

# Competition analysis of World Greco-Roman and World free-style wrestling championships.

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## Abstract

*The aim of this study was to analyze the competitions of the 46<sup>th</sup> World Greco-Roman and in the 35<sup>th</sup> World Free-Style Championships, and to examine the technique values of the National Turkish Team as a case study. The Greco-Roman Championship was in the city of Patras in Greece at 6-9 December 2001. The Free-Style Championship was in Sofia at 21-25 December 2001. 334 Greco-Roman and 311 free-style fights were recorded and the analysis was done on these recordings. The pattern of winning, the finishing times, the technique numbers, the points and the passivity numbers of the whole and the classifying matches; the techniques that the Turkish Team used and applied were determined. For statistical analysis, ratio for one competition (ROC) for each parameter was calculated.*

*In these championships, most of the Greco-Roman and the free-style matches finished in official time and by points in all weight categories. Same status is validity for the Turkish team and the classifying matches. In the Greco-Roman wrestling, total 1317 techniques (R: 3.94) were applied and 2231 points (ROC: 6.67) were taken; 593 passivity (ROC: 1.77) and 114 tying salto (ROC: 0.34) were performed. In the free-style 1590 techniques (ROC: 5.11) were applied and 2376 points (ROC: 7.64) were taken; 296 passivity (ROC: 0.95) and 32 tying salto (ROC: 0.10) were performed. The Turkish Greco-Roman Wrestling Team applied 51 techniques (ROC: 2.42) took 84 points (ROC: 4.2) and exposed to 37 techniques (ROC: 1.76) gave 62 points (ROC: 3.1). The Turkish Free-Style Wrestling Team applied 70 techniques (ROC: 2.91) took 114 points (ROC: 4.75) and exposed to 53 techniques (ROC: 2.91) gave 73 points (ROC: 3.04). In the Greco-Roman and free-style classifying matches, respectively 54 (ROC: 3.37) and 66 (ROC: 4.12) techniques were applied; 88 points (ROC: 5.50) were taken in both style.*

*The most executed techniques were: gut wrench (29.62 %), tying salto (14.81 %) and counter to gut wrench (9.25 %) in the classifying Greco-Roman; leg tackle (36.36 %), gut wrench (16.66 %) and head drug (12.12 %) in the classifying free-style wrestling. The Turkish Greco-Roman Wrestling Team executed mostly gut wrench (33.33 %) and warning point (11.76 %); mostly exposed to gut wrench (21.62 %) and throw back (16.21 %). The Turkish Free-Style Wrestling Team executed mostly leg tackle (24.3 %) and gut wrench (20 %); exposed to mostly leg tackle (28.30 %), gut wrench (13.20 %) and double leg tackle (13.20 %).*

*Wrestlers chose to take points without risk, and to be successful it was necessary to take 8 points in Greco-Roman and 7 points in free-style for*

*one competition. To win a competition it's important to apply and not expose to a technique. The National Turkish Greco-Roman Team was unsuccessful to apply a technique. National Turkish Free-Style Team didn't wrestle as offensively as their successful rivals. The case study enabled an analysis of the performance of the team and recommendations to be made for improvements in future competitions.*

**Key Words:** *Wrestling, competition, analysis.*

## **1 Introduction**

Technical, tactical and physiological characteristics are just as important in wrestling as other sport disciplines. A combination of different components is necessary to reach a high performance (F.I.L.A., 1993; Niebel and Niebel, 1982). Accomplishments in wrestling can be by improvements of some criteria relevant to high performance, such as physical and physiological power, technical ability, mentality tactics, experience and motivation (Niebel and Niebel, 1982). Ability is so important and success is formed by combining ability with mentality and force (Pehlivan, 1984).

Education for at least 5 years, training, national experience and experience in international tournaments for 3 years were necessary to be successful in international area (Makaveev et al., 1978). The best wrestling characteristics can be defined by the technical and tactical analysis of the successful elite wrestlers in the Olympics, World and European Championships. The countries have to protect and pay attention to the wrestlers that have these characteristics. If trainers know the effective techniques and systems they can train their wrestlers better. Besides the physical and anthropometric characteristics, number and ratio of applied techniques in the competitions are important too. There is very little research published about this subject (Tunnemann, 2001).

This study is aimed to analyze the matches in the 46<sup>th</sup> World Greco-Roman and in 35<sup>th</sup> World Free-Style Championships, and to examine the technical performance of the National Turkish Team as a case study.

## **2 Methods**

The 46<sup>th</sup> World Greco-Roman Wrestling Championship was in the city of Patras in Greece, 6-9 December 2001, and the 35<sup>th</sup> World Free-Style Championship was in Sofia, 21-25 December 2001. In 8 weight categories, 242 Greco-Roman and 222 free-style wrestlers participated the Championships.

As many matches as possible, 334 Greco-Roman and 311 free-style matches were recorded and analysed. In addition 21 Greco-Roman and 24 free-style matches that the National Turkish Team performed were analyzed too. The way of winnings, the finishing times, the technique numbers, the points and the passivity numbers of the whole and the classifying matches; the techniques that the Turkish Team exposed to and applied were determined and signed on the competition analysis forms. For statistical analysis, ratio for one competition (ROC) for each parameter was calculated.

### 3 Results

**Table 1:** Way and Duration of Finishing Matches in the World Greco-Roman and Free-Style Wrestling Championship

Weight Categories	Way of Finishing Matches												Duration of Finishing Matches							
	Wrestlers' Numbers		Competition Numbers		Points		Touch		Technique Superiority		Referee Decision		Before 6 Minutes		Official Duration		Prolongation			
	GR	FS	GR	FS	GR	FS	GR	FS	GR	FS	GR	FS	GR	FS	GR	FS	GR	FS		
54kg	27	26	36	38	26	24	3	2	6	10	1	2	9	12	20	24	6	0		
58kg	37	33	51	44	35	34	3	2	11	8	2	0	14	10	32	30	3	4		
63kg	33	31	44	43	27	23	4	5	12	13	1	2	16	18	22	21	5	2		
69kg	28	32	39	46	30	30	1	3	8	8	0	5	9	11	24	27	6	3		
76kg	34	32	47	46	29	33	5	4	13	9	0	0	18	13	24	27	5	6		
85kg	29	24	42	32	30	25	5	2	6	2	1	3	11	4	26	22	4	3		
97kg	31	23	43	34	32	23	3	3	6	6	2	2	9	9	28	20	4	3		
130kg	24	28	32	28	24	12	5	6	3	8	0	2	8	14	20	9	4	3		
Total	242	222	334	311	233	204	29	27	65	64	7	16	94	91	196	180	37	24		
%					69,8	65,8	8,8	8,8	19,5	20,7	2,1	5,2	28,1	29,2	58,6	58,9	11,0	7,7		

**GR :Greco-Roman**

**FS: Free-Style**

**Table 2 :** Turkish Team Matches' and the Classifying Matches' Finishing Way and Duration

	Way of Finishing Matches								Duration of Finishing Matches							
	Matches	Points		Touch		Technique superiority		Referee Decision		Before 6 minutes		Official Duration		Prolongation		
	N	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
Turkiye																
GR	21	16 *10+6	76.19	2 1+1	9.52	2 1+1	9.52	1 1+0	4.76	5 3+2	23.8	14 9+5	66.6	2 1+1	9.52	
Turkiye																
FS	24	18 7+11	75	2 2+0	8.33	4 4+0	16.6	0	0	6 6+0	25	17 6+11	70,8	1 1+0	4.16	
Classifying																
GR	16	14	87.5	2	12.5	0	0	0	0	2	12.5	8	50.0	6	37.5	
Classifying																
FS	16	14	87.5	0	0	2	12.5	0	0	2	12.5	10	62.5	4	25.0	

\* First numbers are the winning matches and the second numbers are the losing matches of the Turkish team

**Table 3:** Number of Techniques and the Points in the Greco-Roman and Free-Style Wrestling

Weight Categories	Greco- Roman				Free-Style			
	Techniques		Points		Techniques		Points	
	Number	ROC	Number	ROC	Number	ROC	Number	ROC
54kg	152	4.22	276	7,66	214	5.63	340	8,94
58kg	201	3.94	384	7,52	244	5.54	346	7,86
63kg	197	4.47	281	6,38	232	5.39	348	8,10
69kg	181	4.64	253	6,48	228	4.95	331	7,20
76kg	144	3.06	317	6,74	249	5.41	379	8,23
85kg	146	3.47	280	6,66	149	4.65	221	6,90
97kg	188	4.37	265	6,16	158	4.64	221	6,50
130kg	118	3.68	175	5,46	116	4.14	190	6,80
<b>Total</b>	<b>1317</b>	<b>3.94</b>	<b>2231</b>	<b>6,67</b>	<b>1590</b>	<b>5,11</b>	<b>2376</b>	<b>7,64</b>

ROC: Ratio for one competition

**Table 4:** Passivity and Tying Salto Numbers According to Weight Categories

Weight Categories	Greco- Roman				Free-Style			
	Passivity		Tying Salto		Passivity		Tying Salto	
	Number	ROC	Number	ROC	Number	ROC	Number	ROC
54kg	57	1.58	14	0.38	36	0.95	5	0.13
58kg	75	1.47	13	0.25	48	1.09	3	0.06
63kg	60	1.36	10	0.22	35	0.81	4	0.09
69kg	72	1.84	14	0.35	36	0.78	1	0.02
76kg	96	2.04	20	0.42	41	0.89	6	0.13
85kg	89	2.11	14	0.33	25	0.78	3	0.09
97kg	74	1.72	17	0.39	46	1.35	6	0.17
130kg	70	2.18	22	0.68	29	1.03	4	0.14
<b>Total</b>	<b>593</b>	<b>1.77</b>	<b>114</b>	<b>0.34</b>	<b>296</b>	<b>0.95</b>	<b>32</b>	<b>0.10</b>

**Table 5:** The Technique, Point and Passivity Numbers of Turkish Team and the Classifying Matches

	Variables	Greco-Roman		Free-Style	
		Number	ROC	Number	ROC
Turkish Team Matches	Applied techniques	51	2.42	70	2.91
	Exposed techniques	37	1.76	53	2.20
	Taken points	84	4.2	114	4.75
	Loosen points	62	3.1	73	3.04
	Taken passivity	19	0.90	11	0.45
	Given passivity	18	0.85	20	0.83
	Tying salto	4	0.19	2	0.08
Classifying Matches	Applied techniques	54	3.37	66	4.12
	Taken points	88	5.50	88	5.50
	Total passivity	32	2.00	22	1.37
	Tying salto	8	0.50	5	0.31

**Table 6:** The Techniques in the Greco-Roman and Free-Style Classifying Matches

Techniques	Greco-Roman				Free-Style			
	Number of Techniques	%	Points	%	Number of Techniques	%	Points	%
Leg tackle	-	-	-	-	22	36.36	25	28.40
Gut Wrench	16	29.62	27	30.7	15	16.66	25	28.40
Double Leg Tackle	-	-	-	-	4	6.06	7	7.95
Throw Back	4	7.40	11	2.5	1	1.51	2	2.27
Head Drag	2	3.70	2	2.27	8	12.12	8	9.09
Warning Point	3	5.55	3	3.40	2	1.51	2	2.27
Arm Grab	2	3.70	2	2.27	1	1.51	1	1.13
Ankle Twist	-	-	-	-	2	3.03	3	3.40
Crotch Lift	-	-	-	-	2	3.03	4	4.54
Slip out	2	3.70	2	2.27	4	6.06	4	4.54
Tying Salto	8	14.81	8	9.1	5	7.57	7	7.95
Takedown by Waist Tackle	4	7.40	5	5.68	-	-	-	-
Counter to Gut Wrench	5	9.25	10	11.36	-	-	-	-
Shoulder Throw	4	7.40	9	10.22	-	-	-	-
Cravat	2	3.70	5	5.68	-	-	-	-
Counter to Shoulder Throw	2	3.70	4	4.55	-	-	-	-
<b>Total</b>	<b>54</b>	<b>100</b>	<b>88</b>	<b>100</b>	<b>66</b>	<b>100</b>	<b>88</b>	<b>100</b>

**Table 7:** The Techniques and the Points of the National Turkish Greco-Roman Wrestling Team

Techniques	Applied Techniques		Points		Exposed Techniques		Given Points	
	Number	%	Number	%	Number	%	Number	%
Gut Wrench	17	33.33	26	32.1	8	21.62	13	22.0
Warning Point	6	11.76	6	7.40	4	10.81	4	6.77
Suplex	5	9.80	15	18.5	2	5.40	4	6.77
Shoulder Throw	4	7.84	6	7.40	1	2.70	1	1.70
Crotch Lift	5	9.80	10	12.35	-	-	-	-
Head Drag	2	3.92	2	2.46	-	-	-	-
Arm Grab	2	3.92	2	2.46	2	5.40	2	3.40
Takedown by Waist Tackle	-	-	-	-	2	5.40	2	3.40
Hip Throw	-	-	-	-	1	2.70	3	5.1
Counter to Crotch Lift	-	-	-	-	5	13.51	9	15.3
Throw Back	2	3.92	2	2.46	6	16.21	12	20.33
Counter to Gut Wrench	5	9.80	8	9.9	1	2.70	2	3.40
Tying Salto	3	5.88	4	4.92	-	-	-	-
Slip out	-	-	-	-	4	10.81	4	6.77
Counter to Cravat	-	-	-	-	1	2.70	3	5.1
<b>Total</b>	<b>51</b>	<b>100.0</b>	<b>81</b>	<b>100</b>	<b>37</b>	<b>100.0</b>	<b>59</b>	<b>100</b>

**Table 8 :** The Techniques and the Points of the National Turkish Free-Style Wrestling Team

Techniques	Applied Techniques			Points		Exposed Techniques		Given Points	
	Number	%	Ratio	Number	%	Number	%	Number	%
Leg Tackle	17	24.3		22	19,3	15	28.30	19	26,02
Gut Wrench	14	20		26	22,8	7	13.20	11	15,06
Double Leg Tackle	7	10		11	9,64	7	13.20	9	12,32
Throw Back	4	5.71		12	10,5	3	5.66	9	12,32
Head Drag	9	12.9		9	7,89	3	5.66	3	4,11
Warning Point	-	-		-	-	3	5.66	3	4,11
Shoulder Throw	2	2.85		4	3,5	2	3.77	3	4,11
Takedown by Waist Tackle	1	1.42		1	0,87	1	1.88	1	1,37
Ankle Twist	4	5.71		8	7,02	1	1.88	2	2,74
Crotch Lift	2	2.85		4	3,5	1	1.88	2	2,74
Counter to Cravat	6	8.57		12	10,5	3	5.66	6	8,22
Counter to Gut Wrench	-	-		-	-	1	1.88	2	2,74
Slip out	2	2.85		2	1,8	1	1.88	1	1,37
Tying Salto	-	-		-	-	2	3.77	2	2,74
Arm Wrench - Half Nelson	1	1.42		1	0,88	-	-	-	-
Windmill	1	1.42		2	1,75	-	-	-	-
<b>Total</b>	<b>70</b>	<b>100</b>		<b>114</b>	<b>100</b>	<b>53</b>	<b>100.0</b>	<b>73</b>	<b>100</b>

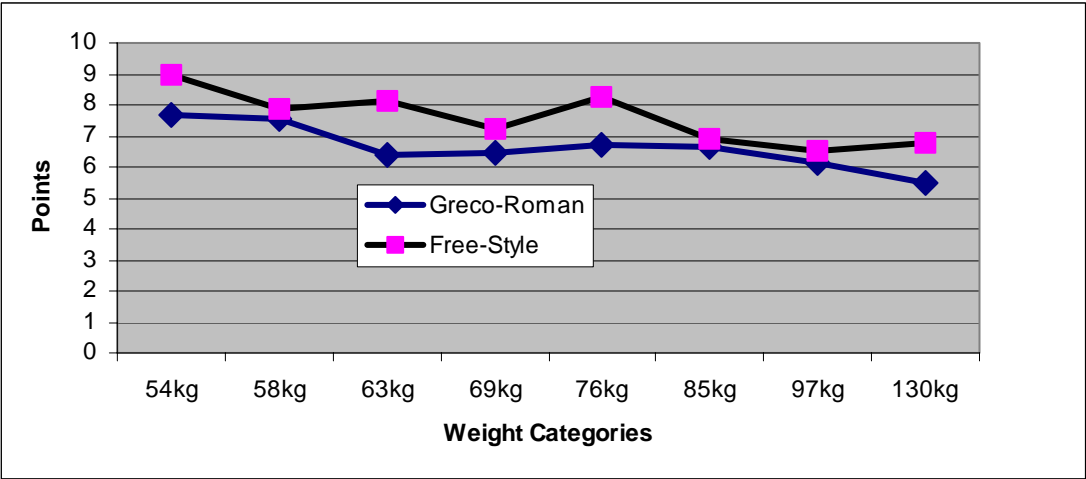


Figure 1: Points for one competition of Greco-Roman and Free Style Wrestling.

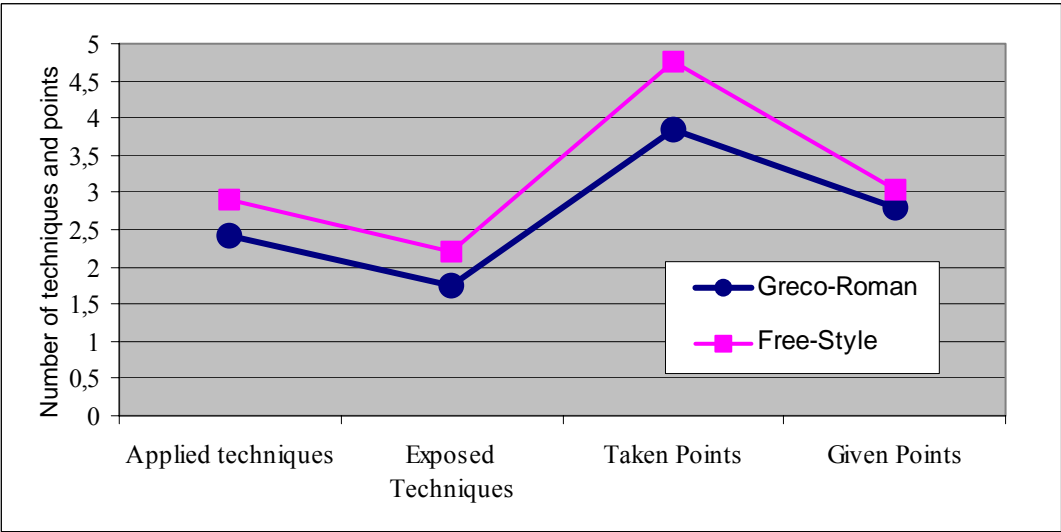


Figure 2: Techniques and points for one competition of National Turkish Team

#### 4 Discussion

In the 35<sup>th</sup> World Free-Style Wrestling Championship, the Russian Team took 4 gold medal and 1 bronze medal; Bulgarian Team took 2 gold medal and 1 silver medal. Russia was ranked 1, Bulgaria was ranked 2, USA was ranked 6 and Turkiye was ranked 13 at the end of the Championship. In the 46<sup>th</sup> World Greco-Roman Wrestling Championship, Russian Team took 1 gold medal and 2 silver medal; USA Team took 1 gold medal and 2 silver medal. Russia was ranked 1, USA was ranked 2 and Turkiye was ranked 12 at the end of the Championship.

242 wrestlers from 52 different countries participated the 46<sup>th</sup> World Greco-Roman Wrestling Championship and 334 matches were analyzed. 222 wrestlers from 47 different countries participated the 35<sup>th</sup> World Free-Style Wrestling Championship and 311 matches were analyzed. 58.68% of the Greco-Roman matches and 58.9% of the free-style matches finished in official time and by points (Table 1).

The National Turkish Greco-Roman Wrestling Team participated in 21 matches, they won 13 and lost 8 of these. They lost these matches by points; this shows that the Turkish wrestlers were not a lot weaker than their rivals. The National Turkish Free-Style Team participated 24 matches, they won 13 and lost 11 matches. In the Greco-Roman classifying matches, ratio of the outcome by points was increased with respect to the total (total 69.8% to 87.5%). A similar situation was seen in the free-style matches too (65.8% to 87.5%). An analysis of the finishing times in the classifying, showed that the matches were finished in prolongation more than the total in both styles (Greco-Roman total 11%, classifying 37.5% and free-style total 7.7% and classifying 25%). A similar analysis of the final matches yielded a ratio of winning by points and in prolongation that increased.

In the Greco-Roman Championship 1317 techniques were applied (ROC: 3.94) and 2231 points (ROC: 6.67) were taken. In the Free-Style Championship 1590 techniques (ROC: 5.11) were applied and 2376 points (ROC: 7.64) were taken. Tunneman (1993) determined that in the 40<sup>th</sup> European Greco-Roman Championship 1094 techniques (ROC: 4.3) were applied in 253 competition (Tunnemann, 1993b). Kolukisa (1994) determined that in the 36. European Freestyle Wrestling Championship 4.72 techniques were applied for one competition and total 1021 techniques were applied in 216 matches (Makaveev et al., 1978). In our study the number of techniques in the Greco-Roman style were found lower and in the free-style were found higher than these European Championships. According to Tunneman the quality of the matches increased in 2001 World Wrestling Championship. The technique points for one minute increased 38% in the free-style and 20% in the Greco-Roman style (Tunnemann, 2001).

In Barcelona Olympic Games, points ratio for one competition (ROC) of the first 6 countries were like this; Sweden 7.1, United Soviet Socialist Republic 5.1, Cuba 5.1, Hungary 4, France 3.7 and Poland 3.6 (Tunnemann, 1993a). In 17-18 age Yaşar Doğu International Free-Style Wrestling Tournament the points ratio for one competition were; Georgia 5.83, Türkiye 4.77, Azerbaijan 4.73, Ukraine 4.59 and Moldavia 4.59 (Imamoglu, 1994). One wrestler took 4-5 points for one competition and two wrestlers took total 9-10 points in Barcelona Olympic Games and in Yaşar Doğu Wrestling Tournament (Imamoglu, 1994; Tunnemann, 1993a). This shows that the total points that taken in these world championships decreased. This means that, the quality of the wrestlers was similar and the defensive wrestling became more successful in these championships.

In 1992 Barcelona Olympic Games 437 matches were performed. In these performances 549 techniques were "1 point technique" (ROC: 1.6), 390 techniques were "2 point technique" (R: 1.1), 260 techniques were "3 point technique" (R: 0.75) and 26 techniques were "5 point technique" (ROC: 0.07) (Tunnemann, 1993b). In this World Championships more techniques were applied than 1992 Barcelona Olympic Games. The reason of this could be the rule changes after this Olympic Games. According to the new rules, to finish the competition least 3 points have to be taken. For winning a competition to apply and not to expose a technique got more important.

The passivity number in Greco-Roman style was 1.77; the number of tying salto was 0.34 for one competition. In the free-style number of the passivity was 0.95 and the tying salto was 0.10 for one competition (Table 4). The number of passivity was high in Greco-Roman style.

The Turkish Greco-Roman National Wrestling Team applied 51 techniques and won 84 points. But they exposed to 37 techniques and gave 62 points to the rivals. The



Turkish Free-Style National Wrestling Team performed 24 matches and applied 70 techniques and took 114 points, exposed to 53 techniques and gave 73 points. The Turkish Greco-Roman team gave 0.83 passivity and took 0.90 passivity for one competition. They performed 4 tying salto and lost point only 1 of the 4. The Turkish Free-Style Team gave 0.83 and took 0.45 passivity for one competition. The free-style wrestlers performed 2 tying salto but lost 1 point in both (Table 5). In the 36. European Freestyle Wrestling Championship a total of 1501 points were taken in 216 matches and the passivity ROC was 1.52. In the same championship the Turkish team applied 2.60 techniques, took 3.66 points and 0.92 passivity for one competition (Kolukısa, 1994).

In the classifying Greco-Roman matches 3.37 techniques were applied, 5.50 points and 2 passivity were taken and performed 0.50 tying salto for one competition. In the classifying free-style matches 4.12 techniques were applied, 5.50 points and 1.37 passivity were taken and performed 0.31 tying salto (Table 5). The applied techniques and the taken points decreased but the passivity and tying salto numbers increased in the classifying matches than the total matches. This means, the wrestlers that wrestle in the classifying matches were more closely matched. These wrestlers were more careful and gave less points to their rivals.

In the Greco-Roman classifying matches the points were taken mostly by gut wrench (30.7 %), then tying salto and counter to gut wrench techniques. In the free-style classifying matches, the points were taken mostly by leg tackle (28.40 %) then gut wrench and head drug techniques (Table 6). The Turkish Greco-Roman Wrestling Team mostly applied gut wrench, warning point and exposed to gut wrench, throw back (Table 7). Turkish Free-Style Wrestling Team mostly applied the techniques of leg tackle, gut wrench, and exposed to leg tackle, gut wrench, double leg tackle (Table 8). Cuba, Iran, USA, Uzbekistan, Sweden and Armenia won point from 1997 to 2001 but Turkiye is among the countries that lost point. Iranian, Swedish, American, Russian and especially Armenian wrestlers' offensive techniques got better. Iranian, American and Swedish wrestlers' technique-tactic performance increased too (Tunnnemann, 2001). In the 2001 World Free-Style Wrestling Championship Russia, Bulgaria, and Iran were the most successful countries. Georgia, USA, Turkiye and Cuba were successful too. From 1997 to 2001 among nations the highest performance increase ratio was seen in Bulgaria, Georgia, Hungary, Mongolia and Slovakia (Tunnnemann, 2001). The total points taken by Turkiye slightly decreased but the effective offensive techniques were increased. In general, as the effective offensive techniques increase the wrestler can be expected to be successful, but in this championship Turkish wrestlers couldn't be successful among the best wrestlers of the world.

## 5 Conclusion

Wrestlers chose to take points without risk, and to be successful it was necessary to take 8 points in Greco-Roman and 7 points in free-style for one competition. To win a competition it is important to apply and not expose oneself to a technique. The National Turkish Greco-Roman Team was unsuccessful in the applications of technique. The National Turkish Free-Style Team didn't wrestle as offensively as their successful rivals. For the coming championships; it's necessary to train right and left offensive and defensive techniques. According to the offensive or defensive position, advantages and disadvantages of the techniques have to be taught to the wrestlers. The trainers can

regulate the wrestlers' training programs by considering the techniques used by the elite in general, and in particular the semifinalist and champion wrestlers in the championships.

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