



## Investigating the sports injuries of Turkish beginner female wrestlers

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### ARTICLE INFO

### ABSTRACT

**Purpose:** Wrestling is one of the successful sports that many organs are not immune from injury. Many factors Wrestlers are included in the occurrence of damages. Athletes' lack of awareness of these factors increases the percentage of injury. The purpose of this research is to investigate the injuries of female beginner wrestlers in Türkiye.

**Methods:** Based on this, among the wrestlers of Edirne, Istanbul, Antalya, Ankara, Izmir, Yalova, Trabzon, Samsun, Isparta and Muğla provinces, 100 beginner female wrestlers with age  $15 \pm 2.13$ , weight  $48 \pm 3.24$ , height  $151 \pm 2.87$  were chosen voluntarily. Then, by filling the injury questionnaire, the injuries of different organs in 2 past years were collected. Analysis of covariance was used to analyze the data by SPSS 22 software at a significance level of 5%.

**Results:** The results showed that beginner female wrestlers are more exposed to sports injuries. The amount of damage in low weights was much higher than high weights and this may be due to the greater activity of light weight wrestlers to perform the technique and also the large number of wrestlers present in light weights. The most common Wrestling injuries include muscle damage, joint damage, fractures, dislocations, lacerations, and concussions.

**Conclusion:** The injury rate of wrestlers may be due to the difference in the level of knowledge of coaches and athletes, as well as the difference in the level of sports equipment used by these wrestlers. Therefore, it is suggested to hold special training classes to increase the knowledge of wrestling coaches and beginner athletes.

**Keywords:** sports injuries, wrestling, female wrestlers.

### Introduction

Today, sport has expanded significantly from various aspects, and this has led to an increase in the number of competitions throughout the year and of course the risk of injury to athletes has increased, as well as heavy medical expenses and avoiding competitions. It affects athletes a lot. Wrestling is one of the successful sports that many organs are not immune from injury. Many factors in the occurrence of damage to wrestlers is included. Athletes' lack of awareness of these factors increases the percentage of injury. These factors can be both technical and non-technical. Many wrestlers, regardless of the dangerous consequences of losing weight, in some competitions they lose up to 10 kilos and this causes them to lose water, many wrestling halls and mattresses. Ignorance of the exact implementation of positive techniques joints move in unnatural directions and muscles are stretched. Wrestlers spend most of the training and competition time in the guard position according to the type of wrestling, as well as movements such as closing the neck bridge, continuous bending of freestyle wrestlers, structural changes in the neck, back and lower back should be predictable. Wrestling is

one of the oldest sports branches in history and has been integrated with Turkish culture throughout human history. Turkish people have adopted wrestling as a way of life and an important element of cultural identity. (Demirli, 2022). Wrestling, as well as the lack of possibilities and approved and standard rules for several clubs that operate in this field at the country level do, it becomes necessary to carry out scientific studies with the aim of identifying effective factors in the occurrence of damage (Bayindir et al., 2023). Now, due to the increasing number of heroic and professional sports among the communities and the transformation of sports into an industry, the aspect will also increase. Its competitiveness, the opportunity to rest and rebuild for the athletes has decreased a lot (Goh et al., 2022). The past in the field of wrestlers' injuries goes back to several years ago, and during these years, the wrestling rules underwent many changes. It has been said that among these cases, it is possible to point to the time of wrestling, which takes place in shorter times compared to the past, which accelerates the execution of techniques and can increase the possibility of injury (Schwalfenberg, 2019). Also, the competitions of each weight are completed in one day, which also increases the possibility of injury.

On the other hand, the relationship between situational abnormalities as a risk factor leading to sports injuries has always been an important topic in sports medicine studies. It seems that these abnormalities cause excessive mechanical pressure on the muscle, ligament and bone structure and make the athlete susceptible to injury. However, despite the research that has been done on the prevalence of situational abnormalities and the study of their relationship with each other in some fields, less research has been done in the field of wrestling. Therefore, the researcher in this research seeks to prepare a report of common damage in Wrestling and effective factors in the occurrence of damage.

## **Materials and Methods**

### **Research method**

This research is a descriptive-correlative method.

### **Statistical society**

In the injury questionnaire section, the statistical research community consisted of female freestyle wrestlers who have at least 2 years of wrestling experience and have at least one provincial championship position.

### **Sample and sampling method**

In the current research, in the sample questionnaire section, 100 female freestyle wrestlers with age  $15\pm 2.13$ , weight  $48\pm 3.24$ , height  $151\pm 2.87$ , who have at least 2 years of experience in wrestling, were selected from among the wrestlers of Edirne, Istanbul, Antalya, Ankara, Izmir, Yalova, Trabzon, Samsun, Isparta and Muğla provinces.

### **Information gathering methods**

The information related to the injury of female freestyle wrestlers was collected through a questionnaire, which includes the following items. Ethical committee approval dated 31.05.2023 and numbered 2023/05 was obtained from Istanbul Aydın University Social Sciences Ethics Committee for the research.

### **Personal characteristics**

In this section, information related to the athlete's age, natural weight, weight that the wrestler takes, wrestling style, level of education, highest position, number of training sessions per week, number of competitions last year and history of wrestling training was collected.

### **Information related to the place of damage**

The information related to the location of the injury was collected in four separate tables, which include the head and face, trunk, upper limb and lower limb.

### **Characteristic of the damage**

1. Prevent the wrestler from continuing the training
2. Seek treatment

### **3. Deprived of at least one training session.**

### **Information related to dangerous factors in wrestlers**

In a separate table, which includes organs in the vertical row and risk factors in the horizontal row, the data related to the risk factors in the execution of the wrestling technique were collected by the wrestlers, also, in the final questions of the factors questionnaire. Other hazards such as possibilities, Physical fitness, psychological factors, etc. were collected by the wrestlers.

**Table 1.** Frequency of injuries in neck and trunk of the subjects

Limb	Injuries	Percentage
Head and face	75	%75
trunk	72	%72
Back	81	%81
Hip	65	%65
Knee	67	%67

According to table 1, it is observed that 75% of the subjects had injuries in the head and face, 72% in the neck, 81% in the back, 65% in the hip and 67% in the knee.

### Discussion

The results showed that beginner female wrestlers are more exposed to sports injuries. The amount of damage in low weights was much higher than high weights and this may be due to the greater activity of light weight wrestlers to perform the technique and also the large number of wrestlers present in light weights. The most common wrestlers' injuries include muscle damage, joint damage, fractures, dislocations, lacerations, and concussions.

Head and face injuries caused by wrestling are mainly concussions, lacerations, and fractures. Concussions caused by trauma. The collision of the head with the opponent's head and knee, as well as the collision of the head with the mat and the surfaces around the wrestling mat, occurs in head techniques. Facial lacerations usually include eyebrow, lip and chin lacerations, which are caused by hitting the opponent's head and knees. One of the most common facial injuries are ear fractures and it usually turns into a chronic injury due to small blows it frequently occurs in the external part of the ear. The rate of ear and tooth fractures is much higher in Turkish wrestlers than in foreign wrestlers. This is because many countries use ear and tooth protectors, but Turkish wrestlers do not use these protective devices. Fractures and nosebleeds are other facial injuries that occur due to collisions with the opponent's head, knees and hands, also, the drying of the nasal mucosa occurs as a result of the decrease in body water and the decrease in the temperature of the gym (Woolf & Pflieger, 2013). The present shows that there is a head and face injuries among wrestlers. It is due to the type of guard of the wrestlers and the way of performing the techniques. Turning the head and face towards the front during the execution of underhand techniques is not immune to the risk of injury in freestyle wrestling with the opponent's hands. The mechanism of shoulder injury is mostly in head techniques. The pressure when the shoulder joint is in an abducted or adducted position when the opponent throws the wrestler on the mat, it causes shoulder damage, as well as falling on the shoulder is another mechanism of shoulder injury. The mechanism of elbow injury is mostly in head techniques where falling on the open hand causes injury (Sizer, 2021). The main mechanism of injury in the neck is in standing techniques and when the wrestler takes action to take down and faces the opponent's tent to cut off the opponent's leg and raise the neck too much, and this causes vertebral, muscle and nerve damage. The mechanism of lower back injury most commonly occurs in head techniques, when two wrestlers push each other in a semi-hyperextension position, this extension is coupled with rotation in the back and results in injury. Extension against resistance, like lifting a wrestler off the mat, and also with rotation, is one of the main mechanisms of lower back injury. Also, in ground techniques such as buckles, where the back takes a hyperextension position, the lower back is injured. But the damage in the back and rib area usually occurs in bottom techniques, such as the implementation of techniques lifting, which requires pressure on the ribs. The damage in the upper limb is mostly due to the strong force applied to these areas, as well as the bad positions that the joints during the wrestler faces it like the shoulder joint is stretched against the direction of movement of the joint, which is pulled by the opponent. Another mechanism of shoulder injury is falling on the hand when the person lands directly on the shoulder. In general, it is possible in freestyle wrestling, the most damage in the upper limbs happened in the fingers, which is the reason It can be considered the direct involvement of the fingers for the execution of all techniques. In the lower limbs, knee and wrist suffer the most damage. In this research, meniscus damage and knee bursitis are the most damage to the knee. Meniscus damage mostly occurs due to rotation of the foot and weight falling on the knee, and bursitis damage in wrestlers mostly happens during the takedown, when the attacking wrestler hits his knee on the mat with speed and intensity in front of the opponent and as a result of repeating this operation, knee bursitis occurs. The most common ankle injury in wrestlers is sprain ligament injury. In the field of injury factors, it should be said that 73% of injuries occurred in regular training conditions, which is in line with the results of (Elen et al 2018), and it can be said that at this level of sports, we should pay attention to the role of other factors in the occurrence of injuries. Mental preparation and appropriate mental conditions can be considered as one of the factors that contribute to the occurrence of injury, because they have been harmed by people in inappropriate mental conditions. Fatigue conditions, as a result, can be considered an effective factor. The absence of a coach cannot be considered as a factor because most of the injuries occurred in the presence of the coach. In various researches, training conditions as a risk factor have introduced in young wrestlers, the absence of a coach during practice or competition may increase the risk of injury (Zambraski et al., 2023). Because the presence of the coach in these wrestlers would point out the correct technical points,

incorrect technique and performing non-sports movements can be considered as one of the effective factors in the occurrence of injuries, so that some of injuries in the result of wrong techniques. Failure to perform the correct technique on the part of the wrestler causes injury becomes an athlete. Estwanik et al. (2022) reported that inexperienced wrestlers often put themselves at risk. For example, young wrestlers cannot land properly when landing in throwing techniques. The severity of injuries in competition is much higher than in training, but the number of injuries in training is higher than in competition. It is more than the competition because in the current research, the training time was much longer than the duration of the competition. The more matches and the more time wrestlers have trained, the risk of injury has increased in these athletes. Use of the right shoes cover the legs reduces the risk of ankle injury can reduce the lower injuries (Erdoğan et al., 2021). They dehydrate and this water loss peaks a day or so before the race. The long-term impacts this reduction. The amount of the water leaving the body of the wrestler increases the heart rate, decreases the stroke volume and decreases the cardiac output becomes these changes in the cardiovascular system, if accompanied by an increase in body temperature and an imbalance of electrolytes in the body, a lot dangerous will be happened (Roger et al. 2018; Erdoğan et al., 2020).

Wrestling is one of the most impactful sports and wrestlers are never safe from the risk of injury. However, by checking how damage occurs, we can achieve a view to prevent damage. There is a suitable space for wrestlers can reduce the risk of injury so that the space is more than the number of collisions of two wrestlers with each other as well as objects (Roger et al., 2018). The area around the mattress is reduced like a wall. We cannot completely eliminate the injuries caused by direct blows caused by falling on the mat, but reduce the severity of the damage by using a standard wrestling's mattress with a thickness of at least 6 cm, and also by placing a sponge around the devices around the mattress, make the shocks caused by hitting these devices less effective. Many coaches present in the country's clubs scientifically, they are at a very low level and when wrestlers are injured, they cannot make the right decision (Roger et al., 2018). It is recommended that the trainers receive the necessary training in the field of first aid and also these trainers should check the environment every day before training. Controlling weight is one of the most important aspects of wrestling and a wrestler must know the principles of proper nutrition. As mentioned, dehydration can be very dangerous for a wrestler and the athlete should drink fluids before, between and after training (Eghbal et al., 2021). Also, carbohydrates and minerals in wrestling water can help. Glucose in water should be less than mg per liter of water. Also, he screened the wrestlers in terms of postural abnormalities so that proper corrective exercises could be considered for these athletes and prevented injuries related to these abnormalities.

Wrestlers should take minor injuries seriously and take action to improve these injuries before they develop and become chronic. To prevent wrestlers should minimize the risk factors of injury during training and competition, perform general and specific warm-up before training or competition, and also reduce their training when tired and have a good mental condition during training. Implementation of wrong techniques causes structural changes in body organs. Athletes must learn to perform the techniques correctly and correct their technique to prevent abnormalities and injuries in the organs (Roger et al. 2018).

### Conclusion

This research showed that female wrestlers face many serious injuries. Therefore, it is necessary to give the necessary advice to the wrestlers in this regard and prevent more serious injuries. Proper warming up before exercises, drinking enough water and using standard mats in suitable environments are among the prevention factors of these cases.

### References

1. Bayindir, O., Can, S., Demirkan, E., (2023) The Investigation of History of Sports Injury and the Level of Anxiety of Sports Injury in Elite Wrestlers: Descriptive Research., *Turkiye Klinikleri Journal of Sports Sciences* . 2023, Vol. 15 Issue 1, p115-122. 8p.
1. Demirli, A. (2022). Turkish Competitive Culture and Wrestling. *Journal of Social Science and Humanities ISSN, 1811, 1564*.
2. Eghbal Moghanlou A., Gursoy R., Aggun E, (2021). Examining the relationship between body composition values and performance indicators in wrestlers at the World Cup. *Ido Movement for Culture: Journal of Martial Arts Anthropology, 21(3), 23-28.*, Doi: 10.14589/ido.21.3.4
3. Elen E., Yard, R.D Costock, A. (2018). Comparison of pediatric freestyle and Greco-roman wrestling injuries sustained during US national tournament. *Scandinavian Journal of medicine and science in sports, 491-497*.
4. Erdoğan, R., Öner, S Çinar, V., Akbulut, T. (2021). Strength Development, Muscle and Tissue Damage in Different Training Models. *Journal of Pharmaceutical Research International, 33 (19B). pp. 1-6. ISSN 2456-9119*
5. Estwanik, J.J, Bergfeld, J., Canty, T. (2022). Report of injuries sustained during the United States Olympic wrestling trials, *Am J Sports Med, 6(6), 335-40(1978)*.
6. Fogelholm, M. (2019). Effects of bodyweight reduction on sports performance, *Sports Med, 18, 249–267*.

7. Goh, S., Price, R.I., Leedman, P.J., et al. (2022). A comparison of three methods for measuring thoracic kyphosis, implications for clinical studies *Rheumatology*, 39,310–5. *Health Organ*, 81(9), 646-56.
8. Park KJ, Lee JH, Kim HC Injuries in male and female elite Korean wrestling athletes: a 10-year epidemiological study *British Journal of Sports Medicine* 2019;53:430-435.
9. Roger E. Thomas & Zamanpour, K. (2018) Injuries in wrestling: systematic review, *The Physician and Sportsmedicine*, 46:2, 168-196, DOI: 10.1080/00913847.2018.1445406
10. Salehian, M. H., Pilevar, N., KhulusMoghaddam, F., Mahmoudpour, A., Asad Karami, Sh. (2014). Relationship between sport injuries of Neck and Trunk with fitness factors in futsal players. *Bull. Env. Pharmacol. Life Sci.*, Vol 3 (Spl issue II) 2014, 63-66.
11. Schwalfenberg, G. (2019). Improvement of chronic back pain or failed back surgery with
12. Sizer, P.S., Phelps V., Azevedo, E. (2021). Disc related and non-disc related disorders of the thoracic spine. *Pain Practice*, 1, 136–139, 791–795.
13. Woolf, A.D., Pflieger, B. (2013). Burden of major musculoskeletal conditions. *Bull World Health Organ*, 11, 161–171.
14. Zambraski, E., Tipton, C., Tchong, T., Jordon, H., Vailas, A., Callahan, A. (2022). Iowa wrestling study, Changes in the urinary profiles of wrestlers prior to and after competition. *Med Sci Sports*, 7, 217–220.