------|
| Male (n=8)  | Morning | 1194,50±32,72 | (11,94)      | 5,75      | 23,00    | -0,704 | 0,48 |
|             | Evening | 1181,25±14,58 | (11,81)      | 3,25      | 13,00    |        |      |
| Female(n=8) | Morning | 1453,75±36,23 | (14,53)      | 4,00      | 24,00    | -1,706 | 0,08 |
|             | Evening | 1427,50±25,49 | (14,27)      | 4,00      | 4,00     |        |      |

( $P < 0,05$ ) 1 second(sec) = 100 centisecond(cs)

As shown in Table 2, averages of evening scores of 100 m male and female athletes were

found to be lower than morning scores. This low difference ( $p > 0,05$ ).  
value did not reflect statistically significant

**Table 3. 200 m Morning and Evening Competition Scores**

|             | Time    | mean±sd<br>(cs) | second<br>(sec) | Mean<br>rank | Top<br>rank | Z      | P    |
|-------------|---------|-----------------|-----------------|--------------|-------------|--------|------|
| Male(n=7)   | Morning | 2341,43±26,726  | <b>(23,41)</b>  | 4,00         | 23,00       | -2,375 | 0,01 |
|             | Evening | 2305,43±9,641   | <b>(23,05)</b>  | ,00          | 13,00       |        |      |
| Female(n=5) | Morning | 3158,00±44,944  | <b>(31,58)</b>  | 3,00         | 24,00       | -2,032 | 0,04 |
|             | Evening | 3054,00±26,077  | <b>(30,54)</b>  | ,00          | 4,00        |        |      |

( $P < 0,05$ ) 1 second(sec) = 100 centisecond(cs)

The scores obtained from the 200m track of male and female athletes in evening competitions were statistically lower than morning competitions ( $p < 0.05$ ). **Table 3**

**Table 4. 400 m Morning and Evening Competition Scores**

|              | Time    | mean±sd<br>(cs) | second<br>(sec)  | Mean<br>rank | Top<br>rank | Z      | P     |
|--------------|---------|-----------------|------------------|--------------|-------------|--------|-------|
| Male (n=7)   | Morning | 5503,00±279,49  | <b>(55,03)</b>   | 4,00         | 28,00       | -2,366 | 0,018 |
|              | Evening | 5336,00±272,34  | <b>(53,36)</b>   | 0,00         | ,00         |        |       |
| Female (n=4) | Morning | 6850,00±377,54  | <b>(1,08,50)</b> | 2,50         | 10,00       | -1,826 | 0,068 |
|              | Evening | 6495,00±480,94  | <b>(1,04,95)</b> | ,00          | ,00         |        |       |

( $P < 0,05$ ) 1 second(sec) = 100 centisecond(cs)

According to the scores of 400m in Table 4 average scores of male athletes in evening competitions appeared significantly lower than the morning competition scores ( $p < 0,05$ ). The scores of

the female athletes in evening competitions were lower than those in the morning. Yet, these values were not statistically significant ( $p > 0.05$ ).

**Table 5. 800 m Morning and Evening Competition Scores**

|             | Time    | mean±sd<br>(cs) | second<br>(sec)  | Mean<br>rank | Top<br>rank | Z      | P     |
|-------------|---------|-----------------|------------------|--------------|-------------|--------|-------|
| Male (n=5)  | Morning | 12176,00±670,25 | <b>(2,01,76)</b> | 3,17         | 9,50        | -0,542 | 0,588 |
|             | Evening | 12086,00±432,93 | <b>(2,00,86)</b> | 2,75         | 5,50        |        |       |
| Female(n=4) | Morning | 17317,50±627,08 | <b>(2,53,17)</b> | 2,50         | 10,00       | -1,826 | 0,068 |
|             | Evening | 17155,50±574,19 | <b>(2,51,50)</b> | ,00          | ,00         |        |       |

( $P < 0,05$ ) second(sec) = 100 centisecond(cs)

As shown in Table 5, evening scores of 800 m male and female athletes reflect lower average

compared to morning scores. In any way, there was no statistically significant difference ( $p > 0,05$ ).

**Table 6. 1500m Morning and Evening Competition Scores**

|            | Time    | mean±sd<br>(cs)  | second<br>(sec)  | Mean<br>rank | Top<br>rank | Z      | P     |
|------------|---------|------------------|------------------|--------------|-------------|--------|-------|
| Male (n=5) | Morning | 25932,00±1277,39 | <b>(4,16,32)</b> | 1,50         | 3,00        | -0,405 | 0,686 |
|            | Evening | 26418,00±927,13  | <b>(4,24,18)</b> | 4,00         | 12,00       |        |       |

( $P < 0,05$ ) second(sec) = 100 centisecond(cs)

1500 m score of only male competitors is given in table 6. When morning and evening race results of the same athletes were examined, although

morning scores were lower than evening scores, this difference was not statistically significant ( $p > 0,05$ ).

**Table 7. Morning and Evening Competition Scores of shot put.**

|             | Time    | mean±sd<br>(cm) | second<br>(m)  | Mean<br>rank | Top<br>rank | Z      | P     |
|-------------|---------|-----------------|----------------|--------------|-------------|--------|-------|
| Male(n=2)   | Morning | 1022,50±194,45  | <b>(10,22)</b> | ,00          | ,00         | -1,342 | 0,180 |
|             | Evening | 1041,50±200,11  | <b>(10,41)</b> | 1,50         | 3,00        |        |       |
| Female(n=2) | Morning | 760,00±113,14   | <b>(7,60)</b>  | ,00          | ,00         | -1,000 | 0,317 |
|             | Evening | 771,50±129,40   | <b>(7,71)</b>  | 1,00         | 1,00        |        |       |

( $P < 0,05$ )  $I_{mt} = 100$  cm

According to table 7 the results of the morning shot of male and female athletes reflected better results than evening competitions. Still, the difference between the scores was not statistically significant ( $p > 0,05$ )

**Table 8. Morning and Evening Competition Scores of high jump**

|             | Time    | Mean±sd<br>(cm) | Mean rank | Top<br>Rank | Z      | P     |
|-------------|---------|-----------------|-----------|-------------|--------|-------|
| Male (n=4)  | Morning | 185,00±10,80    | ,00       | ,00         | -1,732 | 0,083 |
|             | Evening | 188,75±9,46     | 2,00      | 6,00        |        |       |
| Female(n=4) | Morning | 137,50±6,455    | ,00       | ,00         | -1,414 | 0,157 |
|             | Evening | 140,00±9,129    | 1,50      | 3,00        |        |       |

( $P < 0,05$ )  $I_{mt} = 100$  c

Athletes competing in the high jump category achieved better results in the evening competitions compared to the morning competitions. (Table 8) Nevertheless, the scores were not statistically different ( $p > 0,05$ ).

**Table 9. Long jump evening and morning competitions scores.**

|             | Time    | Mean±sd<br>(cm) | second<br>(m) | Mean<br>rank | Top<br>Rank | Z      | P     |
|-------------|---------|-----------------|---------------|--------------|-------------|--------|-------|
| Male(n=4)   | Morning | 611,75±27,18    | <b>(6,12)</b> | ,00          | ,00         | -1,604 | 0,109 |
|             | Evening | 623,75±22,13    | <b>(6,24)</b> | 2,00         | 6,00        |        |       |
| Female(n=3) | Morning | 458,00±88,36    | <b>(4,58)</b> | ,00          | ,00         | -1,342 | 0,180 |
|             | Evening | 468,00±103,12   | <b>(4,68)</b> | 1,50         | 3,00        |        |       |

( $P < 0,05$ )  $I_{mt} = 100$  cm

As seen in Table 9, no matter how evening scores of male and female long jump athletes were better than

morning scores there was no statistically significant difference between these scores ( $p > 0,05$ ).

### Discussions

In many branches of sport, competition preparation training hours of athletics athletes also reflected difference. All of the athletes involved in the survey are trained at 5 pm and after due to their other works in social life. However, it is known that many athletics competitions start in the morning or at noon. For this reason, 72 athletes from eight

(eight) different branches were included in this study, which aimed at examining the performances of the athletes in the contests held during different hours and during the training hours.

When the competition scores of the same athletes participating in the 100 m race during the training hours and at different times were examined (table 2), the morning competition score of male and female

100 m athletes was found to be lower than the evening scores. Nevertheless, the values were not statistically significant ( $p > 0,05$ ). In their research "Isokinetic criteria of sprint competitions period and relationship between sprint speed variables" Kare et al.(2008) determined 100 m running speed as  $11.48 \pm 0.27$  sec. This score is important in terms of showing some similarities with our 11.94 sec. morning and 11.81 sec. evening competition results. The male athletes included in the research were observed to have a better average of 13 split second (one sixtieth of a second) in the competition during the training hours compared to the morning competitions (table 2). In female athletes the average of competition during the training hours found to be better to 26 split sec. Although this difference is not statistically significant, it is obvious that in the athleticism even one split second better score in running scores can determine the champion.

According to the 200 m scores given in Table 2, the scores obtained by male and female athletes in the hours that they had continuously practiced were found to be significantly lower than morning scores ( $p < 0,05$ ). According to these results, it can be seen that in the competitions during the training hours male athletes showed better results to 39 split second and female athletes to 1 sec 4 split second than those morning competitions that they were not accustomed. Bayram et al (2017) found 200 m score of 18 educated athletes to be  $23,82 \pm 0,74$  min. The duration of the run, determined by the researcher, is consistent with our result of the work.

According to the 400 m scores obtained from the competitions, the average scores of male athletes in the competitions conducted in times closer to the training hours were significantly lower than the morning competition scores ( $p < 0,05$ ) The scores obtained by male athletes in the races closer to the training hours reflected 1.67 sec better results than the morning race. In women athletes, despite the fact that, the scores obtained in the evening competitions were found to be lower compared to the morning competition scores, these results were not statistically significant ( $p > 0,05$ ). (Table 3)

The evening scores acquired in the 800 m races reflected lower averages than the morning competition scores. But still, these values were not statistically significant ( $p > 0,05$ ).

It has been observed that male athletes had a 1 split second better degree in competitions hold in evening period which they used to train continuously while female athletes had around 2 split second better degree. (Table 4)

Although 1500 m male athletes had lower morning competition scores than evening scores this difference was not statistically significant ( $p > 0,05$ ). According to these results, it was determined that morning competition scores reflected better

results in average 8 seconds compared to evening competitions. (Table5). Köse (2005), stated that the running time of the athletes of 1,500 m was  $4.57 \pm 0,33$  min. In another research, Bayram et al. (2017) reported running time of 1500 m as  $4.00 \pm 0.29$ . Differences in running times were interpreted as differences in athletes included in the subject group.

As for the shot put, both males and females showed better results in morning competitions (cm) than evening races. However, the difference between the scores was not statistically significant ( $p > 0,05$ ). Female shot putter showed 11 cm better results while male competitors achieved a better score of 19 cm in competitions held during the training hours (Table 6).

The results obtained in the evening competitions of athletes competing in the high jump category were found to be 3.75 cm better in male athletes and 2.50 cm better in female athletes than morning competitions. However, the scores were not statistically different ( $p > 0,05$ ). (Table7) The evening competition scores of male and female long jumpers were found to be better than morning scores. However, there was no statistically significant difference between these scores ( $p > 0,05$ ). (Table 8). It was observed that female long jumpers showed 10 cm better results in competitions hold during the training hours than in different times while the results of male athletes of long jump category reached 1cm better degree.

As a result, it has been observed that athletes will have better scores in explosive required short-term competitions held in times closer to the training period and during medium and long-term competitions held in training hours and different times where the explosive feature is not needed very much, the scores are similar.

#### Suggestions

- Training hours of the athletes should be planned according to the competition times.
- Special works should be done to improve the specific explosive properties of the athletes at different time of the day
- Athletes should be provided with economic support to be able to train at any time of the day and be ensured that the sport will be their only job

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