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THE EVALUATION OF MENTAL ABILITIES OF ATHLETES IN DIFFERENT BRANCHES

Mehmet Şirin Güler[i], **Süleyman Erim Erhan**
[1]Asst. Prof., Kafkas Üniversitesi,
Sarıkamış Beden Eğitimi ve Spor Yüksekokulu,
Kars, Turkey
[2]Asst. Prof., Atatürk Üniversitesi,
Spor Bilimleri Fakültesi,
Erzurum, Turkey

Abstract:
This paper aims to evaluate the levels of mental ability of licensed athletes who are actively engaged in sports at branch level in Turkey. A total of 340 athletes, including 116 women and 224 men, from various regions of Turkey who are actively engaged in sports at elite level in different branches voluntarily participated in the survey which evaluates their levels and techniques of mental training. It was considered important that athletes participated in the survey should be licensed and importance of the study was emphasized to them. The survey model was used in this study. Current information related to research problem was systematically given by scanning of relevant literature, so a theoretical framework on the subject was created. First of all, a twelve-question personal information form developed by researcher was applied. Ottawa Mental Skills Assessment tool (OMSAT-3) which is developed by Durand-Bush, Salmela and Green-Demers (2001) and adapted to Turkish language by Erhan, Güler, Ağduman and Gerek was applied to evaluate the levels of athletes' mental ability. In the adaptation phase, the scale was applied to 220 athletes and internal consistency value was found to be 0.94. The scale consists of 48 items and 12 subscales and these subscales are evenly divided into four items. The scale consists of a total of 48 items and constructed on a 7-point Likert-type. The scoring was formed from 1 to 7 according to the statements, "Strongly disagree", "Disagree", "Slightly disagree", "Neither agree nor disagree", "Agree", "Slightly agree" and "Strongly agree". Frequency Analysis was

[ii] Correspondence: email mehmet0910@hotmail.com

applied to determine the demographic characteristics of participants and Shapiro-Wilk Test was applied in order to decide whether the questionnaires are suitable to normal distribution and Mann-Whitney U test was applied in order to determine the dimensions according to parameters such as gender, marital status, and type of sports, level of contact and level of sport. Kruskal-Wallis H test was applied for analysis of the dimensions in terms of age, sports age and educational level. Finally, correlation analysis of Spearman was used in order to determine the relation between sub-dimensions of total satisfaction score. The significance level ($p<0.05$) was accepted in analysis. As a result, there is a significant difference in mental ability dimensions of active athletes in different branches according to their mental ability levels and variables such as age, type of sports, sports level and sports age. Therefore, it is observed that mental ability levels of athletes in different branches vary according to these variables.

Keywords: mental ability, sports, mental development

1. Introduction

It is clear that hereditary factors, capabilities and skills and environmental issues play a key role in terms of success of sporting activities. However, these factors are not enough alone to achieve success (S. Erim and et al., 2006). The studies which carried out prove that success in sports could not be correlated with only one reason. The reasons behind the success of sports activities have generated interests of many researches who have already tried to put their points of view forward. Many researchers correlate the reasons behind the success with motoric reasons. However, today's modern researches draw attention to a different point and reveal that mental factors are also important as well as motoric reasons. In addition to this, when the relevant literature is analyzed, researches on mental factors are observed as insufficient; and this absence is felt much more in our country.

Although there are many studies related to the discovery of mental abilities, it is obvious that these studies are not used enough for the purpose in our country. Many studies are carried out in terms of dimensions of mental ability and terminological expressions which have been used as follow.

- Goal setting: It is a kind of targeting of goals and objectives that provide motivation and guidance (Burton, 1993).
- Self-confidence: It refers to an individual's belief in her ability and purpose (Vealey, 1986).

- Tenacity: It is defined as individual's concentration and commitment on his goals (Orlick, 1992).
- Stress: It includes one's reactions in response to the requests (Selye, 1974).
- Fear Control: It is an ability to cope with factors and situations causing anxiety and fear (Rotella & Lerner, 1993).
- Relaxation: It makes possible to reduce individual's psychological concern, tension and anxiety level (Williams & Harris, 1998).
- Revitalization: It is a process which raises individual's physiological and mental situation in case of need that individual should increase her energy, motivation and concentration (Zaichkowsky & Takenaka, 1993).
- Focusing: It is an ability that individual can direct and maintain her attention to her purposes (Nideffer & Sagal, 1998).
- Re-focusing: It is an ability to regain effective attention when it is distracted (Orlick, 1992).
- Imagination: It includes the use of feelings and ideas to stimulate different situations in mind (Murphy & Jowdy, 1992).
- Imagination in Mind: It is a process that athlete rehearses her physical abilities and the play in her mind without clearly moving her body clearly (Murphy & Jowdy, 1992).
- Action Planning: It refers to a Planning which guides the ideas, feelings and actions before, during and after a competition (Orlick & Partington, 1998).

The discovery of mental factors in sporting activities is become possible with education of athlete's skill and talent-related actions. The requirement of imaging in mind and placing individual's conscious of these educated actions reveal the concept of requirement of mental training. Therefore, definition of this concept is quite important (S. Erhan and et al., 2015).

The early studies on the concept of mental training were held in the Soviet Union and East Germany in the 1950s. Especially in East Germany, athletes were motivated by mental trainings and they gained important achievements in the 1976 Summer Olympics (Aktepe, 2006). The success that East Germany enjoyed was attracted by other countries and thus, other countries have also been begun to research the techniques of mental training. The research by Dr. Ikai and Dr. A. H. Steinhaus (1961) reveals that athletes, who were hypnotized and preached by emphasizing that they are so strong and they can use this power to the end, can lift more than 30% weight in terms of their highest level of power while in a hypnotized situation. Therefore, Dr. Ikai has revealed the importance of mental factors alongside of physiological factors.

Mental training involves various strategies according to the characteristics of sport and athletes. The different strategies such as confidence, relaxation, motivation,

goal setting and concentration are applied by considering especially individual differences and the needs of athletes (Altıntas and Akalan, 2008). Mental training can complete athletes' training, help to increase their performances and contribute to make them more productive. Mental training can help to solve problems that many athletes face with, such as anxiety, inability to concentrate, inability to relax, facing with oppression and preventing and contain practices to increase the performance (Syer ven Connolly, 1998).

Koruç defines mental training as planned and intensively imaging of action that may arise against positive or negative situations during training and competition whether the mentioned action is practical. Body is obliged to obey the orders given by the brain during conscious action. In other words, mental training is defined as being mentally ready against such situations and prepared to wait for cases to occur on consists of real competitions (Koruç, 1990). Mental training is also defined "*imaging of action in mind before realization*" (Hecker and Kaczor, 1988). More clearly, mental training is an insensitive effort to acquire in mind before practicing the action.

Konter defines mental training as development of well-known movement for a particular purpose by only using of mind before physical action or learning of a new movement (Konter, 1999).

Mental training which is a systematic and programmed process consisting of being motivated to achieve high performance, being concentrated, focusing attention, goal setting, self-confidence, positive thinking and emotion, learning and development of self-control and such psychological abilities, has a vital role in sport activities (Neff, 2010) Due to the priorities, this concept has attracted the attention of researchers.

Anshel emphasizes the differences of managing emotions and emotional orientation of athletes in terms of their personal differences. In addition to this, it was also stated that being able to manage their emotions can affect the performance of athletes (Anshel, 1990). At this point, mental training gives athletes the ability to manage this kind of mood.

In the light of definitions above, mental training can be defined as an imaging process of actions with all phases due to hereditary factors in the nature and actions emerging with environmental factors and imbedded in individual's subconscious through trainings (S. Erhan et al., 2015)

As a result of all this information, it can be said that mental training is related with increasing of success in sport activities or competitions. Therefore, all features and sub-dimensions of mental training should be examined.

This study aims to determine the level of mental training of athletes in different branches to increase their successes in sport activities.

2. Method and Findings

2.1. Target Population and Sampling Frame

340 athletes in different sport branches consists the working group of the study. These athletes, who are selected from various regions of Turkey and actively engaged in individual or team sport activities at elite level, voluntarily participated in the survey. A total of 340 athletes are formed by 116 women and 224 men.

2.1.1. Data Collection Instruments

The validity and reliability test of the Ottawa Mental Skills Assessment tool (OMSAT-3) which is also adapted to Turkish Language was applied by researcher to 220 athletes who are interested in different sports branches. The findings concerning the construct validity were consistent with the structure of the twelve factors of the original inventory. The value of the index of overall compliance is equal to RMSEA=0.072, SRMR=0.066, NFI=0.92, NNFI=0.95 and CFI=0.956. The internal consistency value of the inventory is Alpha = 0.94. As a result, Ottawa Mental Skill Assessment Tool-3 is a valid and confidential measurement tool for athletes (Erhan and et al., 2015). Personal information form was created by researchers to determine the participants' features age, gender and athletes' branches and sportive experiences. *Ottawa Mental Skill Assessment Tool-3*: It is developed by Durand-Bush, Salmela and Green-Demers (2001) to evaluate the levels of athletes' mental ability. The scale consists of 48 items and 12 subscales and these subscales are evenly divided into four items. The scale consists of a total of 48 items and constructed on a 7 point Likert-type. The scoring was formed from 1 to 7 according to the statements, "Strongly disagree", "Disagree", "Slightly disagree", "Neither agree nor disagree", "Agree", "Slightly agree" and "Strongly agree".

2.1.2. Data Analysis Techniques

For the analyses of the data, Portable IBM SPSS Statistics v20 package program was used. The frequency analysis was applied to determine the demographic characteristics of participants and Shapiro-Wilk Test was applied in order to decide whether the questionnaires are suitable to normal distribution and Mann-Whitney U test was applied in order to determine the dimensions according to parameters such as gender, marital status, and type of sports, level of contact and level of sport. Kruskal-Wallis H test was applied for analysis of the dimensions in terms of age, sports age and educational level. Finally, correlation analysis of Spearman was used in order to determine the relation between sub-dimensions of total satisfaction score. The significance level ($p<0.05$) was accepted in the analysis.

3. Findings

Table 2.1: The distribution of participants in terms of their demographic characteristics

	Parameter	**n**	**%**
Gender	Woman	116	34,1
	Man	224	65,9
	Total	**340**	**100,0**
Age	18-21	141	41,5
	22-25	146	42,9
	26-29	33	9,7
	30-33	18	5,3
	34-43	2	0,6
	Total	**340**	**100,0**
Type of Sport	Individual	159	46,8
	Team	181	53,2
	Total	**340**	**100,0**
Marital Status	Single	21	6,2
	Married	319	93,8
	Total	**340**	**100,0**
Whether based on contact	Non-contact	185	54,4
	Contact	155	45,6
	Total	**340**	**100,0**
Level of Sport	Amateur	179	52,6
	Professional	161	47,4
	Total	**340**	**100,0**
Education Level	Secondary School	1	0,3
	High School	17	5,0
	Bachelor's Degree	318	93,5
	Master's Degree	4	1,2
	Total	**340**	**100,0**

The survey is composed of 224 men (65.9%) and 116 women (34.1%). Accordingly, men group constitutes the majority of participants.

Participants were categorized by age into "18-21 years-old", "22-25 years-old", "26-29 years-old", "30-33 years-old" and "34-43 years-old". 41.5% of respondents are aged between "18-21 years old", 42.9% of respondents are aged between "22-25 years old", 9.7% of respondents are aged between "26-29 years old", 5.3% of respondents are aged between "30-33 years old" and 0.6% of respondents are aged between "34-43 years old". 6.2% of respondents are "married" while remaining 93.8% are "single". Participants replied what kind of sport they are interested in; 46.8% said "individual", while 53.2% for those are interested in "team" sports. The respondent indicated that 54.4% are interested in "contact" sport and remaining 45.6% are involved in "non-

contact" sport. The level of sports of participants are were examined, so 52.6% do sports as "amateur" while 47.4% stated that they do as "professional". 0.3% of respondents have "secondary education level", 5% for those have "high school education level", 93.5% were from "bachelor's degree level" and remaining 1.2% received "master's degree level". The majority of participants have completed the level of bachelor's degree and so, general population of athletes is assumed as educated.

Table 2.2: The comparison of mental dimensions in terms of age

Dimension	Age	N	Average	ss	f	p
Target	18-21	141	5.54	.078	20.338	**.000***
	22-25	146	5.88	.081		
	25-29	33	5.96	.156		
	30-33	18	6.11	.289		
	34-43	2	5.50	.750		
Confidence	18-21	141	5.71	.081	26.644	**.000***
	22-25	146	6.12	.076		
	25-29	33	6.04	.169		
	30-33	18	6.47	.173		
	34-43	2	6.25	.500		
Commitment	18-21	141	5.42	.087	15.927	**.003***
	22-25	146	5.77	.085		
	25-29	33	5.63	.232		
	30-33	18	5.94	.391		
	34-43	2	5.25	.750		
Stress	18-21	141	4.30	.111	19.689	**.001***
	22-25	146	4.95	.129		
	25-29	33	4.87	.261		
	30-33	18	5.58	.336		
	34-43	2	4.87	.379		
Relaxation	18-21	141	5.11	.087	30.247	**.000***
	22-25	146	5.69	.090		
	25-29	33	5.65	.224		
	30-33	18	5.98	.281		
	34-43	2	5.75	.250		
Fear	18-21	141	4.76	.225	12.385	**.015***
	22-25	146	5.36	.183		
	25-29	33	5.12	.274		
	30-33	18	5.77	.314		
	34-43	2	4.25	.250		
Energy	18-21	141	5.39	.089	23.487	**.000***
	22-25	146	5.88	.914		
	25-29	33	5.86	.153		
	30-33	18	5.97	.298		

	34-43	2	5.37	.125		
Focusing	18-21	141	4.71	.120	10.438	**.034***
	22-25	146	5.22	.127		
	25-29	33	4.91	.286		
	30-33	18	5.36	.306		
	34-43	2	4.00	.250		
Imaging	18-21	141	5.28	.082	26.491	**.000***
	22-25	146	5.69	.860		
	25-29	33	5.85	.153		
	30-33	18	6.19	.297		
	34-43	2	4.60	.120		
Planning	18-21	141	5.09	.096	18.176	**.001***
	22-25	146	5.50	.106		
	25-29	33	5.66	.181		
	30-33	18	5.90	.378		
	34-43	2	5.18	.884		
Mental Fitness	18-21	141	5.57	.102	18.752	**.001***
	22-25	146	5.71	.034		
	25-29	33	5.94	.362		
	30-33	18	5.60	1.00		
	34-43	2	4.05	.122		
Re-Focusing	18-21	141	4.67	.143	13.286	**.010***
	22-25	146	4.45	.333		
	25-29	33	5.23	.406		
	30-33	18	3.12	.375		
	34-43	2	5.04	.063		
Total	18-21	141	5.53	.835	21.843	**.000***
	22-25	146	5.48	.177		
	25-29	33	5.87	.249		
	30-33	18	4.98	.218		
	34-43	2	4.49	.106		

(* p<.050)

A statistically significant result (p<0.50) was found in comparison of mental dimensions of the participants in terms of their ages.

According to the comparison of mental dimensions in terms of age variable, the highest point average belongs to the group of athletes aged 30-33 years in terms of the factors of goal setting, confidence, commitment, stress, relaxation, fear, energy, focusing, imaging and planning; on the other hand, the highest point average belongs to the group of athletes aged 25-29 years in terms of the factors of mental fitness and re-focusing. This group has also the highest total score while the group of athletes aged 34-43 years has the lowest total score. When the analysis on athletes aged 18-21 years is

approached, it is observed that this group has the lowest average score in terms of factors of confidence, stress, relaxation, planning and imaging in mind.

In the light of this data, it can be said that according to the factors of mental, sportive and theoretical practices, athletes aged 18-21 years are unable to fully understand the necessity of mental dimensions in achieving the goal; on the other hand, athletes aged 22-25 years have better mental abilities, but they are not fully effective in practice. It can be observed that athletes aged 25-29 years have the highest value in terms of imaging in mind, re-focusing and total score. According to this result, it can be said that athletes aged 25-29 years use their mental abilities to achieve their goals. The highest point average belongs to the group of athletes aged 30-33 years in terms of the factors of goal setting, confidence, commitment, stress, relaxation, fear, energy, focusing, imaging and planning. When this result is approached, it can be said that they use correctly mental abilities in accordance with their objectives. Finally, it can be interpreted that athletes aged 34-43 years, who have the lowest value in terms of parameters of goal setting, commitment, fear, energy, focusing and imaging and total score, are so far away from their goals and thus, they cannot use their mental abilities in an effective way.

Table 2.3: The comparison of mental dimensions in terms of type of sport

Dimension	Type of Sport	n	Average	ss	z	p
Target	Individual	159	5.919	.080	-3.375	.001*
	Team	181	5.624	.070		
Confidence	Individual	159	6.095	.071	-2.355	.019*
	Team	181	5.846	.074		
Commitment	Individual	159	5.715	.090	-1.767	.077
	Team	181	5.540	.080		
Stress	Individual	159	4.834	.122	-1.478	.139
	Team	181	4.607	.106		
Relaxation	Individual	159	5.559	.093	-1.595	.111
	Team	181	5.386	.080		
Fear	Individual	159	5.224	.114	-1.642	.100
	Team	181	5.000	.160		
Energy	Individual	159	5.726	.088	-.999	.318
	Team	181	5.635	.080		
Focusing	Individual	159	5.174	.115	-2.109	035*
	Team	181	4.814	.113		
Imaging	Individual	159	5.745	.084	-3.326	001*
	Team	181	5.396	.073		
Planning	Individual	159	5.432	.102	-1.042	.297
	Team	181	5.317	.089		
Mental fitness	Individual	159	5.649	.093	-3.118	.002*

	Team	181	5.269	.087		
Re-Focusing	Individual	159	4.573	.132	-1.607	.108
	Team	181	4.283	.124		
Total	Individual	159	5.471	.076	-2.611	.009*
	Team	181	5.226	.068		

According to Table 2.3, no statistically significant result was found between athletes who are engaged in individual sport and team sport activities in terms of factors of commitment, stress, relaxation, energy, fear, planning and re-focusing factors by considering their answers to all sub-dimensions (p>.50). However, a statistically significant result was found between the type of sport and the extent of target, confidence, focusing, imaging factor and mental fitness dimensions (p<0.50).

According to statistical evaluation, significant difference was found between the responses by athletes who are engaged in individual sports and athletes who are engaged in team sports due to overall total equals p=0.009 in terms of their responses to all sub-dimensions (p<0.05).

Table 2.4: The comparison of mental dimensions in terms of level of contact

Dimension	Level of Contact	N	Average	ss	z	p
Target	Non-contact	185	5.951	069	-4.228	**.000***
	Contact	155	5.537	.079		
Confidence	Non-contact	185	6.064	.068	-2.364	**.018***
	Contact	155	5.841	.079		
Commitment	Non-contact	185	5.829	.079	-4.059	**.000***
	Contact	155	5.374	.089		
Stress	Non-contact	185	4.978	.107	-3.647	**.000***
	Contact	155	4.398	.118		
Relaxation	Non-contact	185	5.702	.083	-4.598	**.000***
	Contact	155	5.187	.084		
Fear	Non-contact	185	5.368	.108	-4.166	**.000***
	Contact	155	4.790	.176		
Energy	Non-contact	185	5.879	.079	-4.342	**.000***
	Contact	155	5.437	.086		
Focusing	Non-contact	185	5.347	.109	-4.953	**.000***
	Contact	155	4.548	.113		
Imaging	Non-contact	185	5.713	.074	-5.010	**.003***
	Contact	155	5.375	.083		
Planning	Non-contact	185	5.705	.086	-5.615	**.000***
	Contact	155	4.972	.096		
Mental Fitness	Non-contact	185	5.677	.084	-3.948	**.000***
	Contact	155	5.172	.094		
Re-Focusing	Non-contact	185	4.878	.121	-5.501	**.000***

	Contact	155	3.871	.122		
Total	Non-contact	185	5.591	.070	-5.144	**.000***
	Contact	155	5.042	.068		

(*p<0.05)

According to statistical evaluation, significant differences were found among the responses by athletes doing sports with physical contact and athletes doing sports without physical contact in all sub-dimensions and in a total (p<0.05).

Table 2.5: The comparison of mental dimensions in terms of level of sport

Dimension	Level of Sport	n	ort	ss	z	p
Target	Amateur	179	5.430	.071	-7.216	**.000***
	Professional	161	6.132	.069		
Confidence	Amateur	179	5.638	.074	-7.218	**.000***
	Professional	161	6.324	.061		
Commitment	Amateur	179	5.294	.079	-6.489	**.000***
	Professional	161	5.986	.083		
Stress	Amateur	179	4.192	.099	-6.805	**.000***
	Professional	161	5.293	.113		
Relaxation	Amateur	179	5.103	.078	-6.550	**.000***
	Professional	161	5.872	.084		
Fear	Amateur	179	4.399	.111	-8.256	**.000***
	Professional	161	5.889	.151		
Energy	Amateur	179	5.305	.081	-7.223	**.000***
	Professional	161	6.091	.074		
Focusing	Amateur	179	4.455	.102	-6.798	**.000***
	Professional	161	5.569	.112		
Imaging	Amateur	179	5.312	.071	-5.056	**.000***
	Professional	161	5.833	.084		
Planning	Amateur	179	4.923	.085	-7.502	**.000***
	Professional	161	5.869	.091		
Mental Fitness	Amateur	179	5.044	.084	-6.876	**.000***
	Professional	161	5.894	.087		
Re-Focusing	Amateur	179	3.754	.098	-7.441	**.000***
	Professional	161	5.158	.135		
Total	Amateur	179	4.904	.054	-8.668	**.000***
	Professional	161	5.826	.073		

(* p<0.05)

According to statistical evaluation, significant differences were found among the responses by amateur and professional athletes in terms of their levels of sport in all sub-dimensions and in a total (p<0.05).

Table 2.6: The comparison of mental dimensions in terms of how many years they do sports

Dimension	Age of Sport	n	ort	ss	f	p
	1-4	64	5.632	.108		
	5-9	161	5.717	.077		
Target	**10-14**	91	5.890	.104	**17.680**	**.001 ***
	15-19	18	6.319	.214		
	20 <	6	4.750	.573		
	1-4	64	5.109	.133		
	5-9	161	5.425	.091		
Confidence	**10-14**	91	5.697	.105	**17.919**	**.001 ***
	15-19	18	6.138	.215		
	20 <	6	4.916	.757		
	1-4	64	5.296	.122		
	5-9	161	5.587	.091		
Commitment	**10-14**	91	5.859	.099	**21.737**	**.000***
	15-19	18	6.319	.173		
	20 <	6	4.333	.900		
	1-4	64	3.929	.148		
	5-9	161	4.815	.116		
Stress	**10-14**	91	4.983	.163	**23.468**	**.000 ***
	15-19	18	5.180	.342		
	20 <	6	4.875	.621		
	1-4	64	5.109	.233		
	5-9	161	5.425	.091		
Relaxation	**10-14**	91	5.697	.105	**17.919**	**.001 ***
	15-19	18	6.138	.215		
	20 <	6	4.916	.757		
	1-4	64	4.230	.198		
	5-9	161	5.170	.112		
Fear	**10-14**	91	5.469	.264	**22.490**	**.000 ***
	15-19	18	5.666	.373		
	20 <	6	5.458	.493		
	1-4	64	5.246	.142		
	5-9	161	5.689	.086		
Energy	**10-14**	91	5.887	.100	**18.783**	**.001 ***
	15-19	18	6.236	.174		
	20 <	6	5.125	.787		
	1-4	64	4.105	.166		
	5-9	161	5.164	.115		
Focusing	**10-14**	91	5.156	.155	**27.429**	**.000***
	15-19	18	5.375	.379		
	20 <	6	5.666	.498		
Imaging	**1-4**	64	5.195	.116	**27.427**	**.000***
	5-9	161	5.484	.081		

	10-14	91	5.857	.103		
	15-19	18	6.222	.216		
	20 <	6	4.958	.643		
	1-4	64	5.125	.136		
	5-9	161	5.278	.101		
Planning	**10-14**	91	5.565	.126	**15.530**	**.000***
	15-19	18	6.194	.230		
	20 <	6	5.083	.789		
	1-4	64	5.062	.143		
	5-9	161	5.338	.094		
Mental Fitness	**10-14**	91	5.774	.110	**22.170**	**.000***
	15-19	18	6.097	.251		
	20 <	6	5.541	.845		
	1-4	64	3.816	.180		
	5-9	161	4.470	.128		
Refocusing	**10-14**	91	4.626	.185	**11.434**	**.022***
	15-19	18	4.986	.459		
	20 <	6	4.625	.657		
	1-4	64	4.862	.084		
	5-9	161	5.342	.074		
Total	**10-14**	91	5.572	.102	**28.076**	**.000***
	15-19	18	5.929	.219		
	20 <	6	5.131	.407		

(*p<0.50)

According to statistical evaluation, significant differences were found among the responses by athletes in terms of their ages of sport in all sub-dimensions and in a total (p<0.05).

Table 2.7: The correlation analysis of all mental dimensions

		Target	**Confi.**	**Commit.**	**Stress**	**Relax.**	**Fear**	**Energy**	**Focusing**	**Imaging**	**Planning**	**M.Fitn.**	**Re-foc.**
Confidence	r	,695**											
	p	,000											
	n	340											
Commitment	r	,663**	,675**										
	p	,000	,000										
	n	340	340										
Stress	r	,409**	,521**	,470**									
	p	,000	,000	,000									
	n	340	340	340									
Relaxation	r	,653**	,567**	,645**	,443**								
	p	,000	,000	,000	,000								
	n	340	340	340	340								

Fear	r	,517**	,569**	,558**	,717**	,449**							
	p	,000	,000	,000	,000	,000							
	n	340	340	340	340	340							
Energy	r	,654**	,659**	,659**	,485**	,662**	,536**						
	p	,000	,000	,000	,000	,000	,000						
	n	340	340	340	340	340	340						
Focusing	r	,454**	,527**	,504**	,742**	,487**	,768**	,573**					
	p	,000	,000	,000	,000	,000	,000	,000					
	n	340	340	340	340	340	340	340					
Imaging	r	,622**	,633**	,627**	,448**	,631**	,395**	,604**	,445**				
	p	,000	,000	,000	,000	,000	,000	,000	,000				
	n	340	340	340	340	340	340	340	340				
Planning	r	,630**	,596**	,629**	,396**	,701**	,432**	,643**	,454**	,598**			
	p	,000	,000	,000	,000	,000	,000	,000	,000	,000			
	n	340	340	340	340	340	340	340	340	340			
Mental Fitness	r	,656**	,636**	,603**	,386**	,653**	,408**	,634**	,464**	,629**	,749**		
	p	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000		
	n	340	340	340	340	340	340	340	340	340	340		
Re-focusing	r	,402**	,443**	,455**	,712**	,517**	,708**	,492**	,755**	,356**	,448**	,404**	
	p	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	
	n	340	340	340	340	340	340	340	340	340	340	340	
Total	r	,757**	,800**	,785**	,742**	,751**	,782**	,785**	,783**	,723**	,740**	,729**	,723**
	p	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000
	n	340	340	340	340	340	340	340	340	340	340	340	340

As can be seen in the table above, according to the result of evaluation carried out, there is a statistically significant positive relationship between all twelve sub-dimensions with each other ($p<0.05$). It was also found that when the level of score received from one sub-dimension increases, other sub-dimensions increased their levels of score.

4. Discussion and Conclusion

This paper aims to evaluate the levels of mental ability of licensed and elite athletes who are actively engaged in sport at branch level in Turkey

A total of 340 athletes, including 116 women and 224 men, from various regions of Turkey who are actively engaged in sport at elite level in different branches, voluntarily participated in the survey which is carried out to determine their levels and techniques of mental training. Ottawa Mental Skills Assessment tool (OMSAT-3) which is developed by Durand-Bush, Salmela and Green-Demers (2001) and adapted to Turkish language was applied as a data collection tool. The scale consists of 48 items and 12 subscales.

The results obtained after application of the study can be summarized as follows.

- According to the gender variable, no statistically significant difference was found between the levels of mental ability of men participants and women participants in terms of their sub-dimensions.
- According to the variable of marital status, no statistically significant difference was found between being single or married status of men participants and women participants in terms of their sub-dimensions.
- According to age variable, statistically significant differences were found in terms of five different age categories when all sub-dimensions of mental abilities of athletes were analyzed.
- According to variable of type of sport, when all sub-dimensions of mental abilities of athletes were analyzed, no statistically significant difference ($p>.50$) was found in terms of factors of commitment, stress, relaxation, energy, fear, planning and re-focusing factors, but statistically significant difference ($p<.50$) was found in terms of level of sports and other all sub-dimensions.
- According to variable of level of contact, when all sub-dimensions of mental abilities of athletes were analyzed, statistically significant difference were found in terms of athletes are interested in contact sports and athletes are not interested in contact sports.
- According to the variable of level of sport, statistically significant differences were found among amateur athletes and professional athletes in terms of their sub-dimensions
- According to the variable of age of sport, statistically significant differences were found in terms of all range of age and their sub-dimensions.
- According to the variable of educational level, no statistically significant difference was found in terms of categories as secondary school, high school, bachelor's degree and master's degree and in their sub-dimensions.
- According to correlation analysis of total scores of mental ability, there is a statistically significant positive relationship between all sub-dimensions with each other ($p<0.05$). It was found that when the level of score received from one sub-dimension increases, other sub-dimensions increased their levels of score.

According to the comparison of mental dimensions in terms of age variable, the highest point average belongs to the group of athletes aged 30-33 years in terms of the factors of goal setting, confidence, commitment, stress, relaxation, fear, energy, focusing, imaging and planning; on the other hand, the highest point average belongs to the group of athletes aged 25-29 years in terms of the factors of mental fitness and re-focusing. This group has also the highest total score while the group of athletes aged 34-43 years has the lowest total score. When the analysis on athletes aged 18-21 years is

approached, it is observed that this group has the lowest average score in terms of factors of confidence, stress, relaxation, planning and imaging in mind.

In the light of this data, it can be said that according to the factors of mental, sportive and theoretical practices, athletes aged 18-21 years are unable to fully understand the necessity of mental dimensions in achieving the goal; on the other hand, athletes aged 22-25 years have better mental abilities, but they are not fully effective in practice. It can be observed that athletes aged 25-29 years have the highest value in terms of imaging in mind, re-focusing and total score. According to this result, it can be said that athletes aged 25-29 years use their mental abilities to achieve their goals. The highest point average belongs to the group of athletes aged 30-33 years in terms of the factors of goal setting, confidence, commitment, stress, relaxation, fear, energy, focusing, imaging and planning. When this result is approached, it can be said that they use correctly mental abilities in accordance with their objectives. Finally, it can be interpreted that athletes aged 34-43 years, who have the lowest value in terms of parameters of goal setting, commitment, fear, energy, focusing and imaging and total score, are so far away from their goals and thus, they cannot use their mental abilities in an effective way.

In the literature, there is a limited number of studies in relation to the concepts of mental training and mental abilities. In some of these studies, the results emerged from the comparison of dimensions of mental ability is such as to support our study despite that different scales are used in them.

In the study that the effects of mental training program on tennis performance was held, mental training and tennis-specific performance levels were measured. At the same time, researchers emphasized the high level of self-confidence of the group which was involved in the mental training program (Mamassis and Doganis, 2004).

In the study which tried to analyze the role of the eight-week training program over mental performance, no significant difference between the groups of mental training and physical training (Straub, 1989).

In a study conducted on senior Olympic athletes, 121 Swedish Optimist athletes who have competed in 2000 Sydney Olympics, have done mental skills training. It is observed that athletes who have done mental skills training have a better mood than the others they are more talented to set effective goals (Fallby, 2003).

Mental training, which is used in the emotional, mental and behavioral development of athletes and solution of problems related to them, is one of the most important tools as psychology in general sense and practical sport psychology in particular sense. Mental training which has a significant power to upgrade an athlete's performance is a psychological skill. Many studies carried out sport psychology reveal that mental training has positive effects on athletes' performance and other

psychological skills. However, it is not true to expect that mental training cannot positively effects performance in a short time.

In the light of findings obtained from studies, best performance can be obtained when mental training should be workout together with physical training. The important point here is that individual differences among athletes should be revealed and the method needed should be planned before implementation of mental training. On the other hand, another considerable point is that mental training should be spread for a long period, not a short term and thus, an athlete should get into a habit of mental training. Mental training has not only positive impact on performance during competition. In addition to this, an athlete can often utilize mental training during the period of disability or preparation. Especially during disability period, mental training is an absolute method which should be carried out to shorten the period of recovery and to recover the psychological status. In addition to these, implementing a mental training shortens the learning process required for the physical training, facilitates the activity in a correct way, reduces the risk of injury and allows the athlete to control the feelings (Altıntaş and Akalan, 2008)

In a master thesis done in our country in 2006, 146 individual national athletes' knowledge levels and their coaches' proficiency levels related to mental training were determined. As a result of the study, it is observed that individual national athletes regard mental training as significant, but they are not enough level on practice and they do not find their coaches sufficient on mental training (Aktepe, 2006)

When researches on the methods of imaging in mind are analyzed, visual and kinesthetic imagery have a positive impact to increase the physical and psychological performance. These effects can differ according to sports branch, athlete's experience, situation or skill that mental training was carried out, athlete's emotional situation and environment where athlete do mental training. (Beşiktaş, 2012)

As a result, Ottawa Mental Skills Assessment tool (OMSAT-3) which is developed by Durand-Bush, Salmela and Green-Demers (2001) and adapted to Turkish language by researcher was applied to evaluate the levels of mental ability of elite athletes in different branches and to emerge their mental abilities according to various parameters. At the same time, statistically significant differences which were found in variables such as age, type of sport, contact level, the level of sports and sport age prove our theory. In this direction, this inference can be made that the levels of mental ability of elite athletes in different branches can show an alteration according to different variables.

5. Further Suggestions

1. The developmental knowledge of mental ability should be given in addition to individual's physical and motoric development in physical education and sports lessons.
2. Mental training load should be provided to athletes in proportion to their physical abilities and skills.
3. In physical education and sports departments, sportive talents and skills should be isolated from role-learning and provided by applied courses; and mental training's method and dimensions should also be supported.
4. Trainers and coaches who train athletes should be subjected to training courses of mental development.
5. It is necessary to emphasize that mental training is required for the continuation and persistence of physical and technical development of our national athletes.
6. Athletes should make more effort on implementation of mental training to achieve success in sport and continuation of this success.

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