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The Correlatıon between Mental Toughness and Goal Orıentatıon of Elıte Wrestlers

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Abstract

This study examined the correlation between mental toughness and goal orientation of elite wrestlers. A total of 50 wrestler (age=20.22±2.98) were participated in the study. In the study; "Task and Ego Orientation Scale in Sport Questionnaire" developed by Duda and Whitehead (1998) used to determine goal orientation levels. "Sport Mental Toughness Questionnaire (MTTQ)" developed by Sheard et. al (2009) used. Also, a personal information form used that prepared by the researchers. Descriptive, relational and comparative model were used in the article. In the analysis of the data, Spearman correlation coefficient was applied in the article. Also, Mann-Whitney U test used to comparisons. Wrestlers found a moderate negative correlation between age variable and control scores of the mental toughness scale ($p<0.01$). A positive correlation was found between task orientation scores of the goal orientation scale and the confidence ($p<0.01$) of the mental toughness scale and the continuum ($p<0.05$) scores. A low-level positive correlation was detected between the ego orientation score of the goal orientation scale and the confidence scores of the mental toughness scale ($p<0.05$). A significant difference was found between wrestlers age variable scores and control scores of the mental toughness scale ($p<0.05$). As a result, the correlation between mental toughness and goal orientation is important for elite athletes. As the age of elite wrestlers' increases, their concerns appear to increase in the face of unexpected or uncontrollable events.

Keywords: Mental Toughness, Goal Orientation, Wrestling, Elite Athlete

Introduction

In order for the athletes to compete at the elite level, they must demonstrate regular physical, technical and tactical development throughout the process. In addition, it is reported that athletes should not have physical and mental problems such as sports injuries and overtraining in order to reach high performance levels. (Maffulli et al., 2013; MacKinnon, 2000; Rugg et al, 2018; Uluöz, 2016a, 2016b). Athletes who reach the competition level, gain awareness that performance is not only affected by physical skill in a short time (Bhambri, Dhillon & Sahni, 2005).

Today's coaches and athletes realized the fact that the competition process is difficult, and the winning process fits within a narrow time frame although the athletes have technical, tactical and physical abilities. With the increase in the quality standards of the competitions and the increase in institutional expectations, the pressure on the athletes increased. However, the stress level of athletes also increased and psychological performance has become an important element of success in this field. According to Hardy, Jones and Gould (1996) and Weinberg (1992), athletes have increased their interest in how to cognitively strengthen to cope with these factors. They are focused on developing their psychological skills such as visualization, goal setting and relaxation, both to realize their potential and to increase their performance. Gould et. al (2002) showed that Mental Toughness is one of the basic elements of success in sports in their studies with Olympic champions. It has been determined that champions are successful in important psychological features such as stress management, Mental Toughness, self-confidence, and focus. Erdogan and Kocaekşi (2015), who reached the same results with this study, emphasized the importance of the presence of Mental Toughness in athletes. Jones, Hanton and Connaughton (2007) defined Mental Toughness as the ability to deal with negativity, stress, oppression, failure and misfortunes, avoid giving up and staying under stress. Thelwell, Weston and Greenlees (2005) described this concept as natural or developable. They emphasized that individuals with high performance in this regard have the ability to react positively to negative standards encountered in sports or different life conditions, to ignore the factors that cause distraction and to maintain calm in high pressure environments.

Mental Toughness often represents a number of psychological factors to be used to maintain successful performance in adverse environments (Clough et.al. 2002). It is an area with difficult conditions that includes many concepts such as stress, failure and problems in sports. For this reason, the Mental Toughness should be kept as high as possible in order to enable the athletes to perform high or to recover quickly after a difficult situation. Gould et. al (1987), reached the conclusion that the most important factor for success in 82% of the participants is Mental Toughness in their study conducted with wrestling coaches. However, Mental Toughness has been defined not only as a valid concept in negative situations, but also as a versatile concept (Crust, 2008). Weinberg and Gould (2015) found that the player who used the free throw at the last minute in a basketball game, believed that he had friends and family among the audience during the time-out and experienced the stress of this, was not accurate. In summary, cognitive and emotional factors are above the physical and technical sides of performance. In order to have strong cognitive skills, athletes must have high Mental Toughness values (Weinberg and Gould, 2015).

One of the concepts associated with Mental Toughness is goal orientation (task-ego orientation). Kuan and Roy (2007) evaluated the Mental Toughness they determined with the "Psychological Performance Inventory" according to the goal orientation (task-ego orientation) of the athletes. As a result of this study, they reported that the athletes with high

task and moderate ego levels achieved higher scores in the imagination, negative energy control, motivational control, positive energy control and attitude control sub-dimensions as a result of this study (Kuan and Roy, 2007). Similar to this study Kuan et. al (2007), conducted a study with 203 athletes, and results showed that athletes with high task-high ego and high task-medium ego orientation have high Mental Toughness scores. In this context, one of the concepts thought to have an impact on Mental Toughness is the goal orientation of athletes.

The pioneers of the goal orientation concept, Nicholls (1984) and Duda (1988) have focused on the cognitive dimension in this approach. In this context, the existence of two independent dimensions within the goal orientation in sports has been reported. In sport, the first goal-oriented perspectives are *task-oriented goals*, and the second is *ego-oriented goals*. According to Duda and Nicholls, ego orientation; goals that refer to others in the sport, such as doing better than others (competitors or teammates), more attention (self-disclosure) and ranking higher than others (what they see as competitors).

Task orientation, on the other hand, expresses the goal orientation "one refers to himself", such as doing better than his previous performance, learning new things and mastering a task (Duda and Nicholls 1992). These two goal orientations are related to the skill level of the athlete (Toros and Yetim, 2000). Task orientation and ego orientation determine the goal orientation exhibited by the athlete to the extent that these dimensions are present in each athlete (Jagacinski and Nicholls 1984). In the athlete of two independent dimensions, task and ego oriented; goal high-ego high, goal high-ego low, goal low-ego high, goal low-ego low. Accordingly, the degree of having athletes' task and ego goal orientation requires a certain assessment of life and judgment (Toros, 2002). The individual, who has task-oriented goals, focuses on learning new skills and hard work (Toros, 2001). Task-oriented sportsman behavior tends to believe that talent will be demonstrated through development and effort (Murcia et. al., 2008). So in order to be successful, the athlete must work hard and make the best effort he can. At the same time, it is intuitive that a task-oriented athlete seeks a sense of inner satisfaction during the success process. This sense of satisfaction may be proportional to the amount of effort exhibited and the amount of development compared to the past (Toy, 2015).

An ego-oriented athlete believes that success can be achieved by proving his superior ability and defeating his opponents (Kocaeşki, 2010). These athletes want to be successful in demonstrating their abilities, the tasks to be accomplished, to demonstrate their ability, and to show how good others are (Elliot, 1999). The purpose of the behavior or movement applied by the athlete; show their own abilities associated with the abilities of others (Bruin, et. al. 2009). Ego-oriented behaviors to be carried out by the athlete in a work environment with high team concussion compared to ego-oriented behaviors can separate the athlete from the team, conflicts between other members of the team and the athlete may be expected, and even athletes with ego-oriented behaviors may be excluded. Athletes exhibiting ego-oriented behaviors may experience great traumas after finding their performance as failing in important competitions despite the conduct of rules or illegal behaviors and may even find excuses that can completely break away from sports (Toy, 2015). Task and ego-oriented goals can be said to be related to how the athlete judges (evaluates) his talent (Toy, 2015).

The interest of the researchers working in the field of sports psychology, which is one of the important issues, is that the goal orientation and mental toughness issues were examined in terms of the wrestling branch. In Turkey, the studies regarding mental toughness and goal orientation is discussed in terms of a limited number of sports. It is thought that the determined results will be beneficial for the researchers in this field.

Materials and Methods

Participants

The wrestler research group consists of elite athletes who are in the Istanbul metropolitan sport club and provide their economic livelihood from its sports club. The research group is composed of 50 wrestlers who were engaged in professional wrestling sport (located in the participating teams and national championships in Turkey) in Istanbul metropolitan sports club.

Research Model

In this study; elite wrestlers' task orientation and ego orientations and Mental Toughness; differences and correlation were investigated by examining the variables of age, educational status, sports experience, and being elected to the national team. In this study were used descriptive, relational and comparative model.

In this study, demographic information form, Mental Toughness scale, and goal orientation scale were applied to freestyle and Greco-Roman wrestlers. Within the scope of the model; correlation tables for the Mental Toughness and goal orientation scales were prepared and interpreted. On the basis of the comparative model; the demographic data were tested to see whether there was a significant difference in the goal orientation (task orientation and ego orientation sub-dimensions) and Mental Toughness (control, confidence and continuity sub-dimensions) scales.

Data Collection Tools

Data collection tools consist of following scales;

1. Demographic Information Form: This form includes the following information received from the wrestlers: Age, sports experience, educational status, and the status of being selected to the national team.

2. Mental Toughness Scale: Mental Toughness Inventory in Sports: To determine the Mental Toughness of athletes, Sheard et. al. (2009), and adapted to Turkish by Altıntaş (2015). Inventory consisting of 14 questions determining the sub-dimensions of trust (1, 5, 6, 11, 13, 14), continuity (3, 8, 10, 12) and control (2, 4, 9, 7), and information about total Mental Toughness. In order to determine the level of participation in the questions asked in the inventory, a 4-point Likert-type (completely wrong, wrong, correct, completely correct) evaluation is made. The scale also includes reverse scored questions (2, 4, 7, 8, 9, 10) (Altıntaş, 2015).

3. Task and Ego Orientation in Sport Questionnaire, – SGEYÖ (Task and Ego Orientation in Sport Questionnaire, Duda ve Whitehead, 1998) was developed by Duda and Nicholls in order to reveal individual differences in goal setting. Task and Ego Orientation Scale in Sport includes 13 items and 2 sub-scales in which the evaluation is made according to 5 levels. These subscales are; task orientation and ego orientation. The validity and reliability study of the scale for Turkish athletes was done by Toros (2001). In the study of Toros (2001), the Cronbach alpha value is 0.87 in the “task orientation” subscale. The internal consistency coefficient was found as 0.85 in the "ego orientation" subscale. In general, the reliability coefficient of the scale was determined as 0.86. (Toros, 2001).

Data Analysis

22 packages in SPSS program were used to analyze the demographic data, goal orientation and Mental Toughness, which constitute the main variables of the research. It has been

checked whether the data was entered correctly or not. All variables were evaluated separately using the central distribution and variability criteria. Correlations between variables were examined by Spearman correlation analysis. Mann Whitney-U test was used in the comparison of two groups. The findings were interpreted in the light of theories and research in the literature.

Findings

Table 1. Demographic variables of participants (n / %).

Variables		n	%
Age	20 years and under	28	56,0
	21 years and above	22	44,0
Education Level	High School	22	44,0
	University	28	56,0
Experience Time	6 year and under	14	28,0
	7 year and above	36	72,0
National Team Level	Young National	35	70,0
	National	15	30,0

Table 1 shows the frequency analysis distribution for variables of age, education level, duration of experience and national team level.

Table 2. Descriptive analysis for Goal Orientation and Mental Toughness scales sub-dimensions.

Sub-dimensions		n	min.	max.	$\overline{X}$	SD
Goal Orientation	Goal Orientation	50	2,00	5,00	3,574	,768
	Ego Orientation	50	1,50	5,00	3,308	,820
Mental Toughness	Confidence	50	1,00	4,00	3,150	,676
	Continuity	50	2,50	4,00	3,650	,426
	Control	50	3,00	4,00	3,630	,414

Table 2 shows the frequency analysis distribution for the task orientation and goal orientation, which are the sub-dimensions of the Goal orientation scale, and the confidence, continuity, and control sub-dimensions of the Mental Toughness scale.

Table 3. Spearman Rank Difference Correlation Analysis Results to Determine the Correlation between Goal Orientation Scores and Mental Toughness Scores

n=50	Age	Education	Experience Year	Nationality Level	Task	Ego	Confidence	Continuity	Control
Age	1	,542** ,000	,553** ,000	,475** ,000	,074 ,609	-,115 ,427	,113 ,435	,059 ,682	-,368** ,009
Education	**,542** ,000**	1	,704** ,000	,404** ,004	-,004 ,977	-,049 ,735	,004 ,977	-,018 ,902	-,245 ,086
Experience Year	**,553** ,000**	**,704** ,000**	1	,311* ,028	-,029 ,839	-,023 ,873	-,012 ,931	-,104 ,474	-,266 ,062
Nationality level	**,475** ,000**	**,404** ,004**	**,311* ,028**	1	-,105 ,470	-,215 ,133	,214 ,136	-,014 ,920	-,124 ,392

Confidence	,113 ,435	,004 ,977	-,012 ,931	,214 ,136	**,471**** **,001**	**,322*** **,023**	1	,430** ,002	,104 ,471
Continuity	,059 ,682	-,018 ,902	-,104 ,474	-,014 ,920	**,301*** **,033**	-,053 ,712	**,430**** **,002**	1	,399** ,004
Control	- **,368**** **,009**	-,245 ,086	-,266 ,062	-,124 ,392	-,175 ,223	-,180 ,211	,104 ,471	**,399**** **,004**	1

In Table 3, as a result of the Spearman Rank Differences Correlation analysis conducted to determine the correlation between the variables, the scores between the age variable and education level, years of experience and nationality level shows statistical positive correlation level that is equal (p <.05). However, a negative correlation was found between age variable and control sub-dimension of mental Toughness Scale that is equal (p <.05). A statistically significant positive correlation was found between the Task orientation sub-dimension, which is the sub-dimension of the goal orientation, and the confidence and continuity sub-dimensions of mental toughness scale (p <.05). There was found a statistically significant positive correlation between ego orientation sub-dimension and confidence sub-dimension (p <.05). A statistically significant positive correlation was found between the confidence sub-dimension and the continuity sub-dimension (p <.05). There was a statistically significant positive correlation between the continuity sub-dimension and the control sub-dimension (p <.05).

Table 4. Goal Orientation Scale and the Mental Resistance Scale Scores

	Groups	**n**	$\overline{X}$	**Total Rank**	*U*	*p*
Goal	20 Years and Under	28	24,55	687,50	281,500	,604
	21 Years and Above	22	26,70	587,50		
Ego	20 Years and Under	28	26,96	755,00	267,000	,422
	21 Years and Above	22	23,64	520,00		
Confidence	20 Years and Under	28	24,07	674,00	268,000	,429
	21 Years and Above	22	23,72	601,00		
Continuity	20 Years and Under	28	24,79	694,00	288,000	,677
	21 Years and Above	22	26,41	581,00		
Control	20 Years and Under	28	29,88	836,50	185,500	**,010***
	21 Years and Above	22	19,93	438,50		

In Table 4, it was found that there is no significant difference in the task sub-dimension, ego sub-dimension, confidence sub-dimension and continuity sub-dimensions of the athletes by age variable. However, a significant difference was found between the control averages of athletes aged until 20 years old (includes 20 years old), and 21 years old (includes 21 years old) and older in terms of age variable (U=185.500, p<.05).

Table 5. Difference between the Goal Orientation Scale and the Mental Resistance Scale **Scores.**

	Groups	n	$\overline{X}$	Total Rank	*U*	*p*
Goal	6 Years and Under	14	26,18	366,50	242,500	,837
	7 Year and Above	36	25,24	908,50		
Ego	6 Years and Under	14	26,04	364,50	244,500	,871
	7 Year and Above	36	25,29	914,50		
Confidence	6 Years and Under	14	25,79	361,00	248,000	,930
	7 Year and Above	36	25,39	914,00		
Continuity	6 Years and Under	14	27,75	388,50	220,500	,469
	7 Year and Above	36	24,63	886,50		
Control	6 Years and Under	14	31,21	437,00	172,000	,063
	7 Year and Above	36	23,28	838,00		

In Table 5, was found that there was no significant difference in the task sub-dimension, ego sub-dimension, confidence sub-dimension, continuity sub-dimension and control sub-dimension scores of athletes according to years of experience (p>.05).

Table 6. Difference between the Goal Orientation Scale and the Mental Toughness Scale Scores According to the Level of Education

Education Level	Groups	n	$\overline{X}$	Total Rank	*U*	*p*
Goal	High School	22	25,57	562,50	306,500	,977
	University	28	25,45	712,50		
Ego	High School	22	26,30	578,50	290,500	,732
	University	28	24,88	696,50		
Confidence	High School	22	25,43	519,50	306,500	,976
	University	28	25,55	715,50		
Continuity	High School	22	25,77	567,00	302,000	,901
	University	28	25,29	708,00		
Control	High School	22	29,20	642,50	226,500	,086
	University	28	22,59	632,50		

In Table 6, there was no significant difference in the task sub-dimension, ego sub-dimension, confidence sub-dimension, and continuity sub-dimension and control sub-dimension scores of the wrestlers according to the educational status variable (p > .05).

Table 7. Difference between the Goal Orientation Scale and the Mental Toughness Scale Scores According to the National Athlete Category Level

Nationality Level	Groups	n	$\overline{X}$	Total Rank	*U*	*p*
Goal	Young National	35	26,49	927,00	228,000	,464
	Senior National	15	23,20	348,00		
Ego	Young National	35	27,53	963,50	191,500	,132
	Senior National	15	20,77	311,50		
Confidence	Young National	35	23,50	822,50	192,500	,134
	Senior National	15	30,17	452,50		
Continuity	Young National	35	25,63	897,00	258,000	,919
	Senior National	15	25,20	378,00		
Control	Young National	35	26,59	930,50	224,500	,386
	Senior National	15	22,97	344,50		

In Table 7, was found that there was no significant difference in the task sub-dimension, ego sub-dimension, confidence sub-dimension, continuity sub-dimension and control sub-dimension scores of the athletes according to the Nationality level variable and the status variable ($p>.05$).

Conclusion

Findings about the correlation between elite wrestlers' goal orientation and Mental Toughness scores were discussed within the framework of research purposes.

In the results of the research, a significant difference was found in the control sub-dimension of Mental Toughness scale according to the age variable of the wrestlers. According to the results of the binary group comparisons that made to determine between which groups the meaningful differences emerged as a result of the analyzes made; According to athlete groups between the ages of 21 and over, was found a significant difference in Mental Toughness levels that showed better results of athletes aged between 20 and under. However, in the control sub-dimension of the wrestlers' Mental Toughness scale, it is observed that their Mental Toughness levels decrease as their ages increase. Also, Crust et. al (2014) states that age is an important factor in determining the level of Mental Toughness that is in positive correlation with the results of our research. In contradiction with our research, Marchant et. al. (2009) and Nicholls et. al (2009) also found that Mental Toughness increases or decreases in by age factor. In another study, Crust (2009) found that there was no correlation between Mental Toughness and age factor. Gürer (2015) emphasized that characteristics of mountaineering sports, such as decision making and problem-solving skills, are important in a study. Accordingly, it can be said that the Mental Toughness scores decrease as the age factor increases, the athletes are not controlled and comfortable in sports that require intense physical and Mental Toughness, not being under pressure or unexpected conditions.

There was no statistically difference between the Mental Toughness sub-dimensions according to the duration of wrestling athletes' experience variable. In the study conducted by Dede (2019) can be observed similarity with the results of this paper research, it was found that there is no difference according to the experience period of elite wrestlers. However,

Crust (2009) found in his research that there is no correlation between Mental Toughness and duration of athletes' experience variable.

It was observed that the level of Mental Toughness of elite wrestlers did not differ from the nationality level variable. In contrast to the results of this paper research, Konter (2015) found that the results of his study with professional footballers show that footballers who cannot be selected to the national teams have a higher level of Mental Toughness than those chosen for the national team.

Considering the results of statistical analysis regarding whether the Mental Toughness levels of elite wrestlers differ according to their educational status; no statistically difference was found between subscales of Mental Toughness scale. Considering the literature, unlike the results in our study; Crust et. al. (2014) stated that education and Mental Toughness are in parallel proportion. In another study by Fisher and Hood (1987) revealed that the level of education should be increased in order to increase Mental Toughness.

There was no correlation between the ego and task orientation sub-dimensions (of the wrestlers participating in the research) and the age variable. This paper research found out overlap with the studies in the literature. In a study of 317 wrestlers, no difference was found between the age variable and goal orientation sub-dimensions of Freestyle and Greco-Roman style wrestlers (Toy, 2015). The paper written by Toros shows no difference between the ego and task orientation subscale of the elite and non-elite basketball players and the age variable (Toros, 2001). In another study written by Üngür was mentioned that there was no difference between the age variable and the goal orientation in the research results, which examined the correlation between goal orientation in amateur and professional football players (Üngür, 2009). In addition, there are studies that differ from this paper research results. Flores et. al (2008) observed a decrease in the perceptions of Colombian athletes perceptions of ego goal orientations, learning perceptions, and performance orientations in the physical education lessons and motivational climate perceptions (Flores, et. al 2008). In Flores research was found no difference between the goal orientation scores in terms of the experience level variable of elite wrestlers. When this paper research results are compared with the literature, there are similar and opposite results. In the research written by Toy (2015) mentioned that there is no difference between the task orientation sub-dimension of freestyle wrestlers and the experience variable of the ego orientation sub-dimension. However, there is a significant difference in terms of experience variable and task orientation subscale scores of Greco-Roman style wrestlers. In terms of freestyle wrestlers, there is no difference between experience variable and task orientation scores (Toy, 2015). In the research results by Üngür (2009), was found out that goal orientation has no effect on the variable of experience in amateur and professional football players (Üngür, 2009). However, Fernandes et. al. states that there is a positive correlation between Alpinist mountaineers' ages of sports experience and task orientation levels (Fernandes et. al. 2009). In another study by Toros is written that elite basketball players have a negative correlation between the athletes experience and their goal orientation, and as the age of elite athletes increased with their sports age, their ego orientation decreased. In non-elite athletes groups, mentioned that as the age of athletes experience increases, the task orientation increases (Toros, 2001). Under literature researching, Kristiansen et. al. (2008) stated that experienced wrestlers prefer the task orientation behavior, and they show a positive harmony towards staying and competing by maintaining their strategies to deal with stress (problem oriented and emotion oriented) (Kristiansen et. al. 2008). Basketball sportsmen research mentioned no observed differentiation in the task and ego orientations of elite and non-elite basketball players (Toros, 2001). Duda found out the conclusion that athletes with high task orientation (recreational)

continue their chosen sports (experienced winners) for a longer period of time (Duda, 1992). In another study, college and university athletes compared younger and recreational sports individuals stated that high school boys exhibit lower task orientation (White and Duda, 1994). So, there is no difference in terms of education level of elite wrestlers participating in the research. This paper research results correspond with the literature studies. In a comprehensive study conducted in 2015, there is no difference in terms of education level variable of Free style and Greco-Roman style wrestlers and ego orientation and task orientation scores (Toy, 2015). In the research results found out by Üngür of football players mentioned that educational status variable does not have an effect on goal orientation on amateur and professional football players (Üngür, 2009).

According to Toy (2015) there is no difference in terms of the nationality of elite wrestlers participating in the research. Although research works of similar papers are limited in the literature in this area, possible to observe matching in this paper results. By Toy paper (2015), there is no difference in terms of the nationality variable of Freestyle and Greco-Roman wrestlers and ego and task orientation subscale scores. Also, in Toy's paper mentioned no difference in Free style and Greco-Roman style. Also, there is no difference (in wrestlers in this paper research group) in term of nationality variable, ego and task orientation scores (Toy, 2015). According to Potgieter and Steyn, the task oriented athletes have better psychological resilience than ego oriented athletes in succeed or failure matches (Potgieter and Steyn, 2010).

As a result of this study is statistical positive correlation between the age variable of the wrestlers participating in the research and the level of education, years of experience and nationality. However, negative correlation was found between the age variable and the control sub-dimension. Statistical positive correlation was found between the task orientation sub-dimension, which is the sub-dimension of the goal orientation, and the sub-dimensions of Mental Toughness, the confidence and continuity sub-dimensions. Statistical positive correlation was found between the ego orientation sub-dimension and the confidence sub-dimension. Statistical positive correlation was found between the confidence sub-dimension and the continuity sub-dimension. Statistical positive correlation was found between the continuity sub-dimension and the control sub-dimension.

So, results of this paper show that wrestlers who are younger have high control scores. It shows that younger wrestlers are worried about unexpected or uncontrolled situations. In other words the confidence of task-oriented wrestlers has increased and they have high expectations that they can overcome long-term hard situations.

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