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Editor-in-Chief

Assoc. Prof. Dr. Metin YAMAN
Editor

Assoc. Prof. Dr. İsmail Hakkı MİRİCİ
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Contact Address:

Prof. Dr. Erdal ZORBA
TOJRAS, Editor in Chief
Ankara-Turkey

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Message from the Editors

I am pleased to announce second volume and third issue of The Online Journal of Recreation and Sport (TOJRAS) in 2013. As the mission of journal is to stress the significance of different practices in the field of education by academic efforts and researches, selected research papers enlighten valuable contributions by different practice on the base of qualitative and quantitative researches, especially mix approach.

As this issue promotes how the journal is developing as regards its vision and mission, there are valuable researches and their studies that contributed to the journal. Therefore, I would like to thank to editorial board, reviewers and the researchers for their valuable contributions to the journal and this issue.

October, 2013
Prof. Dr. Erdal ZORBA
Editor in Chief

It is a great pleasure for me as an editor of The Online Journal of Recreation and Sport (TOJRAS) to publish October, 2013 issue. I would like to thank to all authors and associate editors for their contributions to the current issue of TOJRAS that selected papers reflect the journal developments and contributions by their rich research process. On behalf of the editorial team of The Online Journal of Recreation and Sport (TOJRAS), we will welcome to share your original and valuable researchers. All authors can submit their manuscripts to tojras.editor@gmail.com for the following issues.

October, 2013
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Aerobic Endurance and Its Impact on Some Biological Variables and Disorders Textures in Judo

Hala NABEEL [1]

[1] Dr.,

ABSTRACT

Introduction and purpose: This research aims to develop a training program proposal for the development of aerobic endurance and knowledge of its impact on some physical and biological variables and skeleton disorders and their relationship to the level of performance of students. **Method:** Was used experimental method designed two sets, one control group and other experimental, each group (20) female students from the Second Division, were measured both: coefficient breathing, pH, (measured cortisol - Creatine in urine) pulse rate, test (400 m) enemy, disorders and textures, and the level of performance. **Results:** Improved some biological variables, and improves symptoms of disorders textures and the performance level of students resulting from improved aerobic endurance.

Keywords: *aerobic, endurance, and its impact, disorders, judo*

INTRODUCTION

Is a sports training destination of biological processes is only exposing the body to perform different types of pregnancy lead to physical changes in physiological and structural morphology resulting in increased efficiency of the body, and to adapt to meet the demands of various sporting activities, progress in the sport is a functional change and compositional complex occur in the internal organs of the athletes and this changes depending on the textural and biological functional sports more capacity, which would lead to more efficient heart muscle and circulatory system, lungs, and therefore the blood is known as physiological adaptation and the level of individual performance is affected by its response to physical activity to try to reach the highest level of sports and make it general fitness, the level of performance is also influenced by many factors, the most important source of supply.

Subject the individual responses of the sport activity of the outputs of the supply energy for the body and their impact on acid base balance (pH PH) which can be identified through some precise measurements such as pH of body fluids and these fluids saliva, sports, activity associated with the occurrence of many chemical changes within the body, which resulting in the accumulation of certain substances that influence the balance of acid and base materials such lactic acid, which causes the body to accumulate within the speed of fatigue, the body deal with this increase of lactic acid and get rid of it and participate in the process of so-called (non vital) blood where is the first line of defense against any changes in the level of the degree of acid base balance (pH), while other organs and systems in the body to help (13) (15).

It can get rid of some excess acid by the salivary glands, if saliva were collected away from the air, it is noted that the pH of the saliva moving slightly toward the acidity in order to contain carbon dioxide and this means that you can get rid of the acid by saliva, which leads to a lack of concentration of ions hydrogen and thus tends to alkaline pH, and because saliva contains sodium bicarbonate, carbonic acid, and sodium phosphate and the composition of saliva may play a role maintaining the balance acid base their bodies, especially when taking acid and alkali by mouth, and both bodies can cooperate with the league and respiratory physiological systems other organization of the pH of the blood, where the process of respiratory gas exchange, oxygen consumption and disposal of carbon dioxide, and physical activity

is always accompanied by increased gas exchange due to consumption of organic substances in the body for energy production and increased respiratory rate to speed the disposal of carbon dioxide and thus reducing the acid content carbonic in the blood, get rid of hydrogen ions in the case of a lack of pH (acidity) and the opposite happens in case of increasing the pH (alkalinity), pH indicates the negative logarithm of the hydrogen ion concentration in the solution is said that the solution is neutral if the pH of this solution = 7 This occurs when hydrogen ions are equal and if hydroxyl ions increased the concentration of hydrogen ions the solution is acidic and have pH of less than (7) If the increased degree of concentration of hydroxyl ions shouting solution is alkaline pH and has more than (7),(12).

The hormone cortisol is the main adrenal cortex and excreted in the day about 5 - 30 mg , change the secretion of cortisol due to a change in the daily excretion Odrino Kortik Trovic hormone (ACTH) from the pituitary gland, with the rise in the daytime and lower in the evening, cortisol and works to increase the sugar in the blood with high physical exertion as cortisol accelerates the process of making sugar from non - carbohydrates, as well as muscle tissue broken, and that the transformation of glycogen to glucose Alkatikolamin impact depends on the presence of cortisol and its effect on the first-mentioned process and the muscle weakness occurs in the case of increased secretion of cortisol to increase the crash and increase muscle creatine. (3), (8). Valchortizul hormone demolition basic hormones result of his central analyzed the protein, since protein degradation increases the availability of amino acids to the process of configuring the false sugar (through a source other than diabetes), the role of cortisol in the organization of the representation of the protein is more important than his role in the regulation of glucose. (14), aerobic is the so-called destination physiological stress antenna because of the adoption of the muscle work on oxygen for energy production, and compared between the word (antenna) and your circulatory system respiratory blamed each stress the word antenna is intended to aerobic metabolism.

The practice exercises are considered a clear impact on the vital organs of the body also have a positive impact on biological and chemical changes associated with the growth of the various elements of physical fitness and muscular system and circulatory tract, it works on the growth of these devices work and improve their performance to the levels of functional performance and contribute to optimal exercise in raising the level of performance physiology of the vital organs of the body as well as upgrading the level of physical fitness and skeleton. (8)

And pain associated with the stability of the body in a position Qwamip wrong for long periods to get used to is what is known skeleton disorders, which comes in the form of a dull pain behind the neck, girdle elbows, wrist, back, knees and feet, and these indicators point to an imbalance of motor apparatus of the body in general or part of which qualifies for the injury, and neglecting deviations skeleton deformities become fixed Qwamip difficult to treat.

Require judo practitioners of the performance of movements of certain specifications characterized by the multiplicity of skills that must be mastered and the players performed during the conditions of competition and provide the level of the sport has become harder to beat the opponent by one skill, but you must use a range of skills are linked together (skills combined) in order to achieve greater efficiency through the process of the attack, so I took it upon themselves to install trainers skills to fit with the abilities of the players (5). All the skills of judo, whether individual skills or skills composite technique is characterized by technical precision based on scientific principles and foundations, requires compatibility with the dynamic responses of work to install the tracks motor skills through the neural pathways for the players, this may lead to the speed of motor performance, which gradually acquire even appear in the sophisticated form of kinetic behavior is characterized by harmony and cruise with an economy of energy exerted and the time required for performance (1).

Purpose of study:

Developing a training program proposal for the development of aerobic endurance and to identify the impact on (some of the biological variables - cortisol. B - creatinine. C - pH. D - factor of breath. E - Pulse rate, physical variables: A - aerobic, Improving disorder skeleton.

METHODS

Researcher used experimental method for the appropriateness of the nature of the search, Sample Search from the second year, students at the Faculty of Physical Education in Port Said for the academic year 2011 / 2012 of their number (20) students have been chosen way intentional, Data collection tools The use of medical tests to measure the variables of the crisis research as follows (Biological variables) Cortisol analysis of cortisol in the urine analysis of radio-immunoassay RIA. (Ud / d), analysis of creatinine in the urine Creat chromatography. (Mg / di), The ratio of cortisol / Kriatnen Cortisol creat. (Ug / g), PH strips to measure the PH in the saliva. Factor analysis using a breathing gas (oxycon / 5). (Ratio), Pulse rate using a scale pulse rate Pulse Meter. (N / s), (Physical variables) aerobic test using (5 × 55 m [s]). (18: 212) , (visual analog scale) Visual Analogues Scales Is a measure of an effective and simple to measure the severity of pain, it is a scale of (1-10) degrees, and the player you select the degree you feel the pain so as to reflect the sense

of this pain. (Annex 4) , (the proposed program) goal of the program: The program aims of the proposed development of tolerance to identify the antenna and its impact on some of the biological and skeleton disorders and its relationship to the performance level of students. **Statistical treatment:** the arithmetic mean - standard deviation - coefficient convolution - test (v) - the proportion of improvement - the correlation coefficient.

RESULT

Table (1) Significant differences between the measurements before and after the experimental group in the variables under discussion

M	variables	Pre measurement		post measurement		The difference between the value of intermediate	Significance	The medium improvement	
		P	± m	P	± m				
1	cortisol	19.40	4.27	10.82	4.16	8.58	3.71*	44.23	
2	creatinine	161.2	69.75	105.5	23.92	55.9	7.16*	34.63	
3	cortisol / creatinine	122.09	41.93	79.18	24.16	42.91	5.83*	35.15	
4	pulse rate	74.40	2.63	71.60	2.43	3.10	3.57*	4.17	
5	breathing factor	comfort	0.89	0.018	0.93	0.019	0.04	2.11*	4.49
		After the effort	1.54	0.016	1.11	0.018	0.43	2.18*	27.92
6	pH	comfort	6.72	0.02	6.84	0.001	0.12	2.18*	1.80
		After the effort	6.65	0.01	6.71	0.001	0.06	6.90*	0.90
7	aerobic	1.46	0.26	1.02	0.020	0.45	2.1*	30.6	
8	degrees of pain	5.75	0.76	2.47	0.98	3.28	17.84*	57.1	
9	level of performance	16.5	0.433	35.30	2.003	18.8	2.18*	113.94	

Is clear from Table (1) the existence of statistically significant differences between the tribal and distance measurement for the dimensional measurement of experimental group in all the variables under consideration.

Table (2) Correlation matrix between the variables of research for experimental group

M	Variables	cortisol	creatinine	creatinine pulse	pulse	breathing comfort factor	coefficient breathing effort after	pH comfort	effort pH	endurance periodic	degrees of pain	Level performance
1	cortisol	1.00	0.224	1030	0.136	0.418	0.471	0.031	0.86	0.081	0.113	-0.106
2	creatinine		1.00	0.418	0.471	0.336	0.086	0.271	0.213	0.031	0.158	-0.175
3	Creatinine pulse			1.00	0.105	0.185	0.213	0.238	-0.233	0.416	0.021	0.356
4	Pulse				1.00	0.031	0.086	0.105	-0.080	0.222	0.311	-0.086
5	breathing					1.00	0.38	0.08	0.113	0.24	-	0.005

	comfort factor		9		8	0.25	
	coefficient					1	
6	breathing effort after	1.00	0.12 2	0.165	0.07 1	-	0.006
7	pH comfort		1.00	0.543 *	0.04 2	0.21 0	0.663 *
8	effort pH			1.00	0.17 0	0.25 5	0.336
9	endurance periodic				1.00	0.40 8	0.399 2
10	degrees of pain Level					1.00	0.413
11	performance						1.00

Is clear from Table (2) inter-correlation matrix between the variables under consideration for the experimental group and the study notes that most of the inter-linkages between the variables statistically significant, indicating that they affect and are affected each other and they include (54) correlation coefficient of (21) D correlation statistically

DISCUSSION

Is clear from Table (1) the existence of significant differences between tribal and dimensional measurement of experimental group in the biological variables for telemetric where results showed a low concentration of cortisol difference of \$ (8.58), and by improving the premises (44.23) and that improvement is due to the regularity of the sample in the training program proposed, agrees with these results Kremer and others Kraemer et al., (1996 m) (33), which see a greater concentration of cortisol gradually commensurate with the physical demands at the level of intensity from 65 to 80% of the maximum consumption of oxygen to carry less than the maximum.

The observation (Table 1) indicates a decline in the measurement of cortisol / creatinine, where he was the difference between tribal and distance measurement (42.91) in favor of a rate telemetric improve disbursement of (35.15) as well as in terms of decreased creatinine concentration difference of \$ (55.9) and by improvement of (34.63) marked by the decline which occurs in the hormone cortisol that is, at rest, the concentration of cortisol and creatinine as well as the lowest concentration of experimental group, and creatinine is a product of protein metabolism, and drop a sign of lack of demolitions that occur for students during athletic performance. As shown in table (1), no significant differences between pre and post measurement of experimental group to measure the pulse rate at rest for telemetric has decreased difference of \$ (3.10) and by improvement of \$ (4.17) The Roberdz and Robertr Roberges & Roberts (1997 m) (39) indicates that the pulse rate increases with increase in the rate and intensity of training in order to increase the blood circulation to the muscles working to supply the body with oxygen needed for energy production, and There are significant differences between the measurement of pre and post of experimental group in a variable factor of breathing at rest for telemetric difference of \$ (0.04) and by improvement of (4.49) where the measurement was 0.89 in the tribal telemetric 0.93, indicating that in Alkiesin tribal distance was a result of access to energy from the three sources (carbohydrates –Fatty substances - protein), but at different rates and increase breathing comfort factor in the telemetric measurement for tribal reflect increased access to energy from carbohydrates compared to other sources and the consequent increase in the mechanical efficiency of any increase in employment (Performance) Output consumption of energy, that the increase in breathing comfort factor in the telemetric not go beyond (the correct one), In the view of Gunung Canong (1993 m) (31) to breathe more rapidly with the beginning of training, and then gradually increase the speed of speaking, which resulted from increased breathing rate, aided by the increase in body temperature and pointed out that the reason for increasing the rate of breathing is chemicals, such as blood oxygen, carbon dioxide and bicarbonate which affect the chemical receptors in the large blood vessels that lead to the delivery of brain signals to increase respiratory rate and increase the maximum consumption of oxygen. improvement in telemetric researcher add to exercise the students of the program and this is consistent with both Wood and baske Wood & Bask (2005), Dai Bin Mtet and others Die Pen maattet & et al., (2006 m), Krn Rempel and Rempel & Krasen (2006 m) it can achieve positive results for the relief of pain resulting from injury to various parts of the body or treat defects after the exercise program of strength exercises on a regular basis, where a positive impact on strengthening the muscles and relaxes tense muscles and stimulate blood circulation and relieve pain and improve muscle tone and body composition and helps develop the physical attributes and recovery skeleton.

Is clear from Table (2) that the correlation matrix between the variables under consideration D was statistically higher correlation of (0,986) between aerobic respiration and plants after the effort and followed by a link of (0.985) coefficient of breath after the effort and the pH after the effort, followed by a link of (0.947) between the plants after the breathing effort and the level of performance, then the correlation of (0.927) between the plants breath after the effort and pH at rest, and then link the amount of (0.883) between the level of performance and the pH after the effort and link the amount of (0.778) between the level of performance and number pH at rest and then link capacity (771,.) between the level of performance and the degree of pain, and then link the amount of (0.716) between the pH after the effort and pH in the comfort and correlation of (0.709) between the level of performance and aerobic, and then link (0.650) between aerobic and pH at rest, then the link capacity (641,.) between the degree of pain and aerobic, and link capacity (0.598) between the plants to breathe in comfort and breathing after the effort factor, and then link the amount of (0.551) between the aerobic and the number pH after the effort, and then link the amount of (0.542) between the level of performance and breathing in the comfort factor. As shown in Table(2) and a correlation of (0.782) between cortisol and plants breathe after effort, and then link the amount of (0.611) between creatinine and aerobic, and then link (0.532) between cortisol and the role of respiratory endurance, and then link the amount of (0.521) between cortisol and pH after effort, and then link the amount of (0.446) between the pulse and aerobic, and then link the amount of (0.445) between creatinine and pH after the effort, and then link the amount of (0.442) between cortisol and pH at rest.

CONCLUSIONS

In light of the objectives of the research and Frodah and statistical treatment to researchers concluded:

- 1 - low rate of cortisol in the urine of experimental research group, indicating the ability of students to withstand the pressure of physical exercise test.
- 2 - can be used to measure the variable of cortisol in the urine to identify the level of performance when the selection process for players for sports teams and nationalism.
- 3 - reflects a low concentration of creatinine experimental group students adapt to the pressures on the muscles, compared to female students of the control group, as well as bearing the muscle fatigue that beside creatinine indication to the liver and kidneys and public health.
- 4 - can rely on pulse rate and the coefficient of breath and pH in determining the level of physical fitness in the process of selecting the players and the players in identifying the speed of fatigue.
- 5 - taking into account the formation of free training in the proposed program reflects positively on the level of performance as a result of the rationalization of the production of energy within the body, and the consequent improvement in the mechanical efficiency of the muscles and increase aerobic respiration and improve plants and pH

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Capturing the Spirit and Cultural Heritage of Ancient Olympics

Duygu Harmandar Demirel [1], Ümit D. Üstün [2], Kutlu Varmaz [3],
Kemal Battal [4]

[1] Dumlupınar University
School for Physical Education
and Sports

[2] Dumlupınar University
School for Physical Education
and Sports

[3] Dumlupınar University

[4] Dumlupınar University

ABSTRACT

The Olympics that symbolizes the struggle of the humankind between his ideas and the reality that he must live was started in archaic age in B.C. 776 by Greeks. Although Ancient Olympic games, that brings all of the independent Greek people together in the great play fest that is fulfilled in each 4 years are explained to provide the unity among the Greek sites that are in a political struggle and to prepare for war, the common thought is that these games are done to honor Zeus, the great God of Greek mythology. The aim of this study is to give information about Ancient Olympics by conducting examinations about the origin of Ancient Olympic game that has started in 776 B.C., spirit of these games, how the contests are conducted. As a consequence, with Romanians in Greece who started to increase their power, the games also started to lose their effect. When Christianity became the official religion of Roman Empire, it was thought that the games were out of religion and it was a contrary situation to effect of Christianity. As a consequence, Emperor Theodosius withdrew these archaic games that had been played for more than a thousand years in the year of 393. And to the Greeks, Ancient Olympics were something so solemn that we have no equivalent to them today.

Keywords: *Ancient Olympic Games, Olympic Spirit, Olympic Events*

INTRODUCTION

Ancient Olympic Games: The Olympic Spirit

The rich mythology which decorates both the derivation and the consecration of one of the greatest institutions in the progress of mankind is known as Olympic Games. The Olympic Games are unique link between the classical world and the modern times. During the thousands years of their ancient life and the century of their modern existence, competitors and spectators alike have same passion for sport and exhilaration in human strength, power and achievement and the excitement of competition (Swaddling, 2000). And these "Olympic Games" had continued to be played for 1200 years without break in the old Olympia in the Southwest of Peloponnes Peninsula of Greece (Swaddling, 2000).

Showing curiosity of Olympic Fest that was lived in each four years through a thousand years from 776 B.C. until 393 A.D. had attracted citizens from whole Greek world. Thousands of people from neighbor cities and city governments in first years and then from far colonies by overland and sea, from the exploitations in Spain and Africa had came to Olympia that is the fixed place of Olympic game (Swaddling, 2000).

The games were organized in august and the city of Elis was responsible for the organization because the city of Elis was in a central position. In the months of august, fields were harvested and so, people used to have more time for enjoy (Ustel, 2005). The Olympic Games were a meeting place for poets, artists, philosophers, historians and others (Crowther, 2001).

On the other hand, these collective games that were conducted as a contest in Greece had a religious meaning (Afşar, 2001). The games were conducted to honor Zeus, the great God of Greek mythology (Swaddling, 2000). The ancient Greeks believed that the gods themselves were present and followed the games, enjoying the sight of the beautiful bodies of the athletes who were competing in their honor. The games were a prominent institution in ancient Greece with a major role in the development of society, politics and arts. In particular, they contributed to success by creating leading personalities, which is one of the outcomes of sport and competition (www.olympic.org). On the other hand, Olympic games had been a historical sign for the archaic Greece world. The year of 776 B.C. when the first Olympic games were played was the first recorded date, because names of the winners were officially recorded (Andronicos, 1985).

It is well known that the prevailing education of young men in ancient times prepared them in a natural way to become strong, to have fortitude and endurance. Education aimed at serving the interests of the state and these dictated the development of “kalokagathos” citizens. “Kaloskagathos” was the youth who was beautiful and balanced in body and soul (Palaeologos, 1970). The word agon (contest) is rightly considered to be one of the key words for understanding the phenomenon of ancient Greek civilization (www.olympic.org).

Olympic Games were special because they brought the Greek world together (pan = all, hellene = Greek) at a time when Greece was not a single state, but a series of city-states (politically and economically independent communities). From Greece and the colonies (in Italy, North Africa and Asia Minor), people travelled to take part in or attend these Games, inspired by the shared feeling of belonging to the same culture or religion (Tom, 2007). Also Herakles, one of the legendary founders, believed that the Olympic festival would be the beginning of friendship among the Greeks (Crowther, 2001).

However, in 146 A.D., Romanians occupied Greece and caused the Olympics games to spoil by attending to the games. From this angle, it can be said that the games had lost their Panhellenistic features. After this date, people who were not Greek had been able to attend to the games. At first stage, Romanians did not appropriate and they were not interested in the games. Romanian people were effective on Greek society with their own custom and traditions and as a consequence of this, some cultural changes formed in social life of Greek people. In this date, Romanians changed the form of Olympics games by giving an aim out of sports targets and aims. So, the games became different that gladiators fight to each other and at the end one side dies (Seçilmiş, 2004).

Olympia

Figure 1. Ancient Greece Map



Olympia, the site of the ancient Olympic Games, the most splendid athletic festivity of ancient times developed into great athletic contests out of simple religious contests (Palaeologos, 1964).

Olympia attracted the greatest crowds for any kind of festival in Greece and the popularity of the Games began early in their history. All importance of Olympia comes from the games (Gillet, 1975) and Olympia was associated with the glory of Greece (Crowther, 2001). According to poet Pindar, Olympia was created by Herakles who was the super hero of Greek mythology. According to the legend, Herakles had created a plain and drew the borders of Altis, and he

started the first games for the honor of Zeus (www.nuveforum.net).

Going to Olympia was meaning to circumambulate the grove that is known as Altis that is the holiest place belonging to Zeus. Because of that, there is no other place as Olympia in modern sport and Olympia is a place that was combining the sport institutions and temple (Swaddling, 2000).

Old Olympia was formed by three sections. The first section was the religious part and temples that are done for Zeus, Meter and Hera, Zeus horses, holly olive tree which championship crown was made from its branches and ascribed to Herakles, horses belonging to Hera and Meter, the grave in which hero Pelops is buried, the monument belonging to Filip who is father of Alexander, buildings in which treasures are hidden and hundreds of statues that are done for the memory of Greek Gods especially Zeus and champions of Olympics were in it (Tmok, 1988).

And in the second section of Olympia, there were Palestra in which the athletes were training, Gymnasium, bathrooms, swimming pool, the building belonging to the priests working in Olympia, the workshop of Fidiyas, the great sculptor who made the statue of Zeus, the building in which the Olympic council was assembled and the archives were stored (Tmok, 1985; Tmok, 1988).

The third section was the field on which Olympics contests were conducted and there were Stadium, hippodrome and horses belonging to Demeter in it. Except the place on which the Olympics referees and Demeter nun used to sit, the audiences used to sit on the ridge surrounding the stadium and watch the contests (Tmok, 1988).

The promoting feature of all archaic and Greece cities was the sports centers called as "Gymnasium" (Segal, 1987). Body building had an important role in Greek life style. Because of that, it was necessary to reserve a free field for children and young boys to run, to ride horse, to box, to wrestle, to throw discus or play football. More than being a building contrasted as traditional, Gymnasium must be considered as a wide sports complex. As well as physical education, gymnasium was the center of mental education (Wycherley, 1986).

In the Gymnasium, the lessons used to be conducted with wrestle, box, discus throw, throwing jeered, long jump and stadia (200 m) running studies under the control of the teachers until noon. And afternoon, language and grammar, speaking, geography, math, philosophy and music lessons were given. The administrator of the Gymnasium was called as "Gymnasiarkhos" and was honored with golden crown (Serdaroğlu, 1996). Gymnasiums were places more than school. It used to serve for not only the education of children, young people and young boys, but also for the education of adults (Urlich, 1996).

The Gymnasium in Olympia was constructed in the second century B.C.. The sports saloon was too long because there was a coupled running track of 192,28 m in its gallery, with east column same with the one in the stadium. While preparing for the games, the athletes could train on the smooth soil in too hot and rainy weathers. The court of the sports saloon was so wide that there were extra running tracks, fields for throwing discus and jeered (Swaddling, 2000).

At first times of body building applications, the word "Dromos" (Training field); during the times when a simple wrestle field was used for studies, the word "Palaestra" indicated the whole institution. As the types of body building had increased with time, special fields were needed for each type and because of that the difference between Palaestra and Gymnasium was identified. Then Palestra was identified as a part of Gymnasium and a place that was flatted with soft sand (Alpman, 1972).

There was no stadium in the first years of Ancient Olympics in Olympia. The athletes used to use a line drawn on the sand on ground and they used to run on a road that was big enough. These simple arrangements were enough for the first centuries of the Olympics. As a consequence of the slow developments, a main stadium was constructed in Altis. And then, in about 350 B.C., a brand new wonderful stadium was constructed. The track in the stadium was flatted with a tiny sand layer made of clay. The thresholds placed through the two ends were showing the start and finish points. The length of the track was 600 olympic fit (192,28 meter). According to the mythology, this distance was identified with Herakles's sequential 600 steps (Swaddling, 20000).

Before the Games: The Regulations & Instructions

The regulations and the instructions which were set for the Olympic Games are called by Pindar "The Ordinances of Zeus". Early the contestants had to be Greeks. Participation was not permitted to slaves and non-Greek. Also, the contestants must not have been declared as dishonorable or convicted for crime. Every athlete who wished to take part in the Olympic Games had also had to prove that he had trained for ten months prior to the games (Palaeologos, 1964; Yalouris, 1998; Karaküçük, 1989).

Athletes who wished to take part in the games at Olympia had to stay in Elis for at least one month to go through the necessary testing procedure and they registered personally in Elis when they felt they were capable of competing at the highest level (Pleket, 2004). Finally during their stay in Elis they had to train in the city's spacious gymnasia and palaestra and be briefed on the rules which governed the games. Then they were divided into groups and categories

depending on their age and the event in which they would be competing. It is worth nothing that from the moment on athlete was admitted to the games and entered in a specific age group for an event, it was strictly forbidden for him to withdraw and any transgressors would be severely punished (Yalouris, 1998). Although slaves were not allowed in the Crown games, they could enter some local festivals (Crowther, 2001).

One of another regulation was women's prohibition from attending the Games and the stadium. Only one woman could enter the stadium and she was the priestess of the Temple of Demetra and she had a special seat at an altar opposite the seats of the judges (Palaeologos, 1964).

Another important issue of the Olympics was the referees. The referees (Hellanodikai) used to swear that they will act justly and they will hide the information about the competitors. They were totally responsible for applying the rules and they were both defenders of justice and referees; they were also executing in a violation. Punishments were very hard; the contesters and trainers who violated the rules were punished as done to slaves. They were whipped in public by "Mastigophorai" (Whippers). When the most disgusting crimes, for example bribing was seen, sometimes hard punishments were applied. On counter to the potential criminals, the income from these punishments was used in the financing of the bronze Zeus statue on the terrace wall at the entry of the stadium. In the absence of methods such as photo finish, to define the winner was too hard in horse race contests. In situations of equality, the crown was given to the gods. There was only one winner and it was not important to be second or the third one (Swadding, 2000).

Transportation

Transportation for The Games was difficult even for the elite (Crowther, 2001). The athletes and spectators who came to Olympia were usually members of the ruling class from all the Greek cities of Greece, lower Italy, North Africa and Asia Minor. They all traveled on foot, by coach or by boat and often needed several days before reaching their destination. A Greek from Marseilles would spend about 10 days on the boat, while an Athenian would have to walk for one week approximately (Valavanis, 2009). A journey from the west (Lower Italy, North Africa, Asia Minor) would have taken a minimum of a few days and perhaps weeks, depending on winds, storms, piracy, the availability of boats and other variables (Crowther, 2001). Traveling was also difficult and dangerous because of robbers and pirates, getting to Olympia from far away regions must have been a tough decision (Valavanis, 2009).

The Games: Beginnings and Evidence

The Olympics were conducted as one in four years and the time line between two Olympics were called as "Olympias". (www.e-kütüphane.teb.org.tr). The Olympics were generally conducted in summer months and August and September were the best time because agricultural activities were stable (Şentürk, 2003). Although the early Olympics had only one event and lasted just one day; The Olympics was a five-day long event including competitions for running, wrestling, horse racing, chariot races and the pentathlon (Yalouris, 1998; Chakley, Essex, 1999; www.mpf.org.tr).

At least ten months before each Game, the state of Elis sent its official heralds to all the city-states of continental Greece, the island and colonies to the East and to the West, to announce the exact date of the opening of the games. This also marked the beginning of the truce which lasted for about three months. During that period, all hostilities had to stop between Greek cities to allow people who attended the games as competitors or spectators to travel from their homeland to Olympia and back, even though enemy territory, without any risk (Yalouris, 1998).

Table- 1.Olympic events and their introduction to the games

Year	Number of Games	Event Introduced
776 BC	1	Stade
724 BC	14	Diaulos
720 BC	15	Dolichos
708 BC	18	Wrestling and pentathlon
688 BC	23	Boxing
680 BC	25	Chariot race for four horses
648 BC	33	Horse race and pankration
632 BC	37	Stade and wrestling for boys
628 BC	38	Pentathlon for boys (discontinued 628 BC)
616 BC	41	Boxing for boys
520 BC	65	Hoplite race
500 BC	70	Race for mule carts (discontinued 444 BC)
496 BC	71	Race for mares (discontinued 444 BC)
408 BC	93	Chariot race for two horses
396 BC	96	Contest for heralds and trumpeters
384 BC	99	Chariot race for four colts
268 BC	128	Chariot race for two colts
256 BC	131	Colt race
200 BC	145	Pankration for boys

(Reference: Toohey & Veal, 2007)

The athletic contests fell into two categories: the “light” and the “heavy” events. The former essentially consisted of footraces and the pentathlon. There were three major footraces: the stadion, the diaulos (= two stadia) and a long distance race called the dolichos. The ancient stadion was rectangle with a linear track; its length varied from place to place between 180 and 190 m (Pleket, 2004).

The second category was that of the heavy sports, significantly also termed “combat sports”; wrestling, boxing- a combination of those two, with a bit of judo thrown in- the *pankration*, in which everything seems to have been allowed except biting and gouging one’s opponent’s eyes. Boxing and pankration were really tough and bloody. There were neither weight-classes nor a limited number of rounds (Pleket, 2004).

Women in Olympics

“There is a hard mountain on the road of Olympia. Its name is “Typaeum” and according to the law of Elis, each woman who is discovered to attend to the Olympics will be thrown as on head from this mountain.” That means, women cannot attend to the Olympics games (Pausanias).

Women were not allowed to attend to the Olympics but this was not an obstacle for them to be active indirectly. As horse owners, they could not be stopped to attend to cart races. It is also known that some women did this in Olympia. The first and the most famous one of them was “Kyniska” who was daughter of “Archidamos” who was the king of Sparta (Swaddling, 2000).

Also one married woman, “Kallipateira” or “Pherenike”, was recorded to had been admitted to the games, although the authorities were initially unaware of her sex, as she said disguised herself as a male athlete. Fortunately, because of previous Olympic boxing victories by her father, brother and son, she didn’t sentence to death punishment (Toohey, Veal, 2007).

Only one married woman could watch the Olympics and that was “Nun Demeter Chamyne”. The marble altar of the goddess was placed on the north side and half road of the stadium and Demeter Chamyne was watching the games from here. Demeter was the god of plant and abundance (Swaddling, 2000).

Heraia Games

With the exception of the priestess of Demeter Chamyne, women were banned from the men’s Olympic Games. The girls had their own games, the Heraia (Mouratidis, 1988, Saltuk, 1995). Heraia games were a part of Olympia reserved only for women. For the honor of the greatest goddess, this contest was conducted in each four years just before or after the Olympic Games. The fests started with a religious ceremony. The only contest of the fests was 160 m running to which only unmarried women can attend. In this contest, girls could not race naked as boys but by wearing the dress called as “Chiton” (Swaddling, 2000).

But the exclusion of women from the Olympic Games was due to some religious taboo rather than to any sense of modesty or decorum because women in Ionia attended the Delian Festival in honour of Apollo, and in Sparta they participated in athletic exercises with boys (Mouratidis, 1984).

Cultural Heritage of Olympic Games

The ancient Olympic Games, as we say at the beginning, were celebrated for the first time in 776 BC (although it is possible that this was merely a reorganization of a festival that had existed before) and were closed probably in 393 AD when the Emperor Theodosius 1st prohibited the celebration of pagan festivals. His son, Emperor Theodosius 2nd decreed the destruction of the temples and the sanctuaries some thirty years later (Gomez, 1997).

Following Theodosius’ decree, little by little pagan cults began to disappear and the Games were progressively abandoned. An agricultural settlement grew over the ruins of Olympia, with a church and several modest workshops. This city was abandoned during the 7th century AD and the site gradually disappeared under several metres of earth (Gomez, 1997).

The contests that were conducted in Olympia among the Greek people in each four years (Ancient Olympics) are accepted as the beginning of the sport events of today (Iskan, 1988). On the other hand, it is necessary to remember the main two issues in Ancient Olympics. One of that is a context that is called as “Arete” and meaning “Power” that had a role in Greek philosophy. This power would defeat your enemy in war and your rival in Olympics. And the other issue is the context of sponsorship that has been newly understood even in today’s world (Koryürek, 1976).

In old Greece, champions of Ancient Olympics were called with the cities names on behalf of which they attend. Almost all cities that have the opportunity to support a champion or to save a young boy to whom they believe, that he will be the champion, used to use their all power to make these young boys race on behalf of them. And in order to

deserve this generous act of cities, these champions used to accept the sport as a job. According to this situation, in old Greece, all champions were professional from all angles and they used to live with the support that they gain from sports and contests (Koryürek, 1976). But the importance given to the championship, cannot be compared with today's understanding (Koryürek, 1976).

From the first periods, the Olympic Games were a social event that was assisting the development of the sports (Sentürk, 2003). In order to make the champions immortal, to make their statue was a tradition. These statues, most of which were made of bronze that was known as the most durable material, were melted for different usages because of the value of this material. For centuries, even if thousands of statues in holy places of Greece have been stolen and most of them have been decorating collections of Roman aristocracies, at the end, most of them have been destroyed (Swaddling, 2000).

As the time passes, it is possible that Olympics Games were affected from other neighbor cultures (Koryürek, 1976; Karaküçük, 1988). For example, Hittites' principle, the aim is to win, was generally seen in Ancient Olympics. In the documents, it is obvious that we can only see the names of winners; there is no name of the losers (Koryürek, 1976).

It is totally normal to see some beliefs of Hittite civilization took place in Olympics. Geographical nearness has importance on Ancient Olympics ceremonies and philosophy as well as cultures and beliefs. In society of Hittite, the double contradiction is considered as hotness-coldness, day-night and goodness-badness. This understanding was accepted as the superiority of "goodness" on "badness" and maybe because of this, while name of the winner was made almost holy, even name of the loser was not used in Ancient Olympics (Koryürek, 1976). Another issue on which historians emphasize is that the sports took place in Olympics organizations had been done for centuries and these sports were not discovered by Greek people but they came from Mesopotamia, Anatolia and Aegean regions.

As a result, we can consider Ancient Olympics as social issues that were used to assemble the Greek people. And in order to carry the legendary motion of Ancient Olympics and the champions, statues of the successful champions, who had been legends, were made in different cities (Koryürek, 1976). To the Greeks, the Olympic Games were something so solemn that we have no equivalent to them today (Durantez, 1985).

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Effects of Creatine Supplementation on Motor Performance in Female Futsal Players

Halit Harmancı [1], Arslan Kalkavan, Mihri Barış Karavelioğlu, Aydın Şentürk [2]

[1] 1School of Physical Education and Sport, tel: 090 5056789126, e-mail:halitharmanci@hotmail.com, Kutahya, Turkey

[2] 1School of Physical Education and Sport, Kutahya, Turkey

ABSTRACT

The purpose of this study was to determine the effects of 15-day creatine supplementation on motor performance (20 m. sprint, squat jump, 30 s. repetitive vertical jumping, Wingate anaerobic power and capacity test, hand grip strength and back strength) of female soccer players. 28 female futsal players (age: 21,17±1,27 years) volunteered to participate in this investigation. Participants were randomly assigned to either creatine group (CR) or placebo group (PG). The Creatine group (CR) received creatine monohydrate supplementation for 15 days with a dose of 20 g for the first 5 days and 5 g for the following 10 days. Maltodextrine was given in the same amount to the placebo group (PG). Significant differences were found for 20 m. sprint, squat jump, 30 s. repetitive vertical jumping, Wingate anaerobic power and capacity test results ($p < 0,05$), but no significant performance changes were found for right and left hand grip strength and back strength results after the creatine supplementation. No significant changes in the placebo group were observed in all performance tests following the 15 days experiment.

Keywords: *Creatine supplementation, exercise performance, futsal players, female athletes*

INTRODUCTION

Futsal is an indoor sport played in two periods of 20 min, including one goalkeeper and four outfield players in each team (Milanez et al., 2011). Physical demands of the futsal match can be very high (Barnes et al., 2007). Futsal played at the professional level is a high-intensity exercise heavily taxing the aerobic and anaerobic pathways (Castagna et al., 2006).

ATP (adenosine triphosphate) and PCr (phosphocreatine) are the primary sources of energy for high-intensity exercise (Balsom et al., 1993; Casey et al., 1996; Brooks et al., 1999; Manchado et al., 2008). Firstly, muscle contraction is fuelled by free adenosine-tri-phosphate (ATP) as the immediate energy source (Brooks et al., 1999). During anaerobic activity, the muscles first use the available ATP stores which are hydrolyzed during the process with the production of ADP, inorganic phosphate and hydrogen ions (Herda et al., 2009). ATP stores in muscle cells are limited and will deplete in 1 to 2 seconds unless restored (Sharma, 2010). PCr is a metabolite that supplies a reserve of energy used to regenerate ATP as a result of muscle contraction (Brooks et al., 1999; Kang, 2008) and plays a central role in the maintenance of power output during high intensity exercise (Rossiter et al., 1996).

Creatine is endogenously synthesized in the liver and naturally ingested through omnivorous diets such as meat (Schoch et al., 2006). It is transported via the circulatory system to the muscle cells. Creatine, when phosphorylated to form creatine phosphate (CrP) provides a source of high energy phosphate for the regeneration of adenosine triphosphate (ATP) during high intensity exercise (Burke et al., 2003). Creatine is synthesized from three amino acids, arginine, glycine and methionine, with the majority stored in skeletal muscle. Creatine monohydrate is the most widely used supplements form for improving athletic performance (Bemben and Lamont, 2005). Researchers have studied many different creatine loading programs, with the most common programme involving an initial loading phase of 20

g/day for 5–7 days, followed by a maintenance phase of 3–5 g/day for differing periods of time (Greenhaff et al, 1994; Hultman et al., 1996; Balsom and Sjödén, 1995).

MATERIAL AND METHODS

Participants: Twenty-eight female futsal players (age: $21,17 \pm 1,27$ years, body mass: $57,14 \pm 6,57$ kg, body height: $166,33 \pm 6,09$ cm) volunteered to participate in this investigation. Subjects were informed about the study objective and signed an informed consent form. Before the data were collected participants were familiarized with test procedures.

Measurement and Procedure: A randomized, double-blind, placebo-controlled study design was carried out. The subjects were randomly divided into two groups: Creatine Group ($n=14$) and Placebo Group ($n=14$). The Creatine group (CR) received creatine monohydrate supplementation four times per day (after breakfast, lunch, dinner and before bedtime) for 15 days with a dose of 4×5 g for the first 5 days and 5 g for the following 10 days. Maltodextrine was given in the same amount to the placebo group (PG). Subjects were instructed to consume their supplement dissolved in a 200 ml. of fruit juice. Performance of the tested subjects was evaluated before and after the supplementation period. Each subject visited the laboratory 4 times. The first visit consisted of grip strength, back strength, squat jump and 30 s repetitive vertical jumping evaluations. The second visit performed 4 hours later consisted of the 20 m sprint and the 30 s Wingate test. After the 15 days of supplementation, the testing procedures were repeated in the same order.

Grip Strength: The grip strength of both right and left hands was measured using a digital hand dynamometer (TKK 5401, Takei Scientific Instruments, Japan) in a standing position with the shoulder adducted and elbow in full extension. The subjects were asked to squeeze the dynamometer with as much force as possible with both dominant and non-dominant hands. The maximum values obtained during the three trials from each hand were used for further statistical analysis.

Back Strength: Isometric back strength of the subjects was measured with a digital back dynamometer (TKK 5402, Takei Scientific Instruments, Japan). Back strength was measured with the subjects standing in a slightly forward-bent position. Three attempts were made by all subjects with the best score registered.

20 meter Sprint: The 20 meter sprint was measured using an electronic timing system (Newtest Powertimer, Finland) following a 10 min warm-up. Subjects were required to run between markers placed 20 m apart in a sports hall. The athletes were asked to perform two maximum 20 m sprints with a 5 min passive recovery between the attempts. The better performance obtained during the two trials was used for statistical analysis.

Jumping Measurements: The squat and 30 s repetitive vertical jumping tests were performed on a force platform (Newtest Powertimer, Finland). The squat jump started from a half-squat position with a knee angle of 90° . Subjects were asked to jump as high as possible. The jump was repeated two times, and the better performance was recorded.

Wingate Test: Anaerobic power and capacity output were measured by the 30 s Wingate test (Monark 894 E Peak Bike, Sweden). Prior to the Wingate test a 5 min warm-up was performed at a standardized workload 1 kg of resistance at 60-70 RPM. Seat and handlebar adjustment was made for each subject. The test was started after the external resistance was adjusted to 7,5 % of each subject's body mass. Subjects were asked to reach a maximal pace of unloaded sprinting as fast as possible. When the pedal speed reached 150 rev / min, the weight basket automatically fell down and the test was started. The subjects were instructed to pedal as fast as possible from the onset of the test. The athletes were encouraged verbally during the test to maintain a high frequency. The following variables were registered from the Wingate test: Absolute Anaerobic Power (Wt), Absolute Anaerobic Capacity (Wt), Relative Anaerobic Power (Wt/kg) and Relative Anaerobic Capacity (Wt/kg).

Statistical Analyses: Descriptive statistics for all variables were expressed as mean \pm SD. Paired Samples T test was used to determine whether there is a significant performance differences in initial and post creatine supplementation conditions. One way ANOVA was used to determine whether there are significant differences between creatine and control groups before and after the supplementation periods. Statistical analysis of the measurements was performed by using SPSS 17 for Windows and the statistical significance was set at $p < 0.05$.

RESULTS

The mean age, body height and body mass of the female futsal players were $21,17 \pm 1,27$ years, $166,33 \pm 6,09$ cm., $57,14 \pm 6,57$ kg., respectively.

Exercise performance results of the futsal players before and after the creatine ingestion are presented in Table 1.

Table 1. Pre and post experimental values of physical fitness test after the creatine supplementation

Variables		Pretest	Posttest	t	F (Group)
		(Mean±SD)	(Mean±SD)		
20 m sprint (s)	Creatine Group (CP)	3,43±0,19	3,22±0,15¥,¥¥	4,47*	17,317**
	Placebo Group (PG)	3,59±0,16	3,61±0,24	-0,57	
Absolute wingate anaerobic power (Wt)	Creatine Group (CP)	513,43±55,44#	536,06±68,89¥,¥¥	-2,85*	11,503**
	Placebo Group (PG)	448,47±43,50	457,44±60,13	-1,27	
Relative wingate anaerobic power (Wt/kg)	Creatine Group (CP)	8,65±0,98	9,04±1,27	-2,83*	2,35
	Placebo Group (PG)	8,24±0,63	8,38±0,79	-1,17	
Absolute wingate anaerobic capacity (Wt)	Creatine Group (CP)	372,48±35,45	386,90±40,80¥,¥¥	-2,86*	9,643**
	Placebo Group (PG)	332,30±40,40	331,18±50,19	-0,20	
Relative wingate anaerobic capacity (Wt/kg)	Creatine Group (CP)	6,28±0,68	6,51±0,67	-3,03*	1,519
	Placebo Group (PG)	6,11±0,68	6,06±0,70	-0,50	
Squat jumping power (Wt)	Creatine Group (CP)	1839,78±256,98	2599,35±317,98¥,¥¥	-6,78*	8,522**
	Placebo Group (PG)	1959,71±465,55	1830,28±385,66	1,09	
30 s repetitive vertical jumping power (Wt)	Creatine Group (CP)	977,65±301,59	1189,29±339,38	-2,36*	1,107
	Placebo Group (PG)	1295,25±452,40	1182,83±56,386	1,21	
Right hand grip strength (kg)	Creatine Group (CP)	30,67±4,11	30,09±3,52	0,81	0,798
	Placebo Group (PG)	28,57±4,92	28,30±4,91	0,45	
Left hand grip strength (kg)	Creatine Group (CP)	28,11±3,42	27,61±3,09	0,73	1,479
	Placebo Group (PG)	26,93±4,26	26,43±3,79	0,94	
Back strength (kg)	Creatine Group (CP)	101,78±16,09#,#	107,53±17,24¥,¥¥	-1,80	14,954**
	Placebo Group (PG)	80,02±17,11	82,32±17,77	-0,78	

P<0,05*- There was a significant difference between pretest and posttest values.

P<0,05**- There was a significant difference between Creatine Group and Placebo Group's values.

- There was a significant difference between Creatine Group and Placebo Group's pretest values.

- There a significant difference between Creatine Group's pretest values and Placebo Group's posttest values.

¥ - There a significant difference between Creatine Group's posttest values and Placebo Group's pretest values.

¥¥ - There was a significant difference between Creatine Group's posttest values and Placebo Group's posttest values.

Test results show that significant differences were found for 20 m. sprint, squat jump power, 30 s. repetitive vertical jumping power, relative Wingate anaerobic power, relative anaerobic capacity, absolute anaerobic power and absolute anaerobic capacity ($p < 0,05$), but no significant performance changes were found for right and left hand grip strength and back strength results after the creatine supplementation (Table 1). No significant changes in the placebo group were observed in all performance tests following the 15 days experiment. The One-way ANOVA test indicated that there are significant differences in terms of absolute anaerobic power and back strength scores between creatine and control groups before the supplementation periods ($p < 0,05$) (Table 1).

DISCUSSION AND CONCLUSION

Some activities as well as soccer, cross-country running and biking require high-intensity bursts of speed and power during the competition (Biber et al., 2003). Due to its specific characteristic, futsal contain high intensity short-term movements. Several creatine supplementation studies have shown that oral ingestion of creatine monohydrate can enhance burst of speed sport performance (Pearson et al., 1999; Biber et al., 2003). The aim of our study was to determine the effects of creatine supplementation on motor performance in female futsal players. The results of this study demonstrate that a 15-day creatine supplementation produced significant improvements in 20 m. sprint, squat jump, 30 s. repetitive vertical jumping, relative anaerobic power, relative anaerobic capacity, absolute anaerobic power and absolute anaerobic capacity. These results are consistent with similar studies that investigated the effects of short or long-term Cr supplementation. For instance, Kirksey et al. (1999) randomly assigned 36 male and female track and field athletes to either placebo or creatine groups to examine the effect of six weeks creatine supplementation on using 5 X 10-second maximum cycle sprints. After supplementation period; they found a significant improvement in cycle performance. Law et al. (2009) investigated the effects of 20 g of creatine loading with resistance training during a 5 day period. They found that there were significant differences in peak power and average power after the 5 days of supplementation. Herda et al. (2009) examined the effects of a moderate dose of creatine monohydrate (CM) and two smaller doses of polyethylene glycosylated (PEG) creatine on muscular strength, endurance, and power output during a 30-day supplementation period. After the 30-day creatine supplementation, they found significant increases in absolute average power, absolute mean power, relative average power and relative mean power evaluated by the Wingate test. In contrast to our study, Hoffman et al. (2005) examined the effects of 6-days of creatine monohydrate supplementation on repeated three 15 s Wingate tests, found no significant differences in peak and mean power. In this study, the authors used much lower dose of creatine (6 g of creatine monohydrate per day).

Previous investigations (Skare et al., 2001; Cox et al., 2002) have demonstrated increases in sprint performance after various doses and durations of creatine supplementation. Cox et al. (2002) investigated the effects of acute creatine supplementation on repeated 20 m sprint performance of elite female soccer players. After the initial testing session, subjects were assigned to either a creatine (5 g of Cr, 4 times per day for 6 days) or a placebo group. After the experiment, the Creatine group had better repeated sprint performance than the Placebo group. Skare et al. (2001) examined the effects of 20 gr of creatine and glucose supplementation on 100 m sprint performance of elite male sprinters during 5 days of supplementation. After the 5-day creatine supplementation, significant improvement in sprint performance was observed in creatine groups.

Previous investigations have demonstrated increases in squat jumping and repetitive vertical jumping performance (Haff et al., 2000; Ostojic, 2004; Stone et al., 1999; Herda et al., 2009) after creatine supplementation. Haff et al. (2000) investigated the effect of 6 weeks of oral creatine monohydrate ingestion accompanied by a periodized weight-training program on jumping performance. 16 male and 20 female athletes were randomly assigned to either placebo or creatine groups. The consequences of their study highlighted that creatine supplementation can fairly raise counter movement jumping performance in track athletes. Ostojic (2005) examined the effects of acute creatine-monohydrate supplementation on soccer-specific performance in youth athletes. The subjects were divided into a creatine-monohydrate (3 x 10 g/d) group or a placebo group for 7 days. After the supplementation protocol, a significant improvement in vertical jump height was observed in the creatine groups. Stone et al. (1999) demonstrated the efficacy of two dietary supplements on measures of body mass, body composition, and performance in 42 American football players. After the 5 weeks supplementation period, subjects that ingested creatine showed significantly greater increases for static vertical jump power output. Herda et al., (2009) found a significant improvement in countermovement vertical jump after the 30-day supplementation period.

We demonstrated that creatine supplementation did not affect hand grip (right and left hand) and back strength results. Our results are consistent with similar studies (Mihic et al., 2000; Gotshalk et al., 2008; Urbanski et al., 1999) that investigated the effects of Cr supplementation on isometric hand grip strength. In our study, a lack of meaningful differences in hand grip and back strength values of the futsal players could be due to the more intense use of the muscles of the upper extremities in comparison to the upper extremities during a 15-day creatine supplementation. Indeed, the strength of the back muscles and the fingers may be insignificant for performance in futsal. Patlar et al.

(2010) stated that the use of lower extremities more effectively in soccer may not provide a significant increase in back strength. Strength and power in leg muscles are important factors for soccer players (Bangsbo et al., 1991). Maximal leg strength is of great importance to soccer abilities such as jumping, sprinting, stopping and changing direction. Football players use numerous explosive bursts such as kicking, tackling, jumping, turning, sprinting, and changing pace during a football game (Bangsbo et al., 2006). Many studies on the soccer kick emphasized the importance of maximum power of lower limb muscle and coordination between agonist and (vastus lateralis and medialis, rectus femoris, tibialis anterior and m. iliopsoas) and antagonist muscle groups (gluteus maximus, biceps femoris and semitendinosus) during the kick (De Proft et al., 1988; Isokawa and Lees, 1988; Lees and Nolan, 1998; Manolopoulos et al., 2006). Therefore, the use of lower extremities has a positive effect on speed, acceleration and soccer-specific skills (Strølen et al., 2005).

As a result of this study, we can be expressed that a dose of 20 g for the first 5 days and 5 g for the following 10 days creatine monohydrate supplementation has positive effects on motor activities such as speed, agility and explosive strength characteristics of the female futsal players.

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Postural Sway Distinguishes Shooting Accuracy among Skilled Recurve Archers

Khairi Zawi [1], Muhamad Noor Mohamed[2]

[1] Faculty of Education
National University of Malaysia
khairiz@ukm.my

[2] Universiti Teknologi MARA

ABSTRACT

Postural movements affect aiming stability in archery, thus contributing to performance inconsistencies. A critical variable distinguishing highly skilled athletes from the novices is the former's ability to manipulate minute changes in their performance. Hence, the present study seeks to examine potential relationship that underlies postural sway and shooting performance amongst Malaysian skilled recurve archers. Twenty one archers participated in this study. Postural sway was assessed in terms of anterior and posterior deviation during motion. Sway analyses involved setup, aiming, and release phases. Participants were required to shoot 12 arrows to a 30-meter target. Data yielded significant relationship between postural sway and shooting accuracy. Correlation coefficients between shooting performance and postural sway ranged between $r = -0.021$ to 0.248 ; with highest correlation during release, and lowest during aiming phases. Setup phase showed the only anterior deviation throughout the test. During setup and release phases, correlation between postural sway with shooting performance was significant. Postural sway during setup and release phases is a significant indicator for shooting performance, accounting 17% and 24% of variances respectively. Findings indicated postural sway reduction during release phase improves shooting accuracy, thus establishing a significant relationship between postural sway values with shooting performance of skilled archers.

Keywords: *Aiming stability, postural sway, skilled archers, shooting performance.*

INTRODUCTION

Major performance variables in archery include muscular strength, upper body endurance and overall body stability. These performance variables are crucial specifically at the trunk region, shoulder girdle, and for both arms to ensure shooting accuracy (Ertan, 2009; Soylu, Ertan & Korkusuz, 2006). Besides strength and endurance, postural stability is another critical aspect in influencing the outcome of every shot. Assessment of an archer's skill is centred on the ability to shoot the arrow to a specific target within a designated time frame. Here, archers need to minimize their movements in each action phase in order to avoid unnecessary motion during the shooting action. Such movements reduce stability, thus minimizing chances of hitting the centre target. Movements in archery must be as precise as possible, coping fast with postural instability (Kuo, Chi, Yu, & Tsung., 2005; Ertan, 2009; Ertan, Kentel, Tumer, & Korkusuz, 2003; Kuo & Chi, 2005).

One of the crucial subcomponent in maintaining shooting stability is aiming stability. Attaining high level of postural stability during aiming increases the aiming stability of an archer. Aiming stability, defined as the locus pattern of aiming, ensures uninterrupted flight trajectory to the target. This particular situation gives impact to the performance outcome (Kuo *et al.*, 2005). It is noted that the expert archer's aiming locus is much smaller in contrast to the novice archers (Ertan *et al.*, 2003; Ertan, 2009; Kuo *et al.*, 2005). Archers, regardless of their performance level, are affected by postural sway (Era, Konttinen, Mehto, Saarela, & Lyytinen, 1996; Ball, Best, Wrigley, 2003; Mononen, Konttinen,

Viitasalo, & Era, 2007). The most important phase in determining the success of every shot in archery is the aim and release phase, followed by the follow-through phase. Once an archer draws the bow and aim at the target, he or she tends to maintain the posture of the arms and trunk, keeping it fixated to ensure proper alignment of the arrow to the intended target. Hence, when postural sway are minimized, the archer may focus purely on the target, thereby enhancing shooting stability (Balasubramaniam, Riley, & Turvey., 2000). During performance, shooting stability needs to be maintained at the highest level in order to obtain a good and small score deviation.

Postural Sway and Aiming Stability

Posture can be defined as the geometric relationship that exists between different body segments (Balasubramaniam & Wing, 2002). In other words, posture encompasses body joints angles. For example, the right arm wrist and elbow angles describe the posture of string arm for right handed archers. Body posture serves two functions. Firstly, it serves as a standing position point of reference wherein posture works as antigravity and plays a major role in keeping body balance. The balancing function is affected by preventing falls through maintaining the centre of gravity within an individual (Fisher, 2010). As such, in normal standing positions, the postural control system's main function is to integrate the antigravity and balance functions of the body. Secondly, body posture functions as a reference framework for movements. It provides a framework for the head, torso, hip, legs and other body segments to move towards any specific target, or performing any movement (Fisher, 2010).

Highest score in archery is achieved by hitting the centre or within range of the centre of target. Archers need to control their movements at every action phase for precise aims and release arrows at accurate sighting points. Accurate sighting points can be achieved by maintaining or maximizing aiming stability. To sustain aiming stability at the highest level, archers need to maximise postural stability whilst controlling every other aspect in their aiming prior to shooting. Earlier research illustrated that increased aiming (and equipment) stability corresponded with increased in shooting scores. Besides equipment stability, postural stability also plays a major role in determining performance. Archers or shooters who are able to control their postural stability have a more stable platform in aiming, and this increases performance as compared to those who cannot control excessive postural sway (Mononen *et al.*, 2007).

Level of expertise plays a major role in determining whether archers are able to cope with postural sway. Era *et al.*, (1996) found that expert archers were able to rapidly stabilize postural stability compared to the novices. In the same study, highly skilled archers also demonstrated ability to maintain postural stability throughout the major action phases. This condition appears to be acquired through training and competitive experiences, thus enabling skilled archers to manipulate their posture in order to achieve positive outcomes. The present study seeks to examine possible causal relationship between postural sway and shooting performance among skilled archers.

METHOD

Participants

A total of 21 skilled archers from Peninsular Malaysia participated voluntarily in this study. The skilled archers comprised of both genders, and were aged between 13 to 25 years. However, gender and age were not treated as variables in this present study. All participants are considered skilled archers due to their qualification scores of 1150 upon 1440 full FITA score in either national or international rank competitions.

Instrumentation

Quantification of postural sway value was obtained using the Zephyr Bio-Harness device (model PSM Research version 1.5, single transmitter and receiver), with reported reliability of 0.758. The transmitter allowed transmission of live data feed. Subsequently, live data were transformed into graphs and figures in 10-second lengths per draw with 15 frames per second drawing feed. A laptop (model Toshiba Satellite L510, 3Gb ram capacity, 4.60Ghz processing capabilities) was used to compute all equations with software from Zephyr (version 2.3.0.5) that enabled comparison of multiple data and capturing real time data transmission. A digital video recorder (model Sony Handy cam DCR-SR68E) was used for video recording purposes. Every participant's shooting performance was recorded for further analyses.

Procedures

A shooting area was constructed at the respective testing sites. The shooting area prepared included two target butts and target stands that were situated 30 meters from the shooting line for official target practice and official data collection. Multiple 10-metre targets were set up for warming up prior to target practice and the official data collection period.

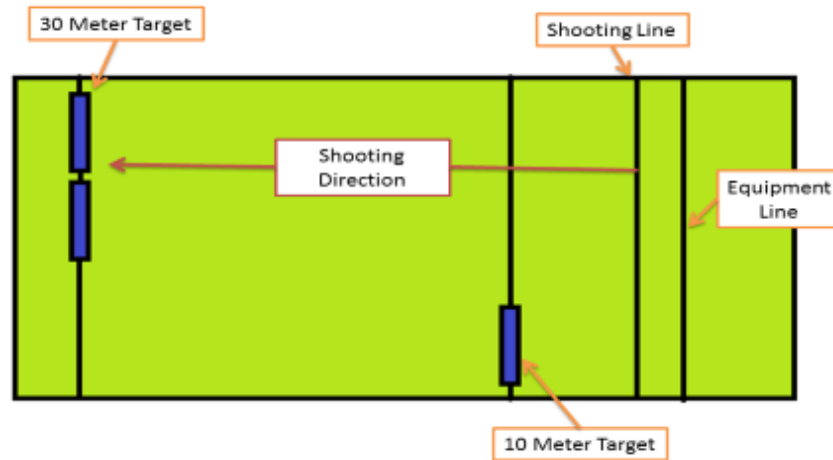


Figure 1: Shooting Area for Data Collection

Participants were briefed on the purpose of the study and the procedures involved. Letters of consent were signed a week before to waive any accidental occurrences during the test that are not related with the test protocols. The study was also approved by the UiTM research ethical committee (reference no: 600-RMI [5/16]). Prior to data collection, ample warming up time was given to the participants for short distance targets. This warming up session lasted 15 minutes. Participants were required to adhere to the shooting regulations, which limit long end shooting in a four-minute time period. Within the provided time frame, archers need to shoot a minimum of six arrows. Shooting speed usually correlates with the expertise level. Expert or skilled archers are usually able to shoot 10 to 12 arrows in the time limit provided.

After thorough familiarization with the test conditions, participants were given 12 arrows for target practice. They were required to shoot at the 30-meter target, with no score and postural sway value recorded. Twelve arrows were shot in two ends within a four-minute time period for each respective end. Participants paced their own shooting time according to their expertise level. Arrows that were shot after the time limit ended were considered as misses with zero (0) marks awarded.

Participants were then asked to complete 12 shots at the 30-meter target. Shooting cue was given by researchers. The target face used was the official FITA 80 cm 30-meter target. This target face consists of five colours and 11-point rings that reflect the score ranging from one to ten with the center ring marked as "X". This ring brings a score of ten and is considered as highly accurate compared to the actual outer ten rings.

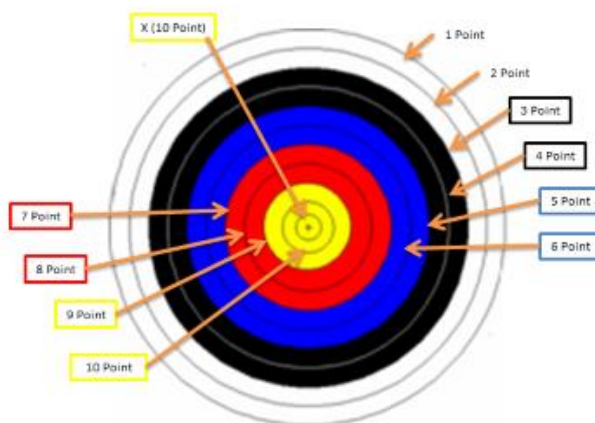


Figure 2: Target Face Diagram (Score Ring)

Since the use of equipment in archery at competitive level is personalized, participants were required to use their own bow and arrows for performance measurement purposes. Standardized prepared equipments by the researcher would inhibit participant's own shooting style and shooting performance would be affected due to the difference in ergonomics and equipment characteristics.

During testing, each participant was equipped with a Zephyr Bio-Harness device, worn on the xyphoid process under the sternum. The device belt is placed under the participant's shirt. Pilot study carried out showed that the device would not interfere with the bow string path, and would therefore not affect the shooting characteristics. All participants were allowed to shoot with their preferred position but stance techniques were limited as they were required to use the straight stance. After putting on the Bio-Harness, the participants were asked to stand still with full equipment on the shooting line for 10 seconds to obtain a standing-upright posture value. Subsequently, the participants shot an arrow each time they were given a start cue until they finished shooting all the 12 arrows. Whenever the participants were in the stance phase, they were given a "start" command and the data was collected by starting the recording of the live data transmitted by the device. The transmitting of the real-time data was stopped after the participants finished the release and follow-through phases of the six arrows or end. All of the phases took about four to ten seconds depending on the expertise and level of performance. In this study, performance was individually observed and was digitally recorded.

RESULTS

Participants' shooting performance was measured by their shooting scores from the twelve shots to the 30-meter target. The shooting scores ranged from zero to bulls eye (X, or ten points, the highest mark). Zero point was awarded if the participants missed the target face or the target, while the highest score was given to the participant that hits bulls-eye. Figure 3 depicted the score distribution between skilled and unskilled participants.

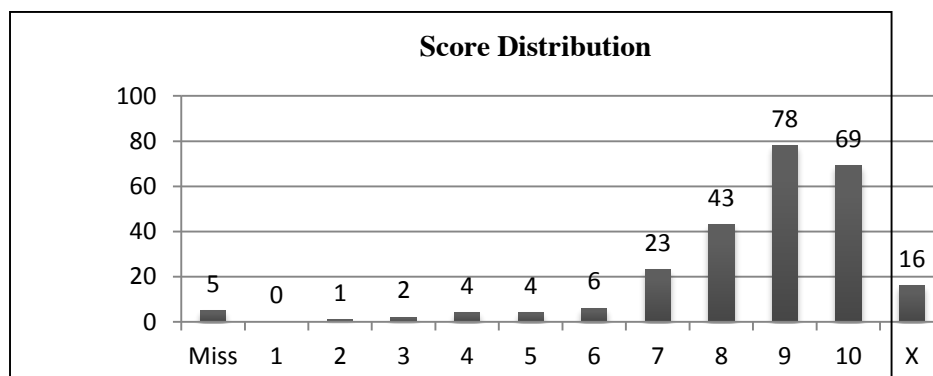


Figure 3: Score distribution of skilled archers

The mean score for the skilled group was 8.58 points. For this group, the highest score was nine points (31.0%) followed by 10 points (27.4%) and eight points (17.1%). Two percent from a total of five arrows that missed the target constitutes the lowest score for this group. The lowest percentage score obtained by the skilled participant group was four and five (1.6%). Data obtained from the study illustrates variances in postural sway characteristics throughout shooting performance. As shown in Table 1, the least sway recorded was during the setup phase and the highest was during the aiming phase. During the setup phase, the sway was positive which indicates the occurrence of swaying to the anterior while for the aiming and release phase, negative reading was recorded indicating posterior sway.

Table 1: Postural Sway Value (Mean \pm SD)

Phase	Postural Sway ($^{\circ}$)
Phase 1 (Setup)	0.01 \pm 7.532
Phase 2 (Aiming)	-1.56 \pm 4.129
Phase 3 (Release)	-0.71 \pm 4.675

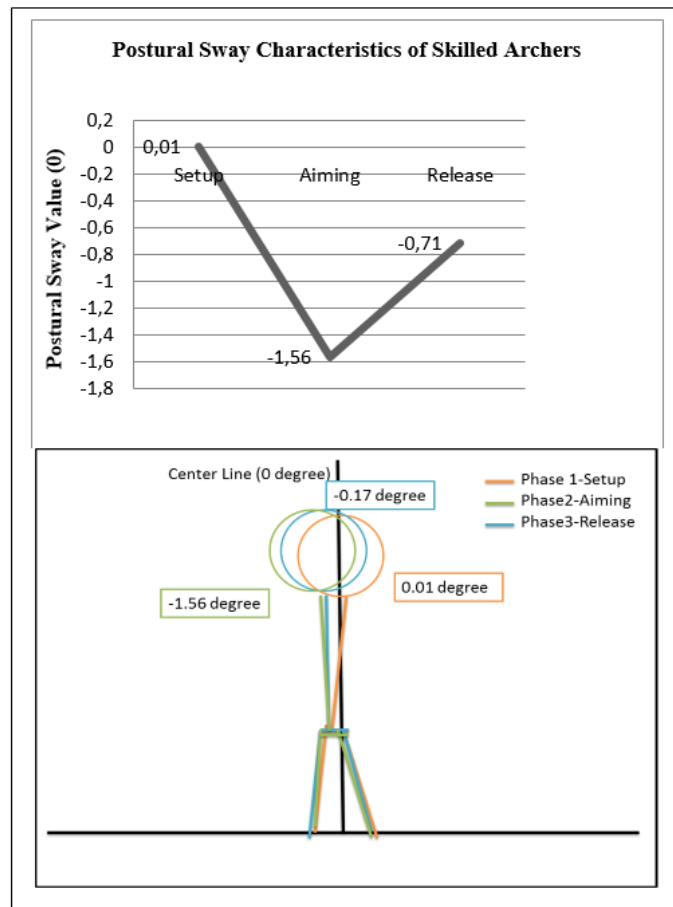


Figure 4: Diagram of Postural Sway Characteristics through Phases

Correlation analysis was applied to determine the relationship between postural sway during shooting phases and shooting performance. Results indicated that when body sway increases, shooting performance will decrease. Table 2 shows the correlations and significant value of variables which contributed to shooting score performance of Malaysian skilled archers. The highest correlations are exhibited by postural sway characteristics during the release phase with r value of 0.248 and reached a statistically significant state at ($p < .001$). The second highest relationship was documented by postural sway characteristics during the setup phase ($r = -0.221$) with a significant value of ($p < .001$).

Table 2: Correlations between Variables with Shooting Score

Variables	Pearson Correlation	p value
Posture 1 (Setup)	-.221*	.001
Posture 2 (Aiming)	-.021	.367
Posture 3 (Release)	.248*	.001

* Significant level ($p < .05$)

zAccording to Table 3, postural sway during the release phase contributes the most towards the model with standardized coefficients value of 0.262 ($p < .001$) with 23.8 percent partial correlation of overall model correlation. This variable provided a unique contribution to explain the shooting performance of the skilled group compared to other variables, when the variance explained by all other variables in the model was controlled. The second highest contributor towards the model was postural sway during the setup phase with standardized coefficients of -0.174 ($p = .008$) with 16.7 percent partial correlation value. Regression analysis indicated a significant result for the relationship between the model with shooting performance ($p < .001$). These data suggest that the model contributes towards shooting performance characteristics, thus indicating that there exists a significant relationship between postural sway

across shooting phases with the performance of arrow shoots of the skilled Malaysian recurve archers.

Table 3: Coefficients between Variables with Score for Skilled Group

Model	Standardized Coefficients	p value
	Beta	
Posture 1 (Setup)	-.174*	.008
Posture 2 (Aiming)	-.072	.309
Posture 3 (Release)	.262*	.001

* Significant level ($p < .05$)

Table 4 displayed the R Squared and adjusted R square value. For this model, the R square value was 0.105 which expresses a percentage of 10.5 per cent. This means that this model explains the 10.5 per cent of the variance in skilled group shooting performance. A coefficient test was conducted afterwards in order to seek the variable that contributes the most towards the relationship between the model and shooting performance.

Table 4: Model Summary for Skilled Group

Model	R Square	Adjusted R Square
Posture 1, Posture 2, Posture 3	.105	.094

DISCUSSION

The goal of this study was to determine whether postural sway affects shooting performance whilst examining the phase which directly affects shooting performance. Stuart and Atha's (1990) study which compared archers from different skilled levels and also examined those within the same level of performance revealed that the differences between skilled levels were smaller compared to differences between each respective shooting ends within each group. However, their research focused on movements of certain body parts such as the head, string arm elbow and bow handle. Prior studies also focused on the whole shooting process, while the current study examines the movements at three different phases of shooting.

The current study maintains ecological validity via measures of actual postural sway characteristics in an outdoor shooting setting, with performances totally subjected to the surrounding ambience, wind and weather conditions. Prior studies were all lab-based in an enclosed environment which did not resemble the actual environment. In addition, the present study analysed multiple phases of the shooting process. Past studies mostly focused on one phase wherein overall data was compared between groups. Here, overall performance was broken down into three phases; i.e. the setup, aiming and release phase. Such process allows determining of which action phase that impact shooting performance, rather than a general observation of the shooting performance (Balasubramaniam *et al.*, 2000; Era *et al.*, 1996; Gautier *et al.*, 2008; Keast & Elliot, 1990; Miyamoto, 1994; Mononen *et al.*, 2007; Stuart & Atha, 1990).

Vuillerme and Nougier (2004) have noted that experts from different sports do not differ in terms of postural sway during unperturbed stance and during raised difficulties. This is because experts tend to increase their ability to control postural sway autonomously. Prior studies suggested that cognitive mechanisms are dependent on levels of expertise. Expert athletes are able to perform autonomously and with less effort as compared to non-experts. As such, more effort can be channelled to process other movements (Era *et al.*, 1996; Gautier *et al.*, 2008; Vuillerme & Nougier, 2004).

The human body has an integrated system in order to maintain postural stability. The systems include visual, vestibular and somatosensory. Findings in this study logically showed that all participants demonstrated the same level of postural control. Crucially, it establishes a significant relationship between postural sway and shooting performance and proposes that postural sway during the release phase, rather than the setup and aiming phases, plays a major role in determining good shooting performance. According to practice-based automaticity theories, attentional demands are minimized when athletes are highly trained on postural tasks (Vuillerme & Nougier, 2004). Similarly, skilled archers

are highly trained in order to achieve stable aiming and good shooting performance. Clearly, athletes who are highly tuned on activities are able to minimize their intentional demands on the performance itself because it has been automated by the body system. Since the overall movements of expert athletes are autonomous in nature, they are able to focus on perfecting the techniques of shooting in order to obtain stable aiming and attain consistent shooting performance (Era *et al.*, 1996; Gautier *et al.*, 2008; McKinney, 1996; Stuart & Atha, 1990; Vuillerme & Nougier, 2004; Wulf, 2008).

Data for Phase 1 and Phase 3 showed less than 1.0 degree in sway; hence denoting minute sway contributed significantly to the outcome of a shooting performance. Positive data in Phase 1 indicated that skilled archers tend to sway to the anterior side during the setup phase. During this phase, archers are in the preparation phase to draw the bow, and would have to adjust grip techniques, hooking and adjusting bow arm elbow height in order to get the best posture as possible for drawing. Negative data during Phase 2 and Phase 3 reflected the archers' sway towards the posterior aspect. Phases 2 and 3 were aiming and release phases respectively. During these phases, archers tend to compensate the force of drawing via swaying backwards in order to maintaining stability. During these phases, the muscles used are the back muscles, i.e. trapezius, deltoids are used to pull the string instead of the biceps, triceps and the forearms muscles in order to maintain longer sustenance in the shooting (Ertan, 2009; Ertan *et al.*, 2003; Ertan *et al.*, 2004; Ertan *et al.*, 2005; Kuo & Chi, 2005; Kuo *et al.*, 2005; McKinney, 1996).

While the value of sway was small, it nevertheless impacts shooting performance. Current data revealed that during the setup and aiming phases, there was negative correlation. Such findings indicated that shooting performance decreases when postural sway increases. However, during the release phase, the correlation was linear indicating that an increase in postural sway corresponds with increase in shooting performance. In this context, with increased postural sway during release (-0.71), archers tend to sway back to the normal line. This account may be derived from the situation that during the release phase, the sway was towards the posterior side. Data trend suggested that the archers were in the process to move to the center line as evidenced from the decreasing value of postural sway from the aiming phase to the release phase. Hence, illustrating that minimizing postural sway, or by returning to the center line (or within the center) increases the consistency of the shooting performance of skilled recurve archers.

In summary, postural sway specifically at the release phase can produce inconsistency in shooting techniques thus preventing archers from obtaining a best possible score. Postural sway, in whichever respective phases, plays a role in the overall shooting outcomes, thus the need to control it. Uncontrolled sway clearly minimizes probability of winning by deteriorating aiming stability. Future studies on appropriate training programmes, or specialized apparels and apparatus for precision aiming task athletes should be conducted to minimize the effects caused by uncontrolled postural sways.

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Research on Customer Satisfaction in Enterprises Providing Water Sports Service

Ali Gürel GÖKSEL [1], Sümmani EKİCi [2]

[1] Marmara University, School for Physical Education and Sports

[2] Muğla Sıtkı Koçman University, School for Physical Education and Sports

ABSTRACT

The aim of this research is to determine the differences between satisfaction levels of customers who benefit from the enterprises providing water sports service in terms of their genders. While target population of the study is composed of customers in the enterprises providing water sports service; research sample of the study comprises of customers in the enterprises providing water sports service in touristic towns and counties under the directorship of Muğla (namely Bodrum, Marmaris, Fethiye, Akyaka). Totally 397 persons receiving water sports service, of whom 191 were females and 206 were males, were voluntarily included in our study. Survey method was used in the research. The survey developed by Gençer (2008) and adapted to water sports centers by the researcher (2012) and of which reliability coefficient (Cronbach's Alpha) was found as 0,96 was applied to the participants. The collected data was assessed in SPSS 18 software program. Cross Tabulation analysis and chi-square analysis were used to find the differences between the genders and to determine the percentage values in data analysis. Descriptive analysis was used to define the data in terms of age and income level. One-way analysis of variance (Anova) test was used to determine the differences between the answers of participants in terms of their age and income level. As the result, it was seen in the research that satisfaction level of customers receiving service from the enterprises providing water sports service was high.

Keywords: *Self-confidence, Physical Education, Negative Evaluation*

INTRODUCTION

Tourism is a phenomenon including activities more than one which people participate in individually or collectively and it is usually based on sightseeing, having fun and learning. Will Bencscheidt expressed his opinion about the definition of tourism by the following sentence: "whole set of relations between people who are temporarily situated and not settled somewhere and local people of that place" and Glückmann expressed his opinion as follows: "sum of relations between people who are situated somewhere because of their temporary accommodation and the people who live at that place (Toskay 1989). However tourism has so many names such as sports tourism, health tourism, culture tourism etc. according to the purposes of participation in the recent years.

Today, tourism products went beyond sun, sea and sand packs and have gained a new dimension and it became compulsory to make a good market research to create new and successful tourism products of the future and transit to customizable products in accordance with the demands of customers by well-studying the market components in a good way (<http://www.gezikolik.com/tr/>). The tourism type named as "sports tourism" started to come into prominence among the developing and changing tourism trends not only in our country but all over the world and has becoming an important part of life of modern societies.

In recent times, the concepts of customer and customer satisfaction becoming the focal points of accommodation enterprises in recent times have to be supported by a set of activities by bringing these under control by the enterprises. Otherwise, existence of entities will be under threat. As the result of all these needs, the concept of customer satisfaction takes its place in the body of the enterprise as a new blood plays an important role in determination and implementation of necessary strategies about these issues. (Bulgan 2011).

Some accommodation enterprises (hotels, boutique hotels, apartments, pensions etc.) going along with this idea are trying to provide training service aimed at various sports branches as well as accommodation and beverage services. If we consider that people usually prefer the hot summer months for their holiday seasons, enterprises are offering water sports training and service alternatively in accordance with this preference. The position of customer relations from the point of existence of accommodation enterprises to continue their existence have great importance in terms of realizing their future aims (Demir 2006). As the result of this, the interest on water sports has becoming increasingly popular in our country and around the world.

Especially, the possibility of a satisfied customer as the result of this kind of training and service coming to the same enterprise again for holiday is much more than a satisfied another customer who only accommodated in this enterprise. Because, it mustn't be forgot that sports form addiction on people and noted that water sports cannot be done everywhere as a hobby easily.

The aim of this study is to measure the service quality that sports tourists get from enterprises which offers water sports service and gain information about the status of satisfaction perception of customers by this sports training.

MATERIAL AND METHOD

Research Model

Survey method was used in the research and in this regard, a customer satisfaction scale for the enterprises providing water sports service and a survey form including demographic questions (age, gender, and income level) were used. The survey used in the research had been firstly used in the study of Gençer named "The variables affecting sports tourists' service quality perceptions in ski resorts" (Gençer, 2008). The survey was adapted to water sports centers by the researcher (2012) and its reliability coefficient was found as 0,96.

Target Population and Sample of Research

The research conducted in the towns and counties under the directorship of Muğla, Turkey (namely Bodrum, Marmaris, Fethiye, Akyaka).

While target population of the study is composed of customers in the enterprises providing water sports service; research sample of the study comprises of customers in the enterprises providing water sports service in the towns and counties under the directorship of Muğla. Totally 397 persons, 191 were females and 206 were males, whose basic accommodation aim was to benefit from alternative water sports training, were voluntarily included in the research.

Socio-demographic Features

A short survey form was prepared that comprised of 3 questions aimed at defining certain features of research subjects such as gender, age, and income level.

Customer Satisfaction Scale for the Enterprises providing Water Sports Service

A comprehensive literature review was carried out for to determine the variables affecting satisfaction levels of sports tourists in water sports centers as well as interviews were conducted with the sports tourists whose basic aim was to benefit from water sports in the water sports enterprises. In the survey form comprising of 18 questions, five-point Likert scale was used that is composed of options of "1-Strognly disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strognly agree."

Data Collection

The scales were distributed by the researcher to the tourists in water sports enterprises after receiving the answer "Doing water sports" to the question "What's your basic aim to come to this enterprise?" The aim of the study and the information concerning the scale were explained by the researcher to the individuals who can be characterized as sports tourist. The participants filled in the survey during their resting time in the water sports enterprises and submitted.

Reliability Study of the Scale

Table 1. Reliability Coefficients of the Items in the Scale (Cronbach's Alfa)

ITEMS	Change in all averages if the question is deleted
The training of water sports trainers is good during the course	,957
Water sports trainers are knowledgeable	,957
Water sports trainers are well-trained	,958
Water sports trainers are friendly	,959
Water sports training areas are of sufficient size	,958
Number of water sports training areas are sufficient	,958
Water sports training areas are clean and well-kept	,957
Water sports equipments are modern	,959
Accommodation enterprise is comfortable	,957
Accommodation enterprise staff is kind	,957
Accommodation enterprise is clean and well-kept	,957
Accommodation enterprise staff is inclined to help	,957
The atmosphere of water sports center is delighting	,957
The atmosphere of water sports center is perfect	,957
Water sports center has a very beautiful atmosphere	,957
Alternative entertainment places are sufficient	,958
There are various entertainment alternatives	,959

Cronbach's Alpha coefficient for internal consistency was calculated with the purpose of reliability study of the scale. Cronbach's Alpha technique is frequently used for testing the reliability of Likert-type scales and it is a measure for internal consistency (homogeneity) of the items included in the assessment instrument.

Table 2. Reliability (Cronbach's Alpha) Coefficient of the Scale

Cronbach's Alpha	Number of Questions
,960	18

The scale is composed of 18 questions other than the socio-demographic questions. Cronbach's Alpha coefficient of the survey is determined as 0,96. The high total point results mean high reliability.

Data Analysis

The collected data was assessed in SPSS 18 software program. Percentage and frequency analyses were used for assessing the socio-demographic data. Cronbach's Alpha coefficient was calculated for reliability study of the survey. Content validity and construct validity were evaluated for validity study of the survey. Rotated factor analysis calculations were made to determine the factor loadings and variance percentages. Principal component analysis, which is one of the most frequently used approaches in the literature, was used to test the construct validity of the scale. Cross Tabulation analysis and chi-square analysis were used to find the differences between the genders and to determine the percentage values. Descriptive analysis was used to define the data in terms of age and income level. One-way analysis of variance (Anova) was used to determine the differences between the answers of participants in terms of their age and income level. Tukey HSD test was used to determine the basis of the differences result from the Anova.

FINDINGS

Table 3. Frequency Analysis Results By Gender

	Frequency	%
Male	206	51,9
Female	191	48,1
Total	397	100,0

It is determined that 51,9% (206 persons) of research subjects are male and 48,1% (191 persons) of them are female according to the Frequency Analysis.

Table 4. Age Distribution by the Genders of Participants

	Gender		
	Male	Female	Total
20 years and under	22 5,5%	29 7,3%	51 12,8%
Between the ages of 21-30	122 30,7%	113 28,5%	235 59,2%
Age Between the ages of 31-40	45 11,3%	38 9,6%	83 20,9%
Between the ages of 41-50	15 3,8%	10 2,5%	25 6,3%
51 years and over	2 ,5%	1 ,3%	3 ,8%
Total	206 51,9%	191 48,1%	397 100,0%

$$x^2=2,66 \quad p>0,05$$

It is determined that 5,5% of male participants are under the age of 20, 30,7% of them are between the ages of 21 and 30, 11,3% of them are between the ages of 31 and 40, 3,8% of them are between the ages of 41 and 50 and 0,5% of them are 51 years old and over and 7,3% of the female participants are under the age of 20, 28,5% of them are between the ages of 21 and 30, 9,6% of them are between the ages of 31 and 40, 2,5% of them are between the ages of 41 and 50 and 0,3% of them are 51 years old and over. It is not observed any significant difference according to the genders in the result of chi-square analysis.

Table 5. Percentage Distribution of Answers Given to the Question of "What is Your Monthly Family Income Level According to the Genders of the Participants?"

Monthly Family Income Status	Gender		
	Male	Female	Total
1000" and lower	6 1,5%	3 ,8%	9 2,3%
Between 1001-1500"	9 2,3%	5 1,3%	14 3,5%
Between 1501-2000"	24 6,0%	27 6,8%	51 12,8%
Between 2001-2500"	54 13,6%	43 10,8%	97 24,4%
2501" and higher	113 28,5%	113 28,5%	226 56,9%
Total	206 51,9%	191 48,1%	397 100,0%

$$x^2=3,004 \quad p>0,05$$

56,9% of participants' monthly income level is 2501" and higher, 24,4% of them are between 2001-2500", 12,8% of them are between 1501-2000", 3,5% of them are between 1001-1500", 2,3% of them are lower than 1000". It was not observed any significant difference between the income levels of participants according to genders in the result of chi-square analysis.

Table 6. Anova Test Results According to Income Level and Questions of Water Sports Facilities and Equipment

	Monthly Income Level	FEMALE PARTICIPANTS					MALE PARTICIPANTS				
		N	Arithmetic Mean	Standard Deviation	F	P	N	Arithmetic Mean	Standard Deviation	F	P
Water sports training areas are of sufficient size	1000 " and lower	3	4,0000	1,00000	2,327	<0,05	6	1,50555	1,50555	3,079	<0,05
	Between 1001-1500 "	5	4,2000	1,30384			9	1,01379	1,01379		
	Between 1501-2000 "	27	4,0000	,83205			24	,76139	,76139		
	Between 2001-2500 "	43	4,4186	,54478			54	,78419	,78419		
	2501" and higher	113	4,4602	,76806			113	,68057	,68057		
Number of water sports training areas are sufficient	1000 " and lower	3	4,0000	1,00000	3,772	<0,05	6	1,32916	1,32916	6,886	<0,05
	Between 1001-1500 "	5	4,0000	1,22474			9	,97183	,97183		
	Between 1501-2000 "	27	3,8519	,76980			24	,85019	,85019		
	Between 2001-2500 "	43	4,3721	,65550			54	,77093	,77093		
	2501" and higher	113	4,4425	,75520			113	,64969	,64969		
Water sports training areas are clean and well-kept	1000 " and lower	3	4,3333	,57735	,482	>0,05	6	,40825	,40825	2,692	<0,05
	Between 1001-1500 "	5	4,2000	1,30384			9	1,00000	1,00000		
	Between 1501-2000 "	27	4,2963	,60858			24	,85019	,85019		
	Between 2001-2500 "	43	4,3721	,81717			54	,74512	,74512		
	2501" and higher	113	4,4779	,76878			113	,71951	,71951		
Water sports equipments are modern	1000 " and lower	3	3,6667	1,52753	1,996	>0,05	6	,63246	,63246	2,956	<0,05
	Between 1001-1500 "	5	4,0000	1,22474			9	1,01379	1,01379		
	Between 1501-2000 "	27	4,1481	,66238			24	,85867	,85867		
	Between 2001-2500 "	43	4,4186	,66306			54	,71814	,71814		
	2501" and higher	113	4,4602	,75635			113	,73236	,73236		

The differences in the variable of "Water sports training areas are of sufficient size" are resulted from the groups of 'Between 1501-2000" and 2501" and higher' according to the Turkey HSD test in order to be done to determine the income levels of differences formed in female research subjects made according to the Anova Test in Table 6. The differences in the variable of "Number of water sports training areas are sufficient" are resulted from the groups of 'Between 1501-2000", "Between 2001-2500" and 2501" and higher". There are not observed significant differences in variables of "Water sports training areas are clean and well-kept" and "Water sports equipments are modern".

The differences in the variable of "Water sports training areas are of sufficient size" are resulted from the groups of '1000" and lower and 2501" and higher' according to the Turkey HSD test in order to be done to determine the income levels of differences formed in male research subjects made according to the Anova Test in Table 6. The differences in the variable of "Number of water sports training areas are sufficient" are resulted from the groups of

"1000" and lower - Between 2001-2500", "1000" and lower - 2501" and higher", "Between 1501-2000" -Between 2001-2500" and "Between 1501-2000" - 2501" and higher". There are not observed significant differences in variable of "Water sports training areas are clean and well-kept". It is observed that the differences in the variable of "Water sports equipments are modern" are resulted from the groups of "Between 1501-2000" -Between 2001-2500" and "Between 2001-2500" - 2501" and higher".

Table 7. Anova Test Results by the Age of the Questions About Water Sports Facilities and Equipments

	Monthly Income Level	FEMALE PARTICIPANTS					MALE PARTICIPANTS				
		N	Arithmetic Mean	Standard Deviation	F	P	N	Arithmetic Mean	Standard Deviation	F	P
Water sports training areas are of sufficient size	20 years old and under	28	4,5714	,74180	4,052	<0,05	22	4,3636	1,00216	1,227	>0,05
	Between the ages of 21-30	112	4,4643	,64275			122	4,4754	,70668		
	Between the ages of 31-40	37	4,1622	,72700			45	4,3778	,77720		
	Between the ages of 41-50	9	3,6667	1,32288			15	4,3333	1,04654		
	51 years old and over	5	4,0000	1,41421			2	4,5000	,70711		
Number of water sports training areas are sufficient	20 years old and under	28	4,6071	,62889	3,652	>0,05	22	4,4091	1,00755	,252	>0,05
	Between the ages of 21-30	112	4,3839	,71339			122	4,4754	,72969		
	Between the ages of 31-40	37	4,1351	,67339			45	4,4444	,75545		
	Between the ages of 41-50	9	3,8889	1,36423			15	4,4000	1,05560		
	51 years old and over	5	3,6000	1,34164			2	4,5000	,70711		
Water sports training areas are clean and well-kept	20 years old and under	28	4,6786	,61183	3,060	<0,05	22	4,5455	,73855	,060	>0,05
	Between the ages of 21-30	112	4,4286	,75593			122	4,4508	,65685		
	Between the ages of 31-40	37	4,2432	,76031			45	4,4889	,86923		
	Between the ages of 41-50	9	4,6667	,50000			15	4,2000	1,14642		
	51 years old and over	5	3,6000	1,51658			2	4,0000	1,41421		
Water sports equipments are modern	20 years old and under	28	4,6429	,73102	2,404	>0,05	22	4,5000	,74001	,689	>0,05
	Between the ages of 21-30	112	4,4196	,71834			122	4,4836	,65849		
	Between the ages of 31-40	37	4,1892	,73929			45	4,5111	,86923		
	Between the ages of 41-50	9	4,2222	,83333			15	4,3333	1,11270		
	51 years old and over	5	3,8000	1,30384			2	3,5000	2,12132		

The differences in the variable of "Water sports training areas are of sufficient size" are resulted from the groups of "20 years old and under and Between the ages of 41 and 50, Between the ages of 21-30 and 41-50" according to the Turkey HSD test in order to be done to determine the ages of differences formed in female research subjects made according to the Anova Test in Table 7. There are not observed significant differences in variable of "Number of water sports training areas are sufficient". The differences in the variable of "Water sports training areas are clean and well-kept" are resulted from the groups "20 years old and under and 51 years old and over". There are not observed significant differences in variable of "Water sports equipments are modern".

There are not observed significant differences in all variables in accordance with the answers of male research subjects.

Table 8. Anova Test Results by the Monthly Income Level of Questions about the Atmosphere

	Monthly Income Level	FEMALE PARTICIPANTS					MALE PARTICIPANTS				
		N	Arithmetic Mean	Standard Deviation	F	P	N	Arithmetic Mean	Standard Deviation	F	P
The atmosphere of water sports center is delighting	1000 " and lower	3	4,3333	,57735	2,685	<0,05	6	4,6667	,51640	1,943	>0,05
	Between 1001-1500 "	5	4,4000	,54772			9	4,5556	1,01379		
	Between 1501-2000 "	27	4,0741	,87380			24	4,0417	,95458		
	Between 2001-2500 "	43	4,1860	,66389			54	4,4074	,71424		
	2501" and higher	113	4,5133	,76899			113	4,4867	,72105		
The atmosphere of water sports center is perfect	1000 " and lower	3	3,6667	,57735	4,200	<0,05	6	4,8333	,40825	2,238	>0,05
	Between 1001-1500 "	5	4,8000	,44721			9	4,5556	1,01379		
	Between 1501-2000 "	27	3,9259	,72991			24	4,0417	,99909		
	Between 2001-2500 "	43	4,3256	,64442			54	4,3519	,80464		
	2501" and higher	113	4,4779	,78031			113	4,4867	,69584		
Water sports center had a very beautiful atmosphere	1000 " and lower	3	4,3333	1,15470	1,382	>0,05	6	4,6667	,51640	2,134	>0,05
	Between 1001-1500 "	5	4,2000	1,09545			9	4,5556	1,01379		
	Between 1501-2000 "	27	4,1111	,80064			24	4,0000	1,02151		
	Between 2001-2500 "	43	4,2558	,72680			54	4,4444	,71814		
	2501" and higher	113	4,4602	,77960			113	4,4602	,70755		

Anyhow it is not observed any significant difference for the male research subjects according to Anova test results by the monthly income level of questions about the atmosphere in Table 8, it is determined that the differences in variables of "The atmosphere of water sports center is delighting" and "The atmosphere of water sports center is perfect" are resulted from the groups of "Between 1501-2000" and "2501" and over".

Table 9. Anova Test Results by the Age About Questions Related to the Atmosphere

	Age	FEMALE PARTICIPANTS					MALE PARTICIPANTS				
		N	Arithmetic Mean	Standard Deviation	F	P	N	Arithmetic Mean	Standard Deviation	F	P
The atmosphere of water sports center is delighting	20 years old and under	28	4,5714	,74180	1,229	>0,05	22	4,4545	,96250	2,332	<0,05
	Between the ages of 21-30	112	4,3839	,76223			122	4,4918	,68328		
	Between the ages of 31-40	37	4,2162	,75038			45	4,3111	,79264		
	Between the ages of 41-50	9	4,1111	1,05409			15	4,3333	,81650		
	51 years old and over	5	4,6000	,54772			2	3,0000	1,41421		
The atmosphere of water sports center is perfect	20 years old and under	28	4,5000	,63828	,648	>0,05	22	4,5000	,85912	,701	>0,05
	Between the ages of 21-30	112	4,3839	,75032			122	4,4590	,74020		
	Between the ages of 31-40	37	4,2162	,82108			45	4,3333	,79772		
	Between the ages of 41-50	9	4,3333	,70711			15	4,2000	,94112		
	51 years old and over	5	4,2000	1,30384			2	4,0000	1,41421		
Water sports center has a very beautiful atmosphere	20 years old and under	28	4,5000	,69389	,601	>0,05	22	4,4545	,91168	2,511	<0,05
	Between the ages of 21-30	112	4,3661	,82741			122	4,4918	,73006		
	Between the ages of 31-40	37	4,2703	,73214			45	4,2889	,75745		
	Between the ages of 41-50	9	4,3333	,70711			15	4,2667	,79881		
	51 years old and over	5	4,0000	1,00000			2	3,0000	,00000		

Anyhow, it is not observed any significant difference in female research subjects according to the Anova Test Results by the age about questions related to the atmosphere in Table 9, it is observed a significant difference for male research subjects on the level of $p < 0,05$ for the options of "The atmosphere of water sports center is delighting" and "Water sports center has a very beautiful atmosphere". It is determined that these differences are resulted from the groups of "Between the ages of 21 and 30 and 51 years old and over".

Table 10. Anova Test Results by the Age About the Questions Related to Trainers

	Age	FEMALE PARTICIPANTS					MALE PARTICIPANTS				
		N	Arithmetic Mean	Standard Deviation	F	P	N	Arithmetic Mean	Standard Deviation	F	P
The training of water sports trainers is good during the course	20 years old and under	28	4,7143	,65868			22	4,5909	,95912		
	Between the ages of 21-30	112	4,3839	,72591			122	4,3770	,78549		
	Between the ages of 31-40	37	4,1081	,73725	3,924	<0,05	45	4,2222	,79455	3,482	<0,05
	Between the ages of 41-50	9	4,4444	,72648			15	4,4667	,63994		
	51 years old and over	5	3,6000	1,67332			2	2,5000	2,12132		
Water sports trainers are knowledgeable	20 years old and under	28	4,7143	,53452			22	4,5455	,67098		
	Between the ages of 21-30	112	4,5000	,68445			122	4,4426	,72783		
	Between the ages of 31-40	37	4,2973	,74030	1,731	>0,05	45	4,3778	,91176	1,937	>0,05
	Between the ages of 41-50	9	4,4444	,72648			15	4,4667	,63994		
	51 years old and over	5	4,2000	,83666			2	3,0000	1,41421		
Water sports trainers are well-trained	20 years old and under	28	4,6786	,54796			22	4,4545	,80043		
	Between the ages of 21-30	112	4,5089	,64369			122	4,4918	,60638		
	Between the ages of 31-40	37	4,2432	,68335	2,90	<0,05	45	4,3556	,82999	2,893	<0,05
	Between the ages of 41-50	9	4,1111	1,16667			15	4,4000	,63246		
	51 years old and over	5	4,0000	1,22474			2	3,5000	2,12132		
Water sports trainers are friendly	20 years old and under	28	4,6429	,55872			22	4,8182	,39477		
	Between the ages of 21-30	112	4,4821	,67092			122	4,4836	,72992		
	Between the ages of 31-40	37	4,2162	,85424	3,308	<0,05	45	4,3778	,91176	1,758	>0,05
	Between the ages of 41-50	9	4,2222	,97183			15	4,4667	1,06010		
	51 years old and over	5	3,6000	1,34164			2	4,5000	,70711		

The differences in the variable of "The training of water sports trainers is good during the course" are resulted from the groups of "20 years old and under - Between the ages of 31 and 40, 20 years old and under and 51 years old and over" according to the Turkey HSD test in order to be done to determine the ages of differences formed in female research subjects made according to the Tukey HSD Test of Anova Test in Table 10. The differences in "Water sports trainers are well-trained" and "Water sports trainers are friendly" are resulted from the variables of the groups of "20 years old and under and 51 years old and over".

The differences in the variable of "The training of water sports trainers is good during the course" are resulted from the groups of "20 years old and under - 51 years old and over, Between the ages of 21-30 - 51 years old and over, Between the ages of 31-40 - 51 years old and over and Between the ages of 41-50 and 51 years old and over" according to the Turkey HSD test in order to be done to determine the ages of differences formed in female research subjects made according to the Tukey HSD Test of Anova Test in Table 10. The differences in "Water sports trainers are knowledgeable" are resulted from the variables of the groups of "20 years old and under and 51 years old and over". The differences in "Water sports trainers are well-trained" are resulted from the variables of the groups of "Between the ages of 31-40 and 51 years old and over".

Table 11. Anova Test Results by the Monthly Income About the Questions Related to Trainers

	Monthly Income Level	FEMALE PARTICIPANTS					MALE PARTICIPANTS				
		N	Arithmetic Mean	Standard Deviation	F	P	N	Arithmetic Mean	Standard Deviation	F	P
The training of water sports trainers is good during the course	1000" and lower	3	4,33	1,15470	2,135	>0,05	6	4,5000	1,22474	5,199	<0,05
	Between 1001-1500"	5	4,40	,89443			9	4,0000	1,22474		
	Between 1501-2000"	27	4,07	,67516			24	3,7917	1,14129		
	Between 2001-2500"	43	4,20	,70906			54	4,2593	,82839		
	2501" and higher	113	4,48	,79187			113	4,5398	,61289		
Water sports trainers are knowledgeable	1000" and lower	3	4,66	,57735	,873	>0,05	6	3,8333	,40825	4,174	<0,05
	Between 1001-1500"	5	4,60	,89443			9	3,8889	1,26930		
	Between 1501-2000"	27	4,29	,77533			24	4,0833	,77553		
	Between 2001-2500"	43	4,4186	,66306			54	4,4815	,84095		
	2501" and higher	113	4,5398	,66863			113	4,5487	,65453		
Water sports trainers are well-trained	1000" and lower	3	4,3333	,57735	,375	>0,05	6	4,0000	1,09545	3,325	<0,05
	Between 1001-1500"	5	4,6000	,54772			9	3,8889	1,26930		
	Between 1501-2000"	27	4,4444	,64051			24	4,0833	,88055		
	Between 2001-2500"	43	4,3488	,61271			54	4,4259	,71643		
	2501" and higher	113	4,4867	,75729			113	4,5310	,68231		
Water sports trainers are friendly	1000" and lower	3	4,3333	,57735	,864	>0,05	6	4,5000	,54772	1,533	>0,05
	Between 1001-1500"	5	4,4000	1,34164			9	4,1111	1,36423		
	Between 1501-2000"	27	4,2222	,75107			24	4,3333	,76139		
	Between 2001-2500"	43	4,3488	,71991			54	4,4074	,92182		
	2501" and higher	113	4,4956	,73343			113	4,6018	,63443		

It is not observed any significant difference in variables of female research subjects according to the Anova test made in Table 11.

The differences in the variables of "The training of water sports trainers is good during the course" and "Water sports trainers are knowledgeable" are resulted from the groups of "Between 1501-2000" - 2501" and higher" according to the Turkey HSD test in order to be done to determine the monthly income levels of differences formed in male research subjects made according to the Tukey HSD Test in order to determine the source of differences formed during the Anova Test according to the questions of male test subjects about trainers' monthly income level.

DISCUSSION AND CONCLUSION

It is important in modern marketing to provide customer satisfaction. Customer satisfaction can be ensured by putting the goods and services meeting the demands and needs of the customers to the market. Consumer behaviors are tried to be analyzed with the help of the behavioral sciences for the purpose of defining the hidden demands and needs by determining the demands and needs of the customers. In this regard, customer satisfaction has become the

basic aim of the modern marketing since the customers have become more conscious in time (Midilli, 2011).

As the customers have become the most important entities for the enterprises, the basic aim of the enterprises has become to provide customer satisfaction. The application of enterprises and technological developments can be easily imitated under the intense competition conditions. As customer relations are relatively hard to imitate, however, it appears as an advantageous factor over the rivals. Thus, it is important for enterprises to focus on customer needs and expectations and to produce goods and services in this line in terms of customer satisfaction and of ensuring loyalty (Midilli, 2011).

It can be said that there are determinants affecting the decisions of tourists in tourism activities based on sports intended participation. Service quality perceptions regarding these determinants have an efficient role in decision-making processes of individuals concerning their selection of holiday spots (Gençer, 2008).

As long as the customers are satisfied with the offered service, they continue to work with the same enterprise. Today, it is not sufficient to provide customer satisfaction; customer loyalty must be ensured, too. Providing customer satisfaction doesn't necessarily lead to customer loyalty. Customer satisfaction can be turned into customer loyalty by means of continuous communication with the customers, meeting their needs and expectations, and offering high quality service. Providing customer loyalty would contribute to company profitability (Coşar, 2006).

Sports enterprises and accommodation enterprises offering service in water sports sector should hold the customer satisfaction at a certain standard regardless of the peak season and low season difference. However, declines in the service quality of these enterprises that result from the fluctuation of the customer numbers due to seasonal intensity difference cause the expectations of the customers receiving service from these enterprises in our country in the low season not to be fulfilled.

If the factors affecting customer satisfaction are determined, it would provide the sustainability of customer satisfaction. Since it is much more costly to gain new customers than keeping the current ones, it should be tried to provide satisfaction of the current customers (Coşar, 2006).

In the study of Gençer named "The variables affecting sports tourists' service quality perceptions in ski resorts," it was determined that customer satisfaction perceptions for accommodation enterprise staff were more positive in sports tourists aged 32 and under than the ones aged 33 and over (Gençer, 2008).

When the answers concerning accommodation enterprise by the age were analyzed, it was determined that there were significant differences on the level of $p < 0,05$ in the questions of "Accommodation enterprise is comfortable," "Accommodation enterprise staff is kind," "Accommodation enterprise is clean and well-kept," and "Accommodation enterprise staff is inclined to help." It was determined that this difference was resulted from the groups of 20 years old and under-50 years old and over, between the ages of 21 and 30-51 years old and over, between the ages of 31 and 40-51 years old and over, and between the ages of 41 and 50-51 years old and over.

When the answers concerning water sports facilities and equipments by the age were analyzed, it was determined that there were significant differences on the level of $p < 0,05$ in the questions of "Water sports training areas are of sufficient size" and "Water sports equipments are modern." It was determined that this difference was resulted from the groups of 20 years old and under-50 years old and over, between the ages of 21 and 30-51 years old and over, between the ages of 31 and 40-51 years old and over, and between the ages of 41 and 50-51 years old and over.

The component of "water sports facilities and equipments" has an important impact on customer satisfaction perceptions of water sports tourists between the dimensions concerning customer satisfaction. 4 statements were included concerning this factor. In the study carried out by Gençer (2008), it was mentioned that there were significant differences by the gender and age. It was also mentioned that visible physical entities had an important place in the service evaluation process of the customers (Gençer, 2008).

In the chi-square analysis, it was determined that there were significant differences by gender on the level of $p < 0,05$ in the questions of "Water sports trainers are well-trained," and "Number of water sports training areas are sufficient."

While there were no significant differences by gender in the perceptions concerning ski trainers in the study carried out by Gençer (2008); the perceptions of sports tourists aged 33 and over were determined more positive than the perceptions of the sports tourists aged 32 and under (Gençer, 2008).

When the answers concerning entertainment by the age were analyzed, it was determined that there were significant differences on the level of $p < 0,05$ in the questions of "Alternative entertainment places are sufficient" and "There are various entertainment alternatives." It was determined that this difference was resulted from the groups of between the ages of 21 and 30-between the ages of 31 and 40, and between the ages of 21 and 30-51 years old and

over.

When the answers concerning accommodation enterprise by the monthly income level were analyzed, it was determined that there were significant differences on the level of $p < 0,05$ in the questions of "Accommodation enterprise is comfortable," "Accommodation enterprise staff is kind," "Accommodation enterprise is clean and well-kept," and "Accommodation enterprise staff is inclined to help." It was determined that this difference was resulted from the groups of between 1501 and 2000"-between 2001 and 2500", and between 1501 and 2000"-2501 and higher.

When the answers concerning entertainment by the monthly family income level were analyzed, it was determined that there were significant differences on the level of $p < 0,05$ in the questions of "Alternative entertainment places are sufficient" and "There are various entertainment alternatives." It was determined that this difference was resulted from the groups of between 1501 and 2000"-between 2001 and 2500", and between 1501 and 2000"-2501 and higher.

These results are important for the determination of service priorities evaluated in satisfaction perceptions of customers benefiting from water sports enterprises and for they show that required improvements must be made beginning from the most prior service dimension.

Defining the factors shaping customer satisfaction perceptions of sports tourists concerning water sports enterprises and improving these factors beyond the expectations of sports tourists would have a positive determinant role in the decision-making process of sports tourists for the selection of enterprises providing water sports service.

As the result, as long as customers are satisfied with the service provided to them, they continue to work with the same enterprise. Today, it is not sufficient to provide customer satisfaction; customer loyalty must be ensured, too. Providing customer satisfaction doesn't necessarily lead to customer loyalty. Customer satisfaction can be turned into customer loyalty by means of continuous communication with the customers, meeting their needs and expectations, and offering high quality service (Emir 2007). Providing customer loyalty would contribute to company profitability.

The best way of receiving this information from the customers is measuring customer satisfaction. Customer satisfaction is an abstract concept which can vary in each receipt of the good or service by the customer. Thus, it must be measured at regular intervals. By means of these measurements, enterprises can determine customer expectations and needs and can arrange their services to meet these expectations and needs (Coşar, 2006).

As the result of the research, it was seen that satisfaction levels of customers receiving service from enterprises providing water sports service were high. As the surveys for field research were conducted only in the peak season, however, it's certain that if a survey is conducted also including the low season, more definite results could be gained.

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The Investigation of Factors That to Be Impediment Participating in Recreational Activities of Education Faculty Student's

Aytül Eynur [1], Mehmet Göral [2], Baybars Recep Eynur [3]

[1] College of Physical Education and Sport
Dumlupınar University
Turkey
aytul_11@hotmail.com

[2] College of Physical Education and Sport
Celal Bayar University
Turkey
mgoral@hotmail.com

[3] College of Physical Education and Sport
Dumlupınar University
Turkey
eynurspor@gmail.com

ABSTRACT

The purpose of this study; university students who educated in Education Faculty of Dumlupınar University were determined factors that recreational activities disabled. With this aim, in this study to recreational disabilities determined Inventory of Recreational Disabilities that prepared by Gürbüz and Karaküçük (2007) was used. The universe of this study by composed of university students who educated in Education Faculty of Dumlupınar University and College of Physical Education and Sport. Sampling, was 230 university students that 73 women and 157 men. To interperation collected datas was used ANOVA. When examined results in this study, University students; As gender factors about "Activities give the sense of tired, be tired by self, health problems, have no learned person, Work/Study time is heavy and Programming timing don't be appropriate" have meaningful. As students department about "Be tired by self, health problems, Work/Study time is heavy, Don't be sense trust by self, Construction equipment is not enough, Construction is not enough, offered services weren't accepted and to be intrafamily have to time" have meaningful. As students socio-economical level about "Be tired by self, health problems and don't have a car" have meaningful were determined.

Keywords: *Recreation, Recreational Obstacles; Students of Education Faculty*

INTRODUCTION

Although the concepts of free time and recreation, as bearing the same meaning as it may seem, there are subtle differences. Free time to have an individual's daily activities, while the remaining of the time, the concept of recreation, this time with the type of assessment and evaluation methods involved. When exmined literally, free time while represented a condition, recreation has a structure which tells activities and practices. (YILMAZ, 2011).

The definitions about concept of recreation, can changeable due to individuals who participated to activities. (HOWE & CARPENTER, 1985). In a transferred study; due to world free time and recreation association, recreation is a special field where give options about chance of election, creation ; include satisfaction of human life with special benefits (Özdemir, Karaküçük, Gümüş, & Kiran, 2006).

Without individuals' needs to live, recreation is defined as time which placed individuals options. In other words, free time, all the necessities of an individual or links to both him and escaped, and his request for someone else chooses an activity to contend with the time. Generally, it is a period of time when outside of work (HERGÜNER & KANDAZ GELEN, 2007).

In another study, according to the Oxford English dictionary, recreation, himself or others "re-create, entertain the action, or an exciting endeavor satisfaction, pleasure, or the fact that is have been funned through comedy" (YAMAN

& ARSLAN, 2009).

According to another definition, recreation, business people, tasks, and activities like homework and liabilities remaining after the fulfillment of compulsory free time to relax, have fun, be renewed, to be satisfied with respect to the individual event or participating as a volunteer experiences (OREL & YAVUZ, 2003).

Studies have examined recreational activities, free time of an individual individual, psychological, physical and social benefits in order to obtain some of his own accord without coercion perceived as all the events attended (ERGÜL, 2008).

Recreation, recreating the classic approach, which means, according to the recreational activities of people forced renewal, relaxes and is defined as activities carried out on a voluntary basis. A social institution in the modern sense, information, community and professional work as a recreation area, work independently, which is valuable in itself, one that meets the needs of a very important tool for a full and happy life. With this approach, recreation, most commonly, people participate voluntarily in their spare time, and can be defined as activities that provide personal satisfaction (BEKDEMİR, 2011).

There are two factors in recreation. The first is that the restoration renewal. Recreation contacts integrity, health, intends to re-establish any objective can be possessed. The second factor of social organization. Recreation is only "on its own /'s sake" is nothing (YAMAN & ARSLAN, 2009).

Occurring at different times and in different sized people in their leisure time away from the environment where to relax, air exchange, sightseeing, health, being together, the excitement of hearing, for many purposes, such as to obtain different experiences outside the home, or in-house, open or closed areas or active-passive forms, the activities involved in urban or rural areas (ZENGİN, SERTBAŞ, & KOLAYIŞ, 2006).

Participation in recreational activities, despite the positive contributions of individuals due to various reasons, do not participate in such events is very important for them, or was unable to attend due to various obstacles. The concept of leisure time leisure recreational activities interfere with an individual's participation in the literature that prevents or restricts the reasons for, and expressed by the individual transferred to a study (DEMİREL & HARMANDAR, 2009).

There are many recreational activities relationship field. Among them, sports, tourism, economics, sociology or psychology can. However, in terms of implementation, rather than the theoretical area stands out as the most significant in the sport. Provide psychological vigor thanks to the sports recreational activities because of the need of the individual, as well as due to the increased efficiency of the body brings about physical fitness. For this reason, both in our country, as well as the phenomenon of developed countries, a large part of the recreation of the sport is regarded as a sub-branch (BEKDEMİR, 2011).

Recreation nowadays increasingly valued. Universities, university youth recreation programs are a very serious role and importance. Recreation activity is also part of school life. Today, the vast majority of the time in classrooms, laboratories, recreational activities or participation of each student who needs desks (BALCI & İLHAN, 2006).

In parallel with technological development, the gradual decrease in working hours, leisure time shows that a great deal of people and have more leisure activities and leisure, reveals the necessity of education. (Balci, 2003).

Individuals in the community to be healthy, self awareness, skills and competencies should be aware that the assessment of the potential must be fully informed in order to perform their free time. Remain healthy and dynamic properties of the human organism, due to mobility, due to the children and young people to participate in sporting activities, physical, psychological development and socialization, adults, and the elderly are required to live healthy (BEKDEMİR, 2011).

Given this context, this experiential work experience in college life as a gateway to the behavior of the resulting free time and their contents will affect the future lives is the college students. Participating in recreational activities in their free time studying at university sporting facilities within reviews are certain. Particularly in the education of the students in the faculties of university students has a special importance examination of recreational habits. This is the future of young people in their lives, habits and trained by the states to be an example to younger generations considering how important it is understood that the examination of the issue.

THE STUDY

In this study to recreational disabilities determined Inventory of Recreational Disabilities that prepared

by Gürbüz and Karaküçük (2007) was used. The universe of this study by composed of university students who educated in Education Faculty of Dumlupınar University and College of Physical Education and Sport. Sampling, was 230 university students that 73 women and 157 men. To interperation collected datas was used ANOVA.

According to department, The distribution of students shown in Table 1.

Tablo 1: Accordin to Department, Distribution of Participated Students in This Research

		Department				Total
		Elementary	Physical Education and Sport	English	Social Science	
Gender	Man	Count	25	29	4	73
		% of Total	10,9%	12,6%	1,7%	6,5%
	Woman	Count	52	47	30	157
		% of Total	22,6%	20,4%	13,0%	12,2%
Total		Count	77	76	34	230
		% of Total	33,5%	33,0%	14,8%	18,7%

FINDINGS

Findings and their related discussions detailed as follows.

Tablo 2: According to Gender, the Compare of Views about Recreational Disabled of Students

		Sum of Squares	df	Mean Square	F	p.
S1	Between Groups	4,406	1	4,406	6,738	,010
	In Groups	149,090	228	,654		
	TOTAL	153,496	229			
S2	Between Groups	7,284	1	7,284	11,552	,001
	In Groups	143,776	228	,631		
	TOTAL	151,061	229			
S4	Between Groups	4,592	1	4,592	6,170	,014
	In Groups	169,674	228	,744		
	TOTAL	174,265	229			
S9	Between Groups	4,507	1	4,507	5,934	,016
	In Groups	173,184	228	,760		
	TOTAL	177,691	229			
S21	Between Groups	9,001	1	9,001	13,173	,000
	In Groups	155,786	228	,683		
	TOTAL	164,787	229			
S24	Between Groups	3,724	1	3,724	5,219	,023
	In Groups	162,663	228	,713		
	TOTAL	166,387	229			

Table 2, the findings are analyzed, according to the gender of the students "activities is to give a feeling of tiredness, feeling tired, health problems, lack of Teach anyone, Business / Work time intensive and the program is not the appropriate time" is a significant difference between the sexes in matters of have been identified. At this point, the findings of the gender analysis of the concept of obstacle recreational activities to the point of physical capacity, and training program differs arise.

Students participating in the research findings in order to identify barriers to recreation segments are shown in Table 3.

Tablo 3: According to Department, the Compare of Views about Recreational Disabled of Students

		Sum of Squares	df	Mean Square	F	p
S2	Between Groups	7,673	3	2,558	4,031	,008
	In Groups	143,388	226	,634		
	TOTAL	151,061	229			
S4	Between Groups	8,163	3	2,721	3,702	,012
	In Groups	166,102	226	,735		
	TOTAL	174,265	229			
S5	Between Groups	8,114	3	2,705	3,025	,030
	In Groups	202,082	226	,894		
	TOTAL	210,196	229			
S10	Between Groups	7,286	3	2,429	4,434	,005
	In Groups	123,797	226	,548		
	TOTAL	131,083	229			
S11	Between Groups	5,802	3	1,934	3,392	,019
	In Groups	128,846	226	,570		
	TOTAL	134,648	229			
S13	Between Groups	5,009	3	1,670	2,856	,038
	In Groups	132,139	226	,585		
	TOTAL	137,148	229			
S21	Between Groups	24,353	3	8,118	13,064	,000
	In Groups	140,434	226	,621		
	TOTAL	164,787	229			
S22	Between Groups	4,947	3	1,649	2,980	,032
	In Groups	125,036	226	,553		
	TOTAL	129,983	229			

Examined the findings of Table 3, according to sections of the students "to feel tired himself, Health problems, Business / Work time to be busy, to feel self-confident, plant equipment to be insufficient, inadequate facilities, offered services, take the time to dislike and Family to have "issues have been found to be a significant difference between the sections. At this point, the findings analyzed the concept of inter-departmental barrier recreational activities to the point of physical capacity and facility practices differ arise.

Welfare of the students participating in the research findings in order to identify barriers to recreation according to the level shown in Table 4.

Tablo 4: According to Socio-Economical Statues, the Compare of Views about Recreational Disabled of Students

		Sum of Squares	df	Mean Square	F	p
S2	Between Groups	9,022	6	1,504	2,361	,031
	In Groups	142,039	223	,637		
	TOTAL	151,061	229			
S4	Between Groups	15,230	6	2,538	3,559	,002
	In Groups	159,035	223	,713		
	TOTAL	174,265	229			
S13	Between Groups	7,798	6	1,300	2,241	,040
	In Groups	129,349	223	,580		
	TOTAL	137,148	229			
S16	Between Groups	24,481	6	4,080	4,312	,000
	In Groups	211,001	223	,946		
	TOTAL	235,483	229			
S17	Between Groups	12,252	6	2,042	3,035	,007
	In Groups	150,048	223	,673		
	TOTAL	162,300	229			
S26	Between Groups	14,873	6	2,479	2,874	,010
	In Groups	192,349	223	,863		
	TOTAL	207,222	229			

The findings are analyzed in Table 4, the welfare of the students according to their level "Self-feel tired, Health problems, dislike offered services, not my car, and on the lack of enough money" not been found to be a significant difference between the levels of welfare issues. At this point, the concept of obstacle to the findings of the material examined, recreational facilities, and material well-being between the levels of mobility differs in size and recreational activities at the emerging relevance.

According to the level of difficulty of the participating students spend their leisure time in order to identify barriers to recreational findings are shown in Table 5.

Tablo 5: According to Difficulties Evaluation Levels of Recreational Times, the Compare of Views about Recreational Disabled of Students

		Sum of Squares	df	Mean Square	F	p
S2	Between Groups	8,805	4	2,201	3,481	,009
	In Groups	142,256	225	,632		
	TOTAL	151,061	229			
S4	Between Groups	14,249	4	3,562	5,009	,001
	In Groups	160,016	225	,711		
	TOTAL	174,265	229			

	Between Groups	9,874	4	2,469		
S16	In Groups	225,608	225	1,003	2,462	,046
	TOTAL	235,483	229			

Examined the findings of Table 5, the welfare of the students according to their level "Self-feel tired, lack of health problems, and my car" leisure time issues were found to be a significant difference between the levels of difficulty. At this point, the findings obtained from analysis of levels of difficulty ratings recreational leisure time physical activity opportunities and the size of the barrier material and the health status of the concept differs from the point of emerging.

DISCUSSION AND CONCLUSION

According to the results obtained from the research point of participation in recreational activities of the students according to their gender "of activities to give a feeling of tiredness, feeling tired, health problems, lack of Teach anyone, Business / Work time intensive and the program is not the appropriate time" is a significant difference between the sexes in matters of have been identified.

Segments of the participating students "to feel tired himself, Health problems, Business / Work time to be busy, to feel self-confident, plant equipment to be insufficient, inadequate facilities, services offered, you have to take the time to dislike and Family" to be a significant difference between the sections on were determined. At this point, the findings analyzed the concept of inter-departmental barrier recreational activities to the point of physical capacity and facility practices differ arise.

Welfare of the students participating in the study according to their level "Self-feel tired, lack of health problems, and my car" leisure time issues were found to be a significant difference between the levels of difficulty. At this point, the findings obtained from analysis of levels of difficulty ratings recreational leisure time physical activity opportunities and the size of the barrier material and the health status of the concept differs from the point of emerging.

Looking at the work of literature in the field of campus recreation is observed that a number of studies. Found a large number of overseas study (YOH, 2009), (HURD & A.S., 2006) (MCDONALD, 2005) (KAUFMAN, 1991) (ZHANG J.J., DeMichele, & CONNAUGHTON, 2004) .

Campus recreation applications are examined studies abroad, in countries where the work is very advanced case studies and more at this stage of our country can be said that at this point. Goral (2006) in his study, the results obtained from the research findings in support of the "reach a wider public provision of sport, sport as a result of those investigated by using a variety of methods, and to investigate potential problems or" stated that (Göral, 2006).

As a result, significant differences between the experiences of college students in the past yaşantılarındaki sporting events, participation and gender should be considered when the next event is considered applications. As a result of research at the university also influenced by the segment reveals the recreational behavior. This is to eliminate the negativity in the campus recreation activities should be planned for these issues to be considered. Youth physical and social activity, must resolve these problems we have to be considered in structuring campus environments.

Many studies have examined the recreational activities for university students. However, studies have been made to ascertain the general trend of recreational behavior. At this point, the evaluation of the results of a separate review raises the campus recreation areas.

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The Validity and Reliability of Motivational Factors Scale and the Benefits Scale of Participating in Mountaineering Activities for Turkish Population

Faik Ardahan [1], Mehmet Mert [2]

[1] Akdeniz University,
School of Physical Education and
Sports,
Recreation Department
Antalya, Turkey
ardahan@akdeniz.edu.tr

ABSTRACT

There are two main aims of this study; first; to define the validity and reliability of “the Motivational Factors Scale for participating in recreational Mountaineering activities -MFSM”; and “the Benefits Scale of participating in Mountaineering activities - BSM” for Turkish population; second; to find out the impacts of MFSM on BSM. In this study, sampling has been applied and an electronic questionnaire form has been sent to all participants. As a result, the MFSM for participating in recreational mountaineering activities, the BSM of participating in mountaineering activities were reliable and valid in the estimation of the motivational factors and benefit items of joining in mountaineering for the Turkish population. A significant regression model was found between MFSM and BSM.

Keywords: *Validity, Reliability, Motivational Factors, Benefit Items, Mountaineering*

INTRODUCTION

In the last four decades, the reasons and the benefits of participating in outdoor activities were the subject of many studies and the researchers tried to explain these factors by using different approaches. An outdoor activity is a recreational product purchased or produced at the time by the participants (Turgut, 2012). The reasons for purchasing this product are affected by some internal and/or external factors and the benefits of participating in outdoor sports can be defined as a decision making process (Kalkan & Ardahan, 2012). Like industrial goods and consumer goods, recreational goods and services also have the same life cycle. One can meet this product through self factors or some other external factors like a friend or an advertisement etc., and then decide to try it on, which is sometimes the most important step towards the next trial, and if they have a good experience, they will continue to experience/consume it. In the end, this process creates loyalty to the product, the brand and the business (Unal, Can & Deniz, 2006). Loyalty process is defined in recreation as a recreational loyalty or a hobby. This usually takes a long time in a person's life and it usually becomes a life style.

There are basically two main aims of this study; first; to define the validity and reliability of “the Motivational Factors Scale for participating in Mountaineering activities -MFSM”; and “the Benefits Scale of participating in

Mountaineering activities - BSM" for Turkish population; second; to find out the regression models between MFSM and BSM.

Literature Review and Conceptual Framework

In general activities done outdoors, particularly outdoor sports can be defined as leisure time activities or outdoor activities or outdoor sports which create interaction between participants and nature, and activities which have a positive effect on individuals' health, spiritual and social benefits (Ibrahim & Cordes, 2002). There are two types of outdoor activities or outdoor sports done outdoors; first, recreational outdoor activities and sports, second, professional outdoor activities and sports.

Outdoor activities are a total of activities which are done on the sea, earth, air, ice and snow. Some examples of these activities are picnicking, mountaineering, rock climbing, hiking, bird watching, upland festivals, trainings in nature, water activities, parachuting, flying kites and so on (Ardahan, 2011). The characteristics of outdoor sports are different from other sports done indoors. Outdoor activities involve high risks, excitement, adventure feelings and require high concentration for the participants. As far as freedom is concerned, outdoor sports are very successful in providing different ways of life (Simsek, 2010).

As a well-known outdoor sports, Mountaineering attracts more and more people day by day. Considered as one of the main outdoor sports, mountaineering, to reach the summit or a defined point of the mountain, integrates both climbing and hiking up, and it can be done on regular terrain as well as rocky areas and even in icy or snowy slopes. Mountaineering consists of a combination of a series of techniques and requires a highly technical talent, technical information, technical equipment, physical and mental performance and fitness (¹; Ardahan, 2012). In other words, The UIAA ([Union Internationale des Associations d'Alpinisme](http://www.theuiaa.org/)) describes mountaineering as a sport exercised to reach the summit of the mountains (²). Since there are rocky, snowy and icy paths on the way to the summit, people climbing mountains should have knowledge and experience about rock climbing, snow climbing and ice climbing. Since climbing is an outdoor sport which is exercised on earth, ice and snow, it is examined in subtitles such as mountaineering, traditional rock climbing, sportive rock climbing and ice climbing (famous ones are done at frozen falls and icebergs) (Ardahan, 2011; Kalkan, 2012).

Outdoor activities require organized and/or wild areas and can be grouped into two parts as nature based and nature related. Mountaineering is one of the nature based outdoor activities and involves adequate physical and mental qualifications, physical and mental fitness, and knowledge of exercising and how to use equipments (Ardahan & Mert, 2012). Furthermore, it requires a group relation such as club membership and/or friend/family relationship (Kalkan, 2012).

A major reason of the advent of outdoor recreation is modernity. In many western countries including Turkey, modernity accompanies the growing industrialization of societies. Once a part of traditional life, such activities as walking, hunting and fishing, became sports and outdoor recreation in time (Ardahan & Mert, 2012). As industrialization and urbanization increased, so did the demand for outdoor recreation and outdoor sports (Aslan, 1993). In addition to

¹ - Retrived November 16, 2011 from <http://www.wisegeek.com/what-is-mountaineering.htm>

² - Retrived November 16, 2011 from <http://www.theuiaa.org/>

this, the increasing facilities in transportation and communication and the increase in free time, population, mobilising possibilities, technological changes and instruments, advertising and propaganda, education level, cultural changes, environmental awareness, changing health awareness and needs, entertainment, spread of recreation centers and recreation businesses have all contributed to the demand for outdoor recreation and outdoor sports as well (Kalkan, 2012). Besides, getting away from routine and crowd is another significant factor that influences participating in all outdoor recreations (Sağcan, 1986). Also, the inclination towards outdoor sports has risen because of getting away from responsibilities and family, increased affordability, broader coverage of adventure sports in media, reasonable costs of equipment, changing traditional ways of life and meaning of individual, family and social perception (Ardahan, 2011).

For socio-economic and personal benefits, the reason why people want to participate in outdoor recreation especially mountaineering and why people demand for these recreational products and activities (the main scope of this study) is vitally important to understand. Maybe for now, it does not have a big share in Turkey and/or many other developing countries' economies, but in the USA, outdoor recreation has already created big economic benefits. Outdoor recreation is a larger and more critical sector of the American economy than most people realize. Outdoor Industry Association in the USA (2012) declared the economic benefits of outdoor sports as; (a) 6.1 million American Jobs, (b) \$646 billion in outdoor recreation spending each year, (c) \$39.9 billion in federal tax revenue, (d) \$39.7 billion in state/local tax revenue, (e) \$120.7 billion outdoor recreation product sales (apparel, footwear, equipment, vehicles, accessories, services etc.), (f) \$524.8 billion trips and travel- related spending, (g) \$646 billion direct sales.

Mountaineering and outdoor recreation can also be defined as a field of tourism and keep a big economic potential like export possibilities just as in Nepal and Mt. Ararat in Turkey. In addition to this; in many European countries, there are summer courses in the curricula from primary schools to universities in order to experience outdoor recreation fully (Kalkan, 2012). In many developed countries, mountaineering and outdoor recreation can be thought as a life style. It affects and it is affected by many other decision making processes for purchasing this recreational good.

In the last four decades, the reasons for participating in outdoor activities and the social and personal benefits of participating in them have drawn attentions of scientists. While Crandall (1980) claims that the personality and conditions make a person participate in outdoor activities, Levy (1979) claims that it is the interaction between personality and social conditions which encourages someone to take part in activities. Driver (1976, 1983), Driver and Knopf (1977) and Manfredi, Driver and Tarrant (1996) used the internal and external motivational factors to explain why people participate in outdoor activities and the benefits that they gain. Some others try to explain why people participate in outdoor activities by using Needs Theory (Ibrahim & Cordes, 2002), Self Determination Theory (Deci & Ryan, 1985), the Achievement Goal Theory (Pintrich, 2000), Activity Theory (Engeström, Miettinen & Punamaki, 2003), and Personality Theory (Knutson, 1995).

Scientists who focused on motivational factors concluded that needs motivate people to act. This was firstly claimed by Maslow, who grouped it in detail and defined it as primary and secondary needs. The primary needs are considered to be food, security, warmth, belonging and mental fitness. Secondary needs are success, being with friends, creativity, curiosity, risk, getting rid of ego and building self (Ibrahim & Cordes, 2002). The theoretical structure of motivation comes from Lawler's (1973) expectancy-value model. In this model Lawler defines that human action is driven by physiological and psycho-social outcomes and behavior is a rational process of these outcomes. The relationship between motivation and behavior was used by many researchers to explain "why" a person participates in

leisure and outdoor recreation. The most famous ones are Driver and his colleagues (Driver, 1976, 1983; Driver & Brown, 1986; Driver & Knopf, 1977; Driver & Tocher, 1970; Manfreda et al., 1996). Researchers have also referred to these factors as “leisure needs” that has “pull” affect (Kyle, Absher, Hammit & Cavin, 2006). Driver (1983) developed the master lists of items for recreation experiences scale and domains, later, Manfreda, Driver and Tarrant (1996) used these items to define the factors affecting a person to take part in leisure. This can be explained as a recreation experience. Driver and colleagues developed Recreation Experience Preference (REP) scale, to understand the physiological and psycho-social outcomes.

According to Driver’s (1983) study, the factors, domains and core statements can easily be found out in details. These are ; a) Achievement/ Stimulation (a1- Reinforcing/Self-Image, a2- Social Recognition, a3- Skill Development, a4- Competence Testing, a5- Excitement, a6-Endurance, a7-Telling Others), b) Autonomy/Leadership (b1- Independence, b2- Autonomy, b3- Control-Power), c) Risk Taking, d) Equipment, e) Family Togetherness, f) Similar People (f1- Being With Friends, f2- Being With Similar People), g) New People (g1- Meeting New People, g2- Observing Other People), h) Learning (h1- General Learning, h2- Exploration, h3- Geography of Area, h4- Learn About Nature), i) Enjoy Nature (i1- Scenery, i2- General Nature Experience), j) Introspection (j1- Spiritual, j2- Introspection), k) Creativity, l) Nostalgia, m) Physical Fitness, n) Physical Rest, o) Escape Personal-Social Pressures (o1- Tension Release, o2- Slow Down Mentally, o3- Escape Role Overloads, o4- Escape Daily Routine), p) Escape Physical Pressure (p1-Tranquility, p2- Privacy, p3- Escape Crowds, p4- Escape Physical Stressors), q) Social Security, r) Escape Family, s) Teaching-Leading Others (s1- Teaching-Sharing/Skills-Sharing Knowledge/Directing Others, s2- Leading Others- Sharing Knowledge/Directing Others), t) Risk Reduction (t1- Risk Moderation, T2- Risk Avoidance), and U) Temperature. These are the main motivational factors to find out the main reason why people participate in leisure (Manfreda et al. 1996). But later some other factors were added to these explained by needs theory. These factors were explained in a study conducted in Illinois University relating to primary and secondary needs are “(a) nature love, (b) the need for physical activity, (c) creativity, (d) relaxation, (e) realization of self, (f) meeting a famous person (if a known rock climber or somebody else is participating in the event, it draws people who want to meet him\her), (g) the desire to be recognized, (h) motivating and inviting factors (e.g. a nice waterfall attracts people), (i) gaining a social status, (j) self realization, (k) the desire for success, (l) rivalry (within and out), (m) spending time and (v) intellectual aesthetics” (Ibrahim & Cordes, 2002; Ardahan & Lapa, 2010; Kalkan & Ardahan, 2012). Kyle et al. (2006) claimed that motivational factors, Modified Involvement Scale (MIS), in addition to the factors explained above; a) Bonding (a1- to bring family/friends closer together), b) Learning (b1- to develop one’s knowledge about the area, b2- to learn more about nature, b3) to learn about the natural history or ecology of the area). According to another study done by Ardahan (2011), which represents “The Profile of the Turkish mountaineers and rock climbers” some extra reasons were added to the motivational factors explained above. These are “(a) physical and mental fitness, (b) physical and mental rehabilitation, (c) to improve oneself and to learn new skills, (d) tempting things in nature, (e) to be a fighter and to revolt, (f) to have new social relations and (g) to make new friends, (h) to observe people, (i) to improve social status and take social power, (j) recognition and to be recognized, (k) to nonnock and get out of boredom, and (l) to meet a celebrity in this activity.

Benefits of exercising outdoor activities are “(a) learning group dynamics, (b) gaining self confidence, (c) making individual decisions, (d) learning risk management, (e) taking responsibility of self and others, (f) improving physical and mental fitness, (g) feeling healthy, (h) making friends and socialization” (Ibrahim & Cordes, 2002; McKenzie, 2000; Yerlisu Lapa, Ardahan & Yıldız, 2010). According to another study done by Ardahan (2011), the benefits of Turkish

mountaineers and rock climbers who attend outdoor activities are “(a) feeling happier, healthier and more powerful, (b) feeling relaxed and refreshed, (c) feeling the nature deeply, (d) getting physical and mental fitness, (e) learning and improving skills, (f) getting environmental consciousness, (g) meeting new people, (h) spending time with friends, (i) gaining self-confidence, (j) belonging to a group, (k) feeling more important, and (l) spending time with family”. In another example which represents the results of “The Profile of Turkish Trekkers, the reasons why they attend outdoor activities” reported by (Kalkan, 2012) are mainly the same motivational factors listed in Ardahan (2011), Manfredo et al. (1996), McKenzie (2000), and Yerlisu Lapa et al. (2010). As seen, the needs and the benefits of participants are mainly common in Turkey and other countries.

There must be a relationship between the reasons for participating in mountaineering activities and benefits of attending them. In many studies, reasons and benefits were studied separately; i.e. only reasons or benefits are examined rather than their relationship, which is the main scope of the current study.

METHOD

The scope of this study is restricted to Turkish mountaineers.

Sampling: The Sampling group of this study consists of 426 mountaineers ($n = 426$, $\bar{X}_{age} = 36.12 \pm 10.10$). The exact number of mountaineers in Turkey is not defined. In this study, random sampling has been applied and an electronic questionnaire form has been sent to all members of mountaineering clubs under Turkish Mountaineering Federation. All the received survey answers have been assessed.

The tool of gathering data and variables: An electronic questionnaire form developed to gather data suitable for the purpose of this study was sent to all members of mountaineering clubs under Turkish Mountaineering Federation. Suitable for the purpose of this study, this form was sent to participants between 1st November, 2011-31st March, 2012. The form includes demographic questions and two test batteries, which have 21 factors motivating people to participate in mountaineering activities and 14 benefits gained during these activities. The majority of MFSM items were taken from the studies of Driver (1983) and Manfredo et al. (1996) and the rest of the items were taken and supported from the studies of Ardahan and Lapa (2010), Ibrahim and Cordes (2002), Kalkan (2012), Kalkan and Ardahan (2012), Kyle et al. (2006) and Yerlisu Lapa et al. (2010). A five-point Likert scale was used and the range covers (1: definitely no, 5: definitely yes). All measures were in Turkish and linguistically adapted to the cohort.

Before performing an exploratory factor analysis (EFA) on the 21 items measuring perceived importance of MFSM, two items were excluded from further analyses due to low initial communalities (<0.40) and on the 14 items measuring perceived importance of BSM, two items were excluded from further analyses due to low initial communalities (<0.40). The factorability of the correlation matrix of the remaining 19 items for MFSM's Kaiser–Meyer–Oklin value was 0.809 and the remaining 12 items for BSM' Kaiser–Meyer–Oklin value was 0.807. The two values were over the recommended value of 0.6 (Kaiser, 1974), and has a statistically significant value for Bartlett's Test of Sphericity.

Varimax rotation was performed on 19 items for MFSM and 12 items for BSM. The rotated results were given in Table-1 for MFSM, in Table-3 for BSM with all factors having several strong factor loadings and all variables having loadings substantially from only one factor. Based upon the content of the items clustering on each factor, the five

motivational factors to participate in mountaineering categories and three benefit categories were obtained.

The reliability of each factor estimated by Cronbach's alpha was the five factors for MFSM (total Cronbach's Alpha is 0.822) had eigenvalues of 2.576 (**Socialization** - items; C07, C08, C09, C10, C11, C13 and C19), 2.527 (**Competition** - items; C14, C15 and C16), 2.488 (**Healthy** – items; C05, C17, C18), 1.893 (**Escape** –items; C03 and C04) and 1.752 (**Relaxing** – items; C01, C02, C06 and C12), the three factors for BSM (total Cronbach's Alpha is 0.852) had eigenvalues of 3.173 (**Got physically and mentally healthy and relaxing** – items; B01, B02, B03, B08 and B12), 2.737 (**Socialization and self-confidence** - items; B06, B07, B09, B10 and B11) and 1.994 (**Use and develop new Skills-** items- B04 and B05)

RESULTS

We used EFA method to determine sub-dimensions of factors which motivate persons to attend mountaineering activities. For this, we added 19 cause items and performed the Bartlett test of sphericity (Chi-square=2387, P=0.000) and calculated Keiser-Meyer-Olkin measure of sampling adequacy (0.809>0.5) and saw that EFA method is applicable to our data set. As a result of this analysis with varimax rotation, we got five cause components that account for 59.136% of the total variance. Cause items, given in Table-7, including factor components, factor loadings, communalities, descriptive statistics for each item (means and standard deviations), Cronbach's Alpha values for the components and all the scale and all the other EFA results for causes are given in Table-1. Five factor components are named as follows;

Cause1: **“Socialization”** factor is the physical and emotional relation created between the participant and the others before/during/after the activity and it includes “recognition and to be recognized”, “to be with friends”, “to be with family”, “to meet the celebrity in this activity”, “to help others and take social responsibility”, “to have new social relations and to make new friends”, and “to improve social status” and “take social power”. Cronbach's Alpha coefficient = 0.758.

Cause2: **“Competition”** factor includes internal and external competition process and includes; “to be a fighter and to revolt”, “to achieve and compete with oneself and others” and “to achieve self realization”. Cronbach's Alpha coefficient = 0.767.

Cause3: **“Health”** factor explains physical and mental dimensions of health and includes; “to get physical and mental rehabilitation”, “to get physical and mental wellness,” and “to get physical and mental fitness”. Cronbach's Alpha coefficient = 0.744.

Cause4: **“Escape”** factor explains escaping from something, somebody and/or something which has a negative effect on wellness and includes; “to escape from family” and “to escape from responsibility”. Cronbach's Alpha coefficient = 0.749.

Cause5: **“Relaxing”** factor defines all the things which give physical and mental wellness and includes; “to feel relaxed and refreshed”, “tempting things in the nature”, “to escape from routine and crowd”, and “nature love and the desire to be in nature”. Cronbach's Alpha coefficient = 0.543.

Table-1: Factor Analysis for causes

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,809					
Bartlett's Test of Sphericity	Approx. Chi-Square	2387					
	df	171					
		Sig.	0.000				
Components and Factor Loadings							
Items	Cause 1	Cause 2	Cause3	Cause 4	Cause 5	Communalities	M ± SD
C10	0.678					0.541	2.00±1.0 1
C19	0.393					0.574	3.74±1.0 3
C09	0.660					0.553	2.09±0.9 9
C08	0.639					0.546	1.59±0.7 9
C11	0.617					0.577	3.05±1.1 3
C07	0.560					0.542	3.27±1.1 3
C13	0.525					0.531	2.30±1.0 9
C15		0.820				0.696	3.73±1.1 4
C16		0.742				0.642	3.18±1.2 1
C14		0.739				0.630	3.69±1.0 9
C18			0.755			0.681	4.23±0.8 7
C17			0.688			0.610	4.25±0.8 4
C05			0.680			0.506	4.30±0.7 5
C03				0.831		0.730	1.65±0.9 1
C04				0.824		0.697	1.52±0.8 7
C06					0.616	0.526	3.90±0.9 5
C12					0.588	0.602	3.86±0.9 9
C02					0.580	0.556	3.78±1,1 9
C01					0.547	0.495	4.62±0.6 5
Cronbach's Alpha:	0.758	0.767	0.744	0.749	0.543		
Rotated Eigenvalues:	2.576	2.527	2.488	1.893	1.752		
Rotated variance (%):	13.55 7	13.30 1	13.095	9.961	9.222		For all scale, Cronbach's Alpha=0.822
Rotated cumulative variance (%):	13.55 7	26.85 8	39.953	49.91 4	59.13 6		

Mean values of the items included in each component are calculated and five variables, as CS1, CS2, CS3, CS4 and CS5, were obtained as the proxies for the cause components. After that, Pearson's correlations between each cause items and cause factor components were calculated. The highest correlation value of an item occurs in the real cause factor, but also, it has some other correlation values with other cause factors. For example, C11 (to help others and take social responsibility) in Cause1 (**Socialization**) has significant correlations with all other cause components;

Competition, Healthy, Escape, and Relaxing. These results can be seen in Table-2.

Table-2: Pearson Correlations between cause items and cause components

	CS1	CS2	CS3	CS4	CS5
C10	0.68**	0.28**	0.16**	0.22**	0.10*
C19	0.59**	0.19**	0.39**	0.01	0.20**
C09	0.53**	0.00	0.07	0.07	0.12*
C08	0.57**	0.25**	0.03	0.32**	0.06
C11	0.71**	0.29**	0.29**	-0.01	0.34**
C07	0.71**	0.32**	0.32**	0.15*	0.26**
C13	0.68**	0.44**	0.23**	0.26**	0.25**
C15	0.28**	0.85**	0.25**	0.16**	0.28**
C16	0.37**	0.83**	0.26**	0.18**	0.21**
C14	0.35**	0.80**	0.27**	0.12*	0.36**
C18	0.32**	0.33**	0.87**	0.01	0.43**
C17	0.30**	0.25**	0.85**	-0.02	0.45**
C05	0.22**	0.18**	0.71**	0.04	0.33**
C03	0.22**	0.15**	-0.02	0.90**	0.04
C04	0.15**	0.18**	0.04	0.89**	-0.02
C06	0.26**	0.18**	0.42**	-0.04	0.71**
C12	0.26**	0.37**	0.34**	-0.07	0.66**
C01	0.16**	0.02	0.34**	-0.17**	0.56**
C02	0.13**	0.25**	0.24**	0.21**	0.69**

** . Correlation is significant at the 0.01 level (2-tailed).
* . Correlation is significant at the 0.05 level (2-tailed).

As seen in Table-2, the correlation values of the items grouped in the relevant sub-dimensions are the highest and the most significant. These results confirm correct sub-dimensions after EFA.

All analyses above are done for benefit items of mountaineers. 12 benefit items given in Table-7, are included in EFA. First, Bartlett test of sphericity (Chi-square=2470, P=0.000) was performed and Keiser-Meyer-Olkin measure of sampling adequacy (0.807>0.5) was calculated and our data set is decided to be applicable to EFA. As a result of EFA with varimax rotation, three benefit components that account for 65.871% of total variance were obtained. Benefit items included factor components, factor loadings, communalities, descriptive statistics for each item (means and standard deviations), Cronbach's Alpha values for the components and all scale and all the other EFA results for the benefits are given in Table-3. The three benefit factor components are named as follows:

Benefit1: **"Got physically, mentally healthy and relaxing"** factor includes; "feeling happier, healthier and more powerful", "feeling relaxed and refreshed", "getting physical and mental fitness" and "feeling the nature deeply". Cronbach's Alpha coefficient = 0.842.

Benefit2: **"Socialization and self-confidence"** factor includes; "feeling more important", "belonging to a group", "spending time with friends", "gaining self-confidence", and "spending time with family". Cronbach's Alpha coefficient = 0.775.

Benefit3: **"Use and develop new Skills"** factor includes; "learning new skills", and "improving skills". Cronbach's Alpha coefficient = 0.890.

Table-3: Factor Analysis for benefits

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,807				
Bartlett's Test of Sphericity		Approx. Chi-Square	2470			
		df	210			
		Sig.	0.000			
Items	Components and Factor Loadings	Benefit1	Benefit2	Benefit3	Communalities	M ± SD
B02		0.872			0.806	4.64±0.59
B03		0.862			0.794	4.56±0.64
B01		0.858			0.748	4.65±0.59
B08		0.646			0.567	4.43±0.68
B12		0.495			0.387	4.45±0.72
B07			0.755		0.644	3.36±1.19
B06			0.752		0.660	3.73±1.09
B09			0.702		0.572	4.02±0.85
B11			0.628		0.601	4.02±0.95
B10			0.609		0.424	2.37±1.14
B05				0.876	0.862	4.30±0.73
B04				0.847	0.838	4.45±0.72
Cronbach's Alpha:	0.842	0.775	0.890	For all scale, Cronbach's Alpha=0.852		
Rotated Eigenvalues:	3.173	2.737	1.994			
Rotated variance (%):	26.444	22.810	16.616			
Rotated cumulative variance (%):	26.444	49.255	65.871			

Mean values of the benefit items included in each benefit components were calculated and three variables, as BF1, BF2 and BF3, were obtained as the proxies for the benefit components. After that, Pearson's correlations between each benefit item and benefit factor components were calculated. The highest correlation value of an item occurs in the real benefit factor, but it also has some other correlation values with other benefit factors. These results can be seen in Table-4.

Table-4: Pearson Correlations between benefit items and benefit

	BF1	BF2	BF3
B02	0.85**	0.31**	0.43**
B03	0.86**	0.34**	0.43**
B01	0.81**	0.24**	0.33**
B10	0.76**	0.44**	0.37**
B14	0.67**	0.39**	0.36**
B09	0.33**	0.81**	0.37**
B08	0.33**	0.80**	0.40**
B11	0.40**	0.72**	0.36**
B13	0.46**	0.75**	0.47**
B12	0.14**	0.57**	0.11*
B06	0.44**	0.44**	0.95**
B05	0.49**	0.44**	0.95**

** . Correlation is significant at the 0.01 level (2-tailed).
* . Correlation is significant at the 0.05 level (2-tailed).

As seen in Table-4, the correlation values of the items grouped in the relevant sub-dimensions are the highest and the most significant. These results confirm correct sub-dimensions after EFA.

Some descriptive statistics for the cause and benefit components can be seen in Table-5

Table-5: Descriptive statistics of components

	N	Mean	Std. Deviation	Minimum	Maximum
BF1	426	4.55	0.50	1.40	5.00
BF2	426	3.50	0.76	1.00	5.00
BF3	426	4.29	0.69	1.00	5.00
CS1	426	2.58	0.66	1.00	5.00
CS2	426	3.53	0.95	1.00	5.00
CS3	426	4.26	0.67	1.00	5.00
CS4	426	1.58	0.79	1.00	5.00
CS5	426	4.04	0.63	1.00	5.00

To find out the impact of the cause components on the benefit components, the regression equations were given below:

$$BF1 = \alpha_1 + \beta_1 CS1 + \beta_2 CS2 + \beta_3 CS3 + \beta_4 CS4 + \beta_5 CS5 + u_1 \quad (1)$$

$$BF2 = \alpha_2 + \beta_6 CS1 + \beta_7 CS2 + \beta_8 CS3 + \beta_9 CS4 + \beta_{10} CS5 + u_2 \quad (2)$$

$$BF3 = \alpha_3 + \beta_{11} CS1 + \beta_{12} CS2 + \beta_{13} CS3 + \beta_{14} CS4 + \beta_{15} CS5 + u_3 \quad (3)$$

In these equations, α_i are constant, β_i are regression coefficients and u_i are disturbance terms. To estimate the coefficients of the equations, ordinary least square (OLS) estimators were used. First, the presence of heteroskedasticity was checked out and Breusch-Pagan/Cook-Weisberg test was performed and $\text{Chi}^2=285.57$, $P>\text{Chi}^2=0.000$ for equation-1, $\text{Chi}^2=21.43$, $P>\text{Chi}^2=0.000$ for equation-2 and $\text{Chi}^2=34.01$, $P>\text{Chi}^2=0.000$ for equation-3 were obtained. As a result of these tests, the null hypothesis of constant variance for all models were rejected. So, we computed robust standard errors of the coefficients because of heteroskedasticity in each model. After that, we checked possible multicollinearity problem and calculated variance inflation factors (VIF) for each independent variable in the models and found that maximum VIF value is 1.43 not higher than the value 10, which is the upper limit of high multicollinearity (Ardahan & Mert, 2012). Finally, it was assumed that disturbances are normally distributed because of the large sample sizes. If sample size is large, one can use normal distribution for OLS estimates asymptotically even if disturbances are not normal by relying on the Central Limit Theorem (Ardahan & Mert, 2012).

The results of regression models are given in Table-6. As seen in the Table, all three models are significant ($F=13.66$, $P=0.000$ for the model of BF1, $F=37.20$, $P=0.000$ for the model of BF2 and $F=11.96$, $P=0.000$ for the model of BF3). The variable CS1 has positive and significant effects on BF2 and BF3 (Coef.=0.6440, $P=0.000$ for BF1 and Coef.=0.1712, $P=0.004$ for BF3) while it has no effect on BF1. The higher the CS1 is, the higher the BF2 and the BF3 are. The variable CS2 has positive and significant effects only on BF3 (Coef.=0.1178, $P=0.005$ for BF3). That is, increasing the CS2 increases the BF3. The variable CS3 has positive and significant effects on BF1 and BF3 (Coef.=0.3084, $P=0.000$ for BF1 and Coef.=0.1623, $P=0.037$ for BF3). Its effect on BF2 is insignificant. The variable CS4 has negative and significant effects on all benefit components (coef.=-0.0922, $P=0.002$ for BF1, Coef.=-0.0869, $P=0.011$ for BF2 and Coef.=-0.0768, $P=0.059$ for BF3). When the CS4 level gets higher, all benefit levels decrease. Finally, the variable CS5 is positively

significant for only BF1 (Coef.=0.1931, P=0.000). The higher the CS5 is, the higher the BF1 is. It is insignificant for the other benefit components.

Table-6: Regression models of benefit components

	BF1			BF2			BF3		
	Coef.	Robust St. Err.	P	Coef.	Robust St. Err.	P	Coef.	Robust St. Err.	P
Cons.	2.4521 ***	0.3026	0.000	1.6744 ***	0.3240	0.000	2.7092 ***	0.2918	0.000
CS1	0.0159	0.0322	0.619	0.6440 ***	0.0582	0.000	0.1712 ***	0.0588	0.004
CS2	0.0293	0.0268	0.275	0.0576	0.0415	0.166	0.1178 ***	0.0420	0.005
CS3	0.3084 ***	0.0657	0.000	-0.0013	0.0769	0.986	0.1623 **	0.0776	0.037
CS4	-0.0922 ***	0.0293	0.002	-0.0869 **	0.0341	0.011	-0.0768 *	0.0406	0.059
CS5	0.1931 ***	0.0511	0.000	0.0260	0.0771	0.736	0.0382	0.0722	0.597
N	426			426			426		
F(5,420)	13.66			37.20			11.96		
Prob.	0.000			0.000			0.000		
R ²	0.37			0.34			0.15		

* significant at .10 level, ** significant at .05 level, *** significant at .01 level

Table-7: Causes and Benefits Items

C01- nature love and the desire to be in the nature
C02- to escape from routine and crowd
C03- to escape from family
C04- to escape from responsibility
C05- to get physical and mental fitness,
C06- to feel relaxed and refreshed
C07- to have new social relations and to make new friends
C08- to meet the celebrity in this activity
C09- to be with family
C10- to recognition and be recognized
C11- to help others and take social responsibility
C12- tempting things in the nature
C13- to improve social status and take social power
C14- to achieve self realization
C15- to be a fighter and to revolt
C16- to achieve and compete with oneself and others
C17- to get physical and mental wellness,
C18- to get physical and mental rehabilitation
C19- to be with friends
B01- feeling happier
B02- feeling healthier and more powerful
B03- feeling relaxed and refreshed
B04- improving skills
B05- learning new skills
B06- belonging to a group
B07- feeling more important
B08- getting physical and mental fitness
B09- spending time with friends
B10- spending time with family
B11- gaining self-confidence
B12- feeling the nature deeply

DISCUSSION

This paper introduces the Motivational Factors Scale for participating in Mountaineering activities and the

Benefits Scale of these activities and regression models of benefit components.

The sub-dimension of MFSM can be explained by the motivation theory. All five factors are included in Needs Theory⁽³⁾. Some factors need to be explained by using one or more sub-dimensions of Needs Theory. While Health, Escape and Relaxing can be thought in Physical Needs sub-dimension, Socialization falls into Belonging and Self-actualisation sub-dimension, and Competition and Escape can be considered in Esteem and Self-actualisation sub-dimension. On the other hand, the internal motivational factors occur in the following items; “to feel relaxed and refreshed, to be with friends, to be with family, to help others and take social responsibility, to have new social relations and to make new friends, to achieve and compete with oneself, to achieve self realization, to get physical and mental rehabilitation, to get physical and mental wellness, and to get physical and mental fitness, nature love and the desire to be in the nature, and to improve social status and take social power” and external motivational factors occur in these items; “tempting things in the nature, to escape from routine and crowd, to escape from family and to escape from responsibility, to be a fighter and to revolt, to achieve, to compete with self and others, to recognise and to be recognized, to be with friends, to meet the celebrity in this activity, to help others and take social responsibility, to have new social relations and to make new friends, and to improve social status and take social power”. These factors which motivate a person to do mountaineering can be explained by using Self Determination Theory (Deci & Ryan, 1985), the Achievement Goal Theory (Pintrich, 2000), Activity Theory (Engeström et al., 2003). The item of “to be a fighter and to revolt, especially having T-type personality” can be explained by Personality Theory (Knutson, 1995). These factors overlap and support the results of Ardahan (2011), Ardahan and Lapa (2010), Driver (1983), Ibrahim and Cordes (2002), Kalkan (2012), Kalkan and Ardahan (2012), Kyle et al. (2006), Manfredo et al. (1996), McKenzie (2000), Yerlisu Lapa et al. (2010).

Benefit can be defined as a physical, social and mental result of participating in a mountaineering activity. These benefit items explained by BSM define the realization level of the cause items for taking part in the activity. The means of benefit items and the benefits themselves overlap the result of Ardahan (2011), Ardahan and Lapa (2010), Kalkan (2012), Kalkan and Ardahan (2012). The regression results given in Table-6 explain that while the major affect of CS1 is on BF2, that of CS2 is on BF3 and that of CS3, CS4 and CS5 is on BF1. At the same time, CS1 and CS3 have a positive effect on BF3. The regression models of benefits explain the main aim of this research. It is expected that CS1 has a positive impact on BF2, and it seems so. At the same time, CS1 has a positive impact on BF3. This means that socialization makes and forces people to learn new skills and improve themselves. As Ucan, Tasci and Owayolu (2008) concluded, in a society whether in a formal or informal social life, one compares many personal skills with those of others, observe them and try to replicate and improve them. This helps and increases the awareness and urges these people “to use and develop new skills”. This result makes the conclusion even stronger.

CS2 has a positive and significant affect on BF3 and this explains how competition affects the benefits “learning new skills” and “improving skills”. The desire to be in a competition (oneself or others), compels people “to learn new skills” and “improve their skills” in order to achieve competition. This conclusion overlaps the main aim of this research.

CS3 has a positive and significant affect on BF1 and BF3, and this explains how health reasons affect the BF1 and

³ - Retrived December 02, 2012, from <http://changingminds.org/explanations/needs/maslow.htm>.

this also influences “learning new skills” and “improving skills”. This means that if a person wants to be physically or mentally fit, s/he has to do something “to get physical and mental rehabilitation”, “to get physical and mental wellness,” and “to get physical and mental fitness”. At the same time, the benefit of “Use and develop new Skills” is a result of changing personal health awareness. This result supports the main aim of this research.

Escaping factors (CS4) has a negative effect on all Benefit Components. If a person wants to participate in mountaineering for the escaping reason, benefit components decrease, because mountaineering is not a sport which is suitable to be done alone. It needs group participation (Kalkan, 2012). Because of this necessity, when the person wants to participate in a mountaineering activity because of the escaping reasons, the benefits of this participation decreases. These results explain and overlap the exact relation between causes and benefits.

CS5 has a positive and significant effect on BF1 and it shows how relaxing reasons affect the BF1. These results also support the main aim of this research; in other words, it can be said that there are significant regression models between MFSM and BSM.

It can be said that MFSM is an adequate validity to explain motivational factors to participate in mountaineering, and BSM is an adequate validity to explain benefit factors to attend mountaineering for the Turkish population. Cronbach's Alpha internal consistency test (for MFSM=0.822, for BSM=0.852) was applied to the identified sub-factors and overall two scales. The variance explained by these subscales was %59.136 for MFSM and %65.871 for BSM.

Finally, results reveal that the Motivational Factors Scale for participating in Mountaineering activities and the Benefits Scale of participating in Mountaineering activities were reliable and valid in the estimation of the motivational factors and benefits of attending mountaineering for the Turkish population.

Moreover; these scales are suitable and open to be developed.

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