International Journal of
Disabilities Sports and Health Sciences
e-ISSN: 2645-9094

RESEARCH ARTICLE

Examination of Mental Stamina and Athlete Injury Anxiety Levels of Wrestlers

Çisem ÜNLÜ[1*], Abdulkerim ÇEVİKER[2], Abdüsselam TURGUT[3], Osman KUSAN[4], Efecan TEZCAN[5], Kübra GÜR[6] and Turgut YILDIRIM[7]

[1]Hitit University, Faculty of Sport Sciences, Çorum / Türkiye
[2] Hitit University, Faculty of Sport Sciences, Çorum / Türkiye
[3] Hitit University, Faculty of Sport Sciences, Çorum / Türkiye
[4] Gumushane Unıversıty, High School of Physical Education and Sports, Gümüşhane / Türkiye
[5] Gumushane Unıversıty, High School of Physical Education and Sport, Gümüşhane / Türkiye
[6] Gumushane Unıversıty, Institute of Postgraduate Education, Gümüşhane / Türkiye
[7] Hitit University, Faculty of Sport Sciences, Çorum / Türkiye
*Corresponding author: cisemunlu@hotmail.com

Abstract
The aim of this research is to examine the mental endurance and athlete injury anxiety levels of athletes interested in wrestling from some demographic perspectives. In the study, a descriptive scanning model was used. The universe of the research consists of athletes from various cities of Turkey who are interested in wrestling, and the sample consists of 341 athletes selected by random sampling method among wrestling athletes from Ankara, Gümüşhane, Istanbul, Samsun and İzmir, Kayseri. As a data collection tool, the demographic information form developed by the researchers was used "Athlete Injury Anxiety Scale". In the study, the assumption of normality was first examined with the Kolmogorov-Smirnov and Shapiro-Wilk tests in the statistical evaluation of the data. The research findings were given as n (%), mean and standard deviation values, and the findings were considered significant at the $p<0.05$ level. In the study, there was no significant relationship between age, undergraduate status and educational status variables, athlete injury anxiety levels and mental toughness levels; When the athlete's age, athlete's injury status, gender, number of nationality variables were examined, it was determined that there was a significant difference in some sub-dimensions of the mental toughness inventory and in the total scores of the scale. As a result, it can be said that demographic variables such as age, gender, being a national athlete are effective on the mental endurance and disability anxiety of the athletes.

Keywords
Athlete, Anxiety, Mental toughness, Wrestling

INTRODUCTION

Due to its nature, sports contain many competitive elements. This competitive environment sometimes includes various physiological and psychological difficulties before the competition and sometimes during the competition. Athletes try to continue sports by trying to remove the negative experiences they experience in the sports environment with different defense mechanisms. Negative experiences can sometimes be internal as well as external influences. In this context, two theoretical models have been proposed that try to explain the resilience processes of the athletes regarding the negative events they encounter and how they achieve the possible positive results as a result and how they adapt (**Galli and Vealey, 2008; Fletcher**

Received: 25 Ocotober 2023 ; Revised ;12 December 2023 ; **Accepted:** 21 Decemberr 2023; **Published:** 25 January 2024

How to cite this article: Ünlü, Ç., Çeviker, A., Turgut, A., Kusan, O., Tezcan, E., Gür, K. And Yıldırım, T. (2024). Examination of Mental Stamina and Athlete Injury Anxiety Levels of Wrestlers. *Int J Disabil Sports Health Sci*;7(1):210-222. https://doi.org/10.33438/ijdshs.1381006

and Sarkar, 2012). In the conceptual resilience model of (Galli and Vealey, 2008) which is the first of these models, the experiences of the athletes and their perceptions of resilience are revealed. In the second model, (Fletcher and Sarkar, 2012) theory of optimal sports performance and resilience, resilience is considered as a concept that covers subjects such as stress factors and cognitive evaluation. In both models, it is seen that factors such as stress factors, anxiety, social support, focus, coping and positive personality, including various difficult life events that affect the psychological resilience process of athletes, come to the fore. Stress factors such as difficulties in sports life, constantly competing under high pressure, the sports career being stuck in a certain age range, the risk of injury, and anxiety make the psychological resilience process critical for athletes (Collins and MacNamara, 2012; Bromley et al. 2018). Athletes main sources of stress are stated to be anxiety about work and competition environment, lack of self-confidence and fear of injury (Anshel and Anderson, 2002; Nicholls et al. 2006). Athlete injuries are a situation that occurs when the endurance limit of the tissues is exceeded as a result of encountering more than normal force in one or more parts of the body due to personal and environmental factors during sports activities. Sports injury negatively affects the performance and skill level of the athlete (Kalyon, 2003). Detection of the athlete's injury anxiety and taking the necessary precautions related to it can be a preventive factor in injuries. Regardless of the sports branch, every athlete can be exposed to minor or advanced sports injuries throughout his/her sports life. Sports injuries cause athletes to take a long break from their sports life, and sometimes even cause the end of sports life. Accordingly, the consequences of these injuries cause different concerns in athletes (Ünver et al. 2020). However, successful performance in sports requires the athlete not only to be healthy and physically fit , but also to be mentally ready to play (Junge, 2000). Some researchers have suggested that some athletes have a particular predisposition to injury as a result of their personality traits (Lysens et al. 1989; Junge et al. 2000). The literature shows that results such as sensation seeking, strategies for coping with stress, competitive anxiety, behavioral characteristics, and coping with life events have an impact on the risk of sports injury in general (Andersen and Williams, 1999; Junge et al. 2000; Johnson et al. 2005; Schwebel et al. 2007). As a result of the literature review, no study was found that examined the mental endurance and athlete injury anxiety levels of wrestling athletes. From this point of view, the relationship between wrestling athletes mental toughness and athlete injury anxiety levels was examined in this study.

MATERIALS AND METHODS

The necessary permission for the research was obtained from Hitit University Non-Interventional Ethics Committee with protocol number 2023-12. All participants voluntarily participated in our study.

Universe and Sample

In the research, a descriptive survey model was used as it aims to determine the current situation. Survey models are research approaches that aim to describe a past or present situation as it is (Karasar, 1999).

The universe of the research consists of athletes from various cities of Turkey who are interested in wrestling, and the sample consists of 341 athletes selected by random sampling method from wrestling athletes from Ankara, Gümüşhane, Istanbul, Samsun and İzmir.

Data Collection Tools

As a data collection tool, (Sheard et al. 2009) and adapted to the Turkish population by Altıntaş and Koruç (2017) and the Athlete Injury Anxiety Scale developed by (Rex and Metzler, 2016) and adapted to Turkish by (Caz et al. 2019).

The Mental Endurance Inventory in Sports consists of 14 items and 3 sub-dimensions. Scale factors are Confidence (6 items), Control (4 items) and Continuity (4 items). The scale items are in 4-point Likert Type and Completely Wrong (1). Somewhat True (2), Mostly True (3), and Completely True (4). The lowest score that can be obtained from the scale is 14 and the highest score is 56. The description of the three sub-dimensions in the Sports Mental Endurance Inventory is as follows (Sheard et al. 2009). Confidence is believing in the abilities to reach the goal in difficult situations and thinking that you are better than your competitors. Control is keeping your cool, being in control, and relaxed in the face of pressure or unexpected situations. Continuity is in the form of taking responsibility, concentrating

and struggling in line with the determined targets (**Altıntaş and Koruç, 2015**).

The Athlete Injury Anxiety Inventory developed by (**Rex and Metzler, 2016**) and adapted into Turkish by (**Caz et al. 2019**) consists of 21 items and seven sub-dimensions, and is a five-point Likert type scale (1: strongly disagree. 2: disagree, 3: undecided). , 4: agree, 5: strongly agree). The seven sub-factors in question are; anxiety of losing athletic ability, anxiety of being perceived weak, anxiety of suffering, anxiety of disappointment, anxiety of re-injury, anxiety of losing social support, and anxiety of losing self-esteem. As the mean score obtained from the scale (total score and sub-dimensions) increases, it shows that injury anxiety increases.

Statistical Analysis

In the study, reliability coefficients (cronbach alpha) were calculated in order to control the internal consistency of the answers given by the wrestling athletes to the scale items (Table 1).

Table 1. Internal consistency coefficients of participants responses to scale items

Scales and Sub-Dimensions	Internal Consistency Coefficient	Evaluation
Mental Endurance Inventory in Sports	0.812	Highly Reliable
Trust	0.758	Moderately Reliable
Durability	0.636	Moderately Reliable
Control	0.709	Moderately Reliable
Sports Injury Anxiety Scale	0.882	Highly Reliable
Anxiety of Losing Talent	0.751	Moderately Reliable
Poor Perception Anxiety	0.420	Low Reliable
Suffering Anxiety	0.584	Low Reliable
Anxiety of Disappointment	0.462	Low Reliable
Anxiety of Losing Social Support	0.441	Low Reliable
Re-Injury Anxiety	0.430	Low Reliable

In the statistical evaluation of the data, the assumption of normality was first examined with the Kolmogorov-Smirnov and Shapiro-Wilk test (P>0.05). In the study, whether the total scores of the scale differ according to gender, being a licensed athlete, being a national athlete, having a previous sports injury and having any previous injury, Student's t-test, and if it differs according to the age of the athlete, was analyzed by One-Way Analysis of Variance and Tukey multiple comparison test. SPSS 22.0 V. statistical package program was used in all statistical calculations. The research findings were given as n (%), mean and standard deviation values, and the findings were considered significant at the p<0.05 level.

RESULTS

The distribution of the athletes, who are interested in wrestling in various cities of Turkey and participated in the research voluntarily, according to their demographic characteristics is given in Table 2.

Of the individuals who voluntarily participated in the research, 48.7% are male, 34.6% are national athletes, 62.2% are 25 years old and over, 84.2% are university graduates, 49.9% are 6 and above sports age. 68.3% of them are at the middle income level and 44.6% of them are people who have not had a sports injury before (Table 2).

Table 2. Frequency and percentage distributions regarding the demographic characteristics of the participants

Gender	**n**	**%**	**Nationality Status**	**n**	**%**
Woman	175	51.3	Yes	118	34.6
Male	166	48.7	No	223	65.4
Total	341	100.0	Total	341	100.0
Age	n	%	Educational Status	n	%
18-20	98	28.7	High school	36	10.6
21-24	31	9.1	University	287	84.2
25 and above	212	62.2	graduate	18	5.3
Total	341	100.0	Total	341	341
Sports age	n	%	Family Income Level	n	%
1 year and below	74	21.7	Low(Income<Expense)	100	29.3
2-3	39	11.4	Medium (Income=Expense)	233	68.3
4-5	58	17.0	High (Income>Expense)	8	2.3
6 and above	170	49.9	Total	341	100.0
Total	341	100.0			
			Previous Sports Injury Status	n	%
			Yes	152	44.6
			No	189	55.4
			Total	341	100.0

Table 3. Mental endurance and sports ınjury anxiety level of participants by gender variable

Scales and Sub-Dimensions	**Gender**	**n**	**Average**	**SS**	**p**
Mental Endurance Inventory in Sports	Woman	175	38.58	175	0.006
	Male	166	40.22	166	
Trust	Woman	175	17.27	175	0.003
	Male	166	18.18	166	
Durability	Woman	175	9.23	175	0.200
	Male	166	9.53	166	
Control	Woman	175	12.07	175	0.059
	Male	166	12.51	166	
Sports Injury Anxiety	Woman	175	49.26	175	0.001
	Male	166	53.49	166	
Anxiety of Losing Talent	Woman	175	5.62	175	<0.001
	Male	166	7.17	166	
Poor Perception Anxiety	Woman	175	7.27	175	0.739
	Male	166	7.34	166	
Suffering Anxiety	Woman	175	6.45	175	<0.001
	Male	166	7.71	166	
Anxiety of Disappointment	Woman	175	7.55	175	0.052
	Male	166	8.10	166	
Anxiety of Losing Social Support	Woman	175	7.41	175	0.618
	Male	166	7.51	166	
Re-Injury Anxiety	Woman	175	7.18	175	0.733
	Male	166	7.28	166	

According to the gender variable of the wrestlers, there was no significant difference in the total score of the sports injury anxiety scale and the total scores of the sub-dimensions except for the anxiety of suffering, while a significant difference was determined between the total score

of mental endurance in sports and the total score of the confidence sub-dimension (p<0.05; Table 3). It was observed that the total scores of male athletes were higher than female athletes.

Table 4. Mental endurance and sports ınjury anxiety level of participants by nationality

Scales and Sub-Dimensions	Nationality status	n	Average	SS	p
Mental Endurance Inventory in Sports	Yes	118	40.08	6.13	0.089
	No	223	39.01	5.14	
Trust	Yes	118	18.19	2.99	0.121
	No	223	17.96	2.65	
Durability	Yes	118	9.31	2.45	0.664
	No	223	9.41	2.01	
Control	Yes	118	12.58	2.31	0.070
	No	223	12.13	2.04	
Sports Injury Anxiety	Yes	118	52.87	14.91	0.085
	No	223	50,50	10.30	
Anxiety of Losing Talent	Yes	118	6.64	3.01	0.184
	No	223	6.24	2.35	
Poor Perception Anxiety	Yes	118	7.38	2.55	0.616
	No	223	7.26	1.72	
Suffering Anxiety	Yes	118	7.34	2.82	0.134
	No	223	6.91	2.29	
Anxiety of Disappointment	Yes	118	8.19	2.31	0.034
	No	223	7.62	2.42	
Anxiety of Losing Social Support	Yes	118	7.47	2.29	0.907
	No	223	7.45	1.77	
Re-Injury Anxiety	Yes	118	7.50	2.91	0.153
	No	223	7.09	2.33	

According to the nationality variable of wrestling athletes, no significant difference could be found in the total scores of mental toughness and sub-dimension total in sports and sports injury anxiety scale total score and anxiety of losing ability, anxiety of being perceived weak, anxiety of suffering, anxiety of losing social support and anxiety of re-injury (p<0.05; Table 4). In the disappointment anxiety sub-dimension total score, the total scores of the national athletes were higher than the non-national athletes (p= 0.034).

Table 5. Mental endurance in sports and sports ınjury anxiety level of participants by previous athlete injury

Scales and Sub-Dimensions	Previous Athlete Injury Status	n	Average	SS	p
Mental Endurance Inventory in Sports	Yes	152	39.21	5.02	0.615
	No	189	39.51	5.89	
Trust	Yes	152	17.94	2.66	0.181
	No	189	17.53	2.88	
Durability	Yes	152	9.02	2.11	0.007
	No	189	9.66	2.19	
Control	Yes	152	12.25	2.23	0.773
	No	189	12.32	2.07	
Sports Injury Anxiety	Yes	152	53.90	11.61	<0.001
	No	189	49.24	12.16	

Anxiety of Losing Talent	Yes	152	6.84	2.51	0.003
	No	189	6.01	2.62	
Poor Perception Anxiety	Yes	152	7.48	2.41	0.156
	No	189	7.16	1.69	
Suffering Anxiety	Yes	152	7.61	2.31	<0.001
	No	189	6.62	2.55	
Anxiety of Disappointment	Yes	152	8.09	2.17	0.064
	No	189	7.60	2.54	
Anxiety of Losing Social Support	Yes	152	7.61	2.09	0.213
	No	189	7.34	1.85	
Re-Injury Anxiety	Yes	152	8.07	2.55	<0.001
	No	189	6.56	2.34	

In the study, no significant difference was found between the total score of the sub-dimension of perceived weak anxiety, the anxiety of disappointing and the anxiety of losing social support, and the total score of the mental toughness scale in sports, confidence and control sub-dimension, according to the previous injury of the wrestlers ($p<0.05$; Table 5). A statistically significant difference was found between the mental toughness sub-dimension, sports injury anxiety total score, loss of ability anxiety, suffering anxiety and re-injury anxiety sub-dimension total scores (Table 5). It has been observed that athletes who have had sports injuries before have higher sports injury anxiety and lower endurance levels.

Table 6. Mental endurance and sports injury anxiety level of participants by age

Scales and Sub-Dimensions	Age	n	Average	SS	p
Mental Endurance Inventory in Sports	18-20	98	39.62	5.47	0.754
	21-24	31	38.77	5.11	
	25 and above	212	39.35	5.61	
Trust	18-20	98	17.74	2.76	0.590
	21-24	31	17.23	2.80	
	25 and above	212	17.77	2.81	
Durability	18-20	98	9.41	2.12	0.678
	21-24	31	9.68	2.12	
	25 and above	212	9.32	2.21	
Control	18-20	98	12.47	1.78	0.387
	21-24	31	11.87	2.23	
	25 and above	212	12.26	2.28	
Sports Injury Anxiety	18-20	98	50.40	11.13	0.604
	21-24	31	50.74	12.60	
	25 and above	212	51.83	12.52	
Anxiety of Losing Talent	18-20	98	6.17	2.48	0.606
	21-24	31	6.29	2.64	
	25 and above	212	6.49	2.65	
Poor Perception Anxiety	18-20	98	7.14	1.68	0.643
	21-24	31	7.42	1.77	
	25 and above	212	7.36	2.23	
Suffering Anxiety	18-	98	6.93	2.45	0.723
	21-24	31	6.90	2.56	
	25 and above	212	7.15	2.50	
Anxiety of Disappointment	18-20	98	7.53	2.23	0.287
	21-24	31	7.65	2.89	
	25 and above	212	7.98	2.38	
Anxiety of Losing Social Support	18-20	98	7.42	1.83	0.973
	21-24	31	7.48	2.10	
	25 and above	212	7.47	2.01	
Re-Injury Anxiety	18-20	98	7.16	2.44	0.595
	21-24	31	6.84	2.66	
	25 and above	212	7.32	2.58	

In the study, no significant difference was found between the sports injury anxiety and mental toughness in sports total score and sub-dimension total scores of wrestling athletes according to their age ($p<0.05$; Table 6).

Table 7. Mental endurance and sports injury anxiety level of participants by sports age

Scales and Sub-Dimensions	Sports Age	n	Average	SS	p
Mental Endurance Inventory in Sports	1 year and below	74	37.88b	3.64	0.043
	2-3	39	39.82ab	5.02	
	4-5	58	40.45a	6.38	
	6 and above	170	39.56ab	5.88	
Trust	1 year and below	74	16.84b	1.80	0.001
	2-3	39	18.77a	2.15	
	4-5	58	18.29a	3.43	
	6 and above	170	17.65ab	2.92	
Durability	1 year and below	74	9.57	1.81	0.730
	2-3	39	9.13	1.49	
	4-5	58	9.47	2.19	
	6 and above	170	9.32	2.44	
Control	1 year and below	74	11.47b	1.73	0.001
	2-3	39	11.92ab	2.86	
	4-5	58	12.69a	2.00	
	6 and above	170	12.59a	2.07	
Sports Injury Anxiety	1 year and below	74	52.34	10.62	0.857
	2-3	39	50.77	13.40	
	4-5	58	51.48	13.73	
	6 and above	170	50.95	11.94	
Anxiety of Losing Talent	1 year and below	74	6.99	2.78	0.067
	2-3	39	5.72	2.67	
	4-5	58	6.12	2.94	
	6 and above	170	6.35	2.34	
Poor Perception Anxiety	1 year and below	74	7.32	1.51	0.113
	2-3	39	7.85	2.29	
	4-5	58	7.59	2.00	
	6 and above	170	7.08	2.18	
Suffering Anxiety	1 year and below	74	7.27	2.20	0.804
	2-3	39	6.79	2.56	
	4-5	58	7.02	3.07	
	6 and above	170	7.05	2.38	
Anxiety of Disappointment	1 year and below	74	7.82	2.54	0.602
	2-3	39	7.33	2.67	
	4-5	58	7.88	2.67	
	6 and above	170	7.91	2.16	
Anxiety of Losing Social Support	1 year and below	74	7.46	1.68	0.122
	2-3	39	7.74	2.04	
	4-5	58	7.90	2.31	
	6 and above	170	7.24	1.92	
Re-Injury Anxiety	1 year and below	74	7.19	2.24	0.376
	2-3	39	7.82	2.53	
	4-5	58	6.90	2.76	
	6 and above	170	7.22	2.60	

In the study, no significant difference was found in the total score of the sports injury anxiety scale and sub-dimension total scores of the wrestling athletes according to the sports age,

while a significant difference was determined between the total scores of the mental toughness, confidence and control sub-dimensions in sports (p<0.05; Table 7). No significant difference was found in the endurance sub-dimension. It has been seen that the total scores of the wrestlers with a sports age of more than 4 years are higher than the athletes with a sports age of 1 year and below.

Table 8. Mental endurance and sports injury anxiety level of participants by educational status

Scales and Sub-Dimensions	Educational status	n	Average	SS	p
Mental Endurance Inventory in Sports	High school	36	37.47	4.75	
	University	287	39.59	5.61	0.088
	graduate	18	39.89	4.97	
Trust	High school	36	17.33	2.26	
	University	287	17.72	2.79	0.387
	graduate	18	18.44	3.67	
Durability	High school	36	8.97ab	1.61	
	University	287	9.53a	2.22	0.002
	graduate	18	7.78b	1.52	
Control	High school	36	11.17b	2.78	
	University	287	12.34b	1.99	<0.001
	graduate	18	13.67a	2.09	
Sports Injury Anxiety	High school	36	53.69	10.11	
	University	287	50.74	12.34	0.100
	graduate	18	55.89	11.38	
Anxiety of Losing Talent	High school	36	6.53	2.42	
	University	287	6.30	2.65	0.246
	graduate	18	7.33	1.97	
Poor Perception Anxiety	High school	36	7.86	2.22	
	University	287	7.20	1.99	0.072
	graduate	18	7.94	2.29	
Suffering Anxiety	High school	36	7.61	2.36	
	University	287	6.97	2.54	0.254
	graduate	18	7.50	1.72	
Anxiety of Disappointment	High school	36	8.22	1.94	
	University	287	7.71	2.43	0.124
	graduate	18	8.72	2.44	
Anxiety of Losing Social Support	High school	36	7.75	1.36	
	University	287	7.39	2.05	0.327
	graduate	18	7.94	1.47	
Re-Injury Anxiety	High school	36	7.36	2.18	
	University	287	7.23	2.58	0.852
	graduate	18	6.94	2.82	

In the study, no significant difference was found between the sports injury anxiety and mental toughness in sports total score and confidence sub-dimension total scores according to the education level of wrestling athletes (P<0.05; Table 8). A significant difference was found in the control and endurance sub-dimensions. It was observed that the resilience of university graduates is higher than graduate graduates, and the control scores of graduate graduates are higher than university and high school graduates. A moderately significant negative correlation was found between the sports injury anxiety of wrestlers and the mental toughness scale total scores in sports (r=0,-476).

DISCUSSION

This study was conducted to examine the Mental Endurance Inventory and Athlete Injury anxiety levels of athletes who are interested in wrestling. In the study, there was no significant relationship between age, undergraduate status and educational status variables, athlete injury anxiety levels and mental toughness levels; When the athlete's age, athlete's injury status, income status,

gender, number of nationality variables were examined, it was determined that there was a significant difference in some sub-dimensions of the mental toughness inventory and in the total scores of the scale.

According to the gender variable of the wrestlers, there was no significant difference in the total score of the sports injury anxiety scale and the total scores of the sub-dimensions except for the anxiety of suffering, while a significant difference was determined between the total score of mental toughness in sports and the total score of the confidence sub-dimension. It was observed that the total scores of male athletes were higher than female athletes. When the answers given to the mental toughness confidence sub-dimension are examined according to the gender variable, it is seen that men have a higher level of mental toughness than women. Male athletes have higher anxiety than females. In his study, (**Tanyeri, 2019**) stated that male athletes were injured more frequently, which was due to the high number of male athletes, injury anxiety and being more active in branches that require physical contact. **Nicholls et al.** (**2009**) stated in their study that male athletes scored significantly higher than women in their mental toughness total scores, and that these differences may be due to the different socialization processes of women. **Gerber** (**2012**) investigated the relationship between physical activity and mental resilience of adolescents. emerge put in the study gender to the variable according to of men from women more high mental durability to their level have reached While this result is in parallel with our study, (**Yıldız, 2017**) could not detect a significant difference in terms of gender in his study on the examination of the relationship between mental endurance and self-efficacy levels in sports. Although the interest of women in sports activities has increased worldwide in recent years, the number of female athletes in Turkey has not reached sufficient numbers in some branches. **İnan and Koç** (**2021**) in their study women's participation in sports has difficulties due to the male-dominated social structure in Turkey and they found that women are less interested in sports than men.

According to the nationality variable of wrestling athletes, no significant difference was found in the total scores of mental toughness and sub-dimension in sports and total score of sports injury anxiety scale and anxiety of losing ability, anxiety of being perceived weak, anxiety of suffering, anxiety of losing social support, and anxiety of re-injury. In the disappointment anxiety sub-dimension total score, the total scores of the national athletes were higher than those of the non-national athletes. **Gould et al.** (**1987**) stated in their study that the most important factor for success in wrestling is mental toughness and that elite athletes have higher mental toughness than others. In a different study, (**Shin and Lee, 1994**) investigated mental toughness among elite and non-elite Korean female athletes. They found that although elite athletes found no difference in arousal and attention control compared to others, they were mentally stronger. **Golby and Sheard** (**2004**) stated in their study that players who play at high standards are more successful in situations such as commitment, control, challenge, negative energy control and attention control. **Cowden** (**2016**) in his study on skin athletes, stated that mental toughness is related to some, if not all, of the performance in macro, micro and critical moments.

In the study, there was no significant difference between the total score of the anxiety of being perceived weak, the anxiety of disappointing and the anxiety of losing social support, and the total score of the mental toughness scale, confidence and control sub-dimension in sports, according to the previous injury of the wrestlers. A statistically significant difference was found between the sub-dimension, sports injury anxiety total score, loss of ability anxiety, suffering anxiety and re-injury anxiety sub-dimension total scores. According to these results, it is seen that athletes who have had sports injuries before have higher sports injury anxiety and lower endurance levels. **Leddy et al.** (**1994**), in their study, examined the psychological responses of 343 male university athletes participating in 10 sports to injury. Found that they exhibited more depression, anxiety, and lower self-esteem than their controls immediately after and 2 months later, and experienced a period of emotional distress, which in some cases could be severe enough to require clinical intervention. They stated that returning to sports after a serious injury is a difficult process for competitive athletes. (**Bianco, 2001; Bianco et al. 1999; Gould et al. 1997; Güvendi et al. 2018**). It can be said that the fact that the previously injured athletes could not get rid of their fear of being injured again causes them to

remain shy in performing at a high level, while the non-injured athletes can display more comfortable and controlled behaviors even under pressure while performing their performance.

According to the results of the research, no significant relationship was found between the mental resilience scale total score and the sub-dimension total scores, and anxiety of having an injury and sports injury. Research by (**Johnson and Ivarsson, 2011**) has shown that players who have had injuries in the past have a higher level of anxiety than players who have not been injured before. **Christakou et al.** (**2022**) reported that previously injured athletes experience re-injury anxiety and have low confidence in avoiding re-injury. **Taylor and Taylor** (**1997)** stated that lack of coordination and increased muscle tension in athletes with a history of injury increase the risk of re-injury. Studies have revealed the existence of a direct relationship between previous injury and injury. Data found by (**Maddison and Prapavessis, 2005**) show that previous injuries are positively associated with injury frequency, while (**Hanson et al. 1992**), did not find this relationship. When the literature is examined, there are differences between the studies. We can say that these differences are due to the fact that the branches in the studies are different and that they have different demographic structures.

According to the results of the research, a positive relationship was found between the duration of doing sports and the mental endurance inventory sub-dimension, trust and persistence. Confidence and continuity sub-dimension scores also increased as individuals' duration of doing sports increased. In addition, the total mental toughness scores of the wrestlers with more than 4 years of sports experience were higher than those of the athletes with 1 year or less of sports experience. These data show that experienced athletes increase their mental toughness scores. In the study of (**Orhan, 1996**) in which the mental resilience and emotional intelligence levels of individuals related to individual and team sports branches were examined, no significant difference was found between the duration of doing sports and the mental resilience inventory sub-dimensions of the participants. However, it can be said that the period of getting used to the sport has the potential to affect the mental endurance of the novice athletes and the mental endurance scores of the experienced athletes may increase. **Connaughton et al.** (**2008**) based on the results of the research, determined that the mental resilience levels of athletes with more experience of doing sports are higher than those who are inexperienced or have less experience. In a study by (**Elemiri and Aly, 2014**) it was determined that athletes with more experience had higher mental toughness levels and more successful performance than those with less experience.

As a result of the research, no significant difference was found between the sports injury anxiety, mental toughness scale total score and confidence sub-dimensions according to the education level of the wrestlers. However, a difference was found in the sub-dimensions of control and endurance. A moderate negative correlation was found between wrestling and sports injury anxiety and mental toughness scale. Resilience was higher in university graduates, and control was higher in graduate graduates. **Sarı et al.** (**2020**) no significant difference was found in mental endurance according to the educational status of taekwondo athletes. However, (**Yarayan et al. 2018**) as a result of the analysis of the mental toughness of elite level athletes who play individual and team sports, showed that there are significant differences in mental toughness total score and control sub-dimension according to individual athlete education levels. According to these results, it was seen that there was a significant difference in the mental resilience levels of the athletes with undergraduate education compared to the level of athletes with high school education. Considering these different results, it can be said that more detailed research is needed on the effect of educational status on mental resilience. Mental resilience is a situation that we encounter frequently throughout our lives and that we can face at any time. Therefore, it is important for athletes to control or improve their mental stamina.

No significant difference was found between the sports injury anxiety and mental endurance in sports total score and sub-dimension total scores according to the age of wrestling athletes. **Gucciardi et al.** (**2016**) stated that young tennis players have more mental stamina than older tennis players and they are more persistent in competitions. **Connaughton et al.** (**2008**) claimed that developmental factors such as age do not play a role in mental resilience, and that sports experience is a more important criterion than age.

In conclusion, current research shows that athletes have mental resilience concerns after injury. In our study, it was found that women, young athletes, the duration of doing sports, education status and having a disability were associated with high anxiety levels. In addition, when it is considered that athletes may experience high levels of anxiety as a result of the extent of the injury they have suffered due to the sports environment or their childhood experiences independently, substance use, relationships with teammates and traumatic events, it becomes necessary to include these factors in the studies. In addition, studies suggest that emotional distress caused by negative life events is associated with a decrease in the individual's capacity to participate effectively in the environment, and this may increase the risk of injury. In addition, few studies provide positive findings that psychological interventions that reduce stress and anxiety can reduce the frequency of athlete injuries. However, the full impact of these interventions has not yet been adequately studied. Athletes may experience different emotional experiences during the injury and rehabilitation process. These experiences can range from temporary emotional difficulties such as fear, frustration, sadness to a diagnosable mental health problem. After injury, the athlete may experience new mental health problems or worsen existing mental health problems. The factors contributing to mental toughness symptoms are complex, and additional well-designed studies focusing on athlete populations are needed to better understand the athlete experience. These studies can help identify subgroups of athletes and periods of risky development and help determine the likelihood of being at risk for athlete mental health.

Conflict of Interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. The author(s) received no financial support for the research, authorship, and/or publication of this article.

Ethics of the Research

The necessary permission for the research was obtained from Hitit University Non-Interventional Ethics Committee with protocol number 2023-12. All participants voluntarily participated in our study.

Author Contributions

Study Design, AÇ, ÇÜ, AT; Data Collection, AT, OK; Statistical Analysis, AÇ, OK; Data Interpretation, AÇ; Manuscript Preparation, KG, ET, TY; Literature Search, ÇÜ, KG, AT, TY. All authors have read and agreed to the published version of the manuscript.

REFERENCES

Altıntaş, A. (2015). The role of dispositional flow, motivation level and goal orientation in determining mental toughness of athletes. PhD Thesis, Ankara University, Institute of Health Sciences, Department of Sport Sciences, Ankara, 124p, (in Turkish).

Altıntaş, A. and Koruç, P. B. (2017). Examining Psychometric Properties of The Sport Mental Toughness Questionnaire-SMTQ. *Hacettepe Journal of Sport Sciences* , *27*(4): 162-171. [CrossRef]

Andersen M.B. and Williams J.M. (1999). Athletic İnjury, Psychosocial Factors and Perceptual Changes During Stress. *J Sports Sci*, 17: 735–741. [PubMed]

Anshel, M., & Anderson, D. (2002). Coping with Acute Stress in Sport: Linking Athletes' Coping Style, Coping Strategies, Affect, and Motor Performance. *Anxiety, Stress & Coping*, 15(2): 193-209. [CrossRef]

Bromley, S. J., Drew, M. K., Talpey, S., McIntosh, A. S. and Finch, C. F. (2018). A Systematic Review of Prospective Epidemiological Research Into Injury and Illness in Olympic combat sport. *British Journal of Sports Medicine*, 52(1): 8-16. [PubMed]

Caz, Ç., Kayhan, R.F. ve Bardakçı, S. (2019). Adaptation of Sport Injury Anxiety Scale into Turkish: Validity and Reliability Study. Turkish Journal of Sports Medicine, 54(1): 52-63. [CrossRef]

Christakou, A., Stavrou, N. A., Psychountaki, M., and Zervas, Y. (2022). Re-injury Worry, Confidence and Attention as Predictors of A Sport Re-İnjury During A Competitive Season. *Research in Sports Medicine*, *30*(1): 19-29. [PubMed]

Collins, D. and MacNamara, Á. (2012). The Rocky Road To The Top. *Sports Medicine*, 42(11): 907-914. [PubMed]

Connaughton, D., Hanton, S., Jones, G. and Wadey, R. (2008). Mental Toughness Research: Key İssues in This Area. *International Journal of Sport Psychology*. 39(3): 192- 204.

Connaughton, D., Wadey, R., Hanton, S. and Jones, G. (2008). The Development and Maintenance of Mental Toughness: Perceptions of Elite Performers. *Journal of Sports Sciences*, 26(1): 83-95. [PubMed]

Elemiri, A. and Ahmet, A.L.Y. (2014). Mental Toughness and İts Relationship To The Achievement Level of The Weightlifters in Egypt. *Turkish Journal of Sport and Exercise*, 16(2): 63-69. [CrossRef]

Fletcher, D. and Sarkar, M. (2012). A Grounded Theory of Psychological Resilience in Olympic champions. *Psychology of Sport and Exercise,* 13(5): 669-678. [CrossRef]

Galli, N. and Vealey, R. S. (2008). "Bouncing Back" from Adversity: Athletes' Experiences of Resilience. *The Sport Psychologist*, 22(3): 316-335. [CrossRef]

Gerber, M., Kalak, N., Lemola, S., Clough, P. J., Pühse, U., Elliot, C. and Brand, S. (2012). Adolescents' Exercise and Physical Activity Are Associated With Mental Toughness. *Mental Health and Physical Activity*, 5(1): 35-42. [CrossRef]

Golby, J. and Sheard, M. (2004). Mental Toughness and Hardiness at Different Levels of Rugby League. *Personality and Individual Differences*, 37(5): 933-942. [CrossRef]

Gould, D., Hodge, K., Peterson, K., & Petlichkoff, L. (1987). Psychological foundations of coaching: Similarities and differences among intercollegiate wrestling coaches. The Sport Psychologist, 1(4), 293-308. [CrossRef]

Gucciardi, D. F., Peeling, P., Ducker, K. J. and Dawson, B. (2016). When The Going Gets Tough: Mental Toughness and İts Relationship with Behavioural Perseverance. *Journal of Science and Medicine in Sport*, 19(1): 81-86. [PubMed]

Güvendi, B., Türksoy, A., Güçlü, M. and Konter, E. (2018). Examination of the Level Courage and Mental Toughness of Professional Wrestlers. *International Journal of Sport Exercise and Training Sciences*, 4(2): 70-78. [CrossRef]

Hanson, S.J., McCullagh, P. and Tonymon, P. (1992). The Relationship of Personality Characteristics, Life Stress, and Coping Resources To Athletic İnjury. *Journal of Sport and Exercise Psychology*, 14(3): 34-42. [CrossRef]

İnan, H. and Koç, M. (2021). The Relationship Between Life Satisfaction of The School of Physical Education and Sports Students and Their Levels of Sports Engagement. *Journal of Educational Issues*, 7(2): 67-74. [CrossRef]

Johnson, U. and Ivarsson, A. (2011). Psychological Predictors of Sport İnjuries Among Junior Soccer Players. *Scandinavian Journal of Medicine and Science in Sports*, 21(1): 129–136. [PubMed]

Junge, A., Dvorak, J., Rosch, D., GrafBaumann, T., Chomiak, J. and Peterson, L. (2000). Psychological and Sport-Specific Characteristics of Football Players. *Am J Sport Med*, 28: 22–28. [PubMed]

Junge, A. (2000). The İnfluence of Psychological Factors on Sports İnjuries. Review of The Literature. *Am J Sports Med*, 28: 10–15. [PubMed]

Kalyon, T.A. (2003) *Sports Medicine Athlete Health and Sports Injuries*, (Third ed). Gata Publisiher, p. 177-8.

Leddy, M. H., Lambert, M. J. and Ogles, B. M. (1994). Psychological Consequences of Athletic İnjury Among High-Level Competitors. *Research Quarterly for Exercise and Sport*, *65*(4): 347-354. [PubMed]

Lysens, R.J., Ostyn, M.S. and Vanden Auweele, Y. (1989). The Accident-Prone and Overuseprone Profiles of the Young Athlete. *Am J Sports Med*, 17: 612–619. [PubMed]

Maddison, R. and Prapavessis, H.A. (2005). Psychological approach to the prediction and prevention of athletic injury. *Journal of Sport and Exercise Psychology*, 27(3): 289–310. [CrossRef]

Nicholls, A. R., Polman, R. C., Levy, A.R. and Backhouse, S. H. (2009). Mental Toughness in Sport: Achievement Level, Gender, Age, Experience, and Sport Type Differences. *Personality and Individual Differences*, 47(1): 73-75. [CrossRef]

Nicholls, A., Holt, N., Polman, R. and Bloomfield, J. (2006). Stressors, Coping, and Coping Effectiveness Among Professional Rugby

Union Players. *The Sport Psychologist*, 20: 314-329. [CrossRef]

Orhan, S. (2018). The relationship of emotional intelligence and mental toughness in individual and team athletes, Master Thesis, Marmara University, Institute of Health Sciences, İstanbul, (in Turkish)

Rex, C.C. and Metzler, J.N. (2016). Development of The Sport İnjury Anxiety Scale. *Meas Phys Educ Exerc Sci*. 20(3): 146-58. [CrossRef]

Sarı, İ., Sağ, S. ve Demir, A.P. (2020). Mental Toughness In Sport: An Examınatıon In Taekwondo Athletes. *Journal of Physical Education and Sport Sciences*, 22(4): 98-110

Schwebel, D.C., Banaszek, M.M. and McDaniel, M. (2007). Brief Report. Behavioral Risk Factors for Youth Soccer (Football) İnjury. *J Pediatr Psychol*, 32: 411–416. [PubMed]

Sheard, M., Golby, J. and Van Wersch, A. (2009). Progress Towards Construct Validation of The Sports Mental Toughness Questionnaire (SMTQ). *European Journal of Psychological Assessment*, 25: 186-193. [CrossRef]

Shin, D. S. and Lee, K. H. (1994). A Comparative Study of Mental Toughness Between Elite and Non-Elite Female Athletes. *Korean Journal of Sport Science*, 6: 85-102.

Tanyeri, L. (2019). Investigation of Injury Anxiety in Different Branches Athletes. *International Journal of Society Researches*, 13(19): 577-591. DOI: 10.26466/opus.588668

Ünver, Ş., Şimşek, E., İslamoğlu, İ. and Arslan, H. (2020). Investigation of Injury Anxiety Levels of Athletes in University Teams. *Journal of Physical Education and Sport Sciences*, 14(3): 400-410.

Yarayan, Y. E., Yıldız, A.B. ve Gülşen, D.B.A. (2018). Examınatıon Of Mental Toughness Levels Of Indıvıdual And Team Sports Players At Elıte Level Accordıng To Varıous Varıables. / *The Journal of International Social Research*, 11(57): 1307-9581. [CrossRef]

Yıldız, A. B. (2017). Determination of relation between the mental toughness and of the self-efficacy levels of athletes. Master Thesis, Yıldırım Beyazıt University, Institute of Health Sciences, Department of Physical Education and Sport, Ankara, (in Turkish).