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Message from the Editors

The Online Journal of Recreation and Sport (TOJRAS) welcomes you. TOJRAS also thanks all researchers, practitioners, administrators, educators, teachers, parents, and students from all around the world for visiting the volume 3 and issue 3.

TOJRAS is a quarterly journal (January, April, July and October). This online periodical is devoted to the issues and applications of recreation and sport. Reviewed by leaders in the field, this publication is designed to provide a multi-disciplinary forum to present and discuss all aspects of recreation and sport.

TOJRAS records its appreciation of the voluntary work by the following persons, who have acted as reviewers for one or more submissions to TOJRAS for v3i3. The reviewers of this issue are drawn quite widely from education field. Reviewers' interests and experiences match with the reviewed articles.

I am always honored to be the editor-in-chief of TOJRAS. Many persons gave their valuable contributions for this issue. I would like to thank the editorial board of this issue.

TOJRAS invites article contributions. Submitted articles should be about all aspects of recreation and sport. The articles should also discuss the perspectives of students, teachers, school administrators and communities. The articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to TOJRAS. For any suggestions and comments on the international online journal TOJRAS, please do not hesitate to contact with us.

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Sports Tourism And Karate: An Example of Adana/Turkey

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ABSTRACT

Karate is one of the martial arts sports that is practised widely around the globe. However, as with other forms of martial arts sports, it is also wrongly perceived as being wild and cruel when compared with other forms of sports. It is believed that one reason to this perception is due to limited academic research on the subject that presents the origins and philosophy of the martial arts. This paper hopes to shed a small light on this matter by providing a brief history of Karate, how it is practised in the World and in Turkey by concentrating Turkey's 5th largest city, Adana specifically.

Keywords: Sports Tourism, Karate, Adana

INTRODUCTION

Sports Tourism is defined as travelling away from home for the purpose of participating actively or inactively in any sports related non-commercial activities (Hazar, 2007). Keskin (2008) provides a similar but shorter definition: Sports Tourism is participating in all sorts of sports activities actively and inactively.

Participating actively in a sports activity refers to an individual's desire to pursue his/her sports related hobby such as skiing or scuba diving. Participating inactively in a sports activity means attending to any form sports activity as a spectator.

It could be argued that sports activities have a strong contribution to the tourism revenues of a country or a region. Countries can generate great amounts of incomes with the help of sports activities along with using it as a marketing tool to advertise the country to tourists. It also helps to identify alternative areas for different types of sports activities and help to improve local communities in this respect. Furthermore, countries could concentrate on a specific sports activity that they believe represents them most in abroad with the help of famous sports people on the given activity.

A study that was carried out by the International Sports Committee (STIC) revealed revenues that are generated through sports tourism constitute 32% of the overall worldwide tourism revenues. This constitutes more than \$150 billion in 2012, out of almost \$500 billion total tourism income in the world. The amount of tourists increased 10.4% in Seoul in 1996 where the city hosted Olympics. Sydney, capital city of Australia displayed similar pattern. In 2000 where the Olympics organised, Australia enjoyed 10% rise in the number of tourists she received. Perth, another city in Australia organised 20 different international sports events in 1 year, an achievement quite extraordinary. Lake Placid city in USA hosted winter Olympics twice and a bill-board at the entrance of the city proudly presents this fact to the visitors. Kuala Lumpur, after hosting Commonwealth Games set aside some funding to support sports tourism related activities, along with announcing a sports and recreation year specifically for the sports tourism events (TURSAB Ar-Ge Dept., 2002). Sports Tourism also contributes advertisement of the country as mentioned before. With this in mind, countries market a destination starting on regional then moving into national level. In this way, benefits of these marketing efforts could be received gradually and in long term.

LITERATURE REVIEW

Karate's Brief History

There are numerous publications about Karate in various languages. Majority of the publications use relatively new other publications as references. The main reason for this the lack of old and well established publications on the subject. This inevitably resulted some of these publications (old or new) being lack of credibility. It is, therefore, fair to comment that there is a gap in literature and any publication that seeks to explore this area further is a contribution to knowledge.

Kung-fu practised today owes its main principles to a Buddhist monk who developed these exercise like movements for the purpose of helping monks to escape from the monotonous life of the monastery they lived in.

These techniques modified and enriched by Chinese before moving to Okinawa, Japan. Okinawa was under the influence of Chinese because it is located further to main Japanese islands. Okinawans under the ruling of Chinese first then Japanese, experienced different self-defence styles. With the help of these different styles, they developed their own style, which was named as Okinawa-te.

Gichin Funakoshi

Gichin Funakoshi sensei¹ is accepted as the founder of “Shotokan” karate school and seen as the father of modern karate. Coming from a samurai family background in Okinawa, he practised Karate with then the most famous karate instructors Itosu and Azato senseis. Despite his intense training under the careful watch of Itosu and Azato senseis, Funakoshi sensei managed to continue his formal education and after graduation started to work as a primary school teacher. With the help of his background as a school teacher, he started to work on Okinawa karate in order to systemize and improve it. During this process, he shared the problems he encountered with his senseis and benefited from their knowledge and experiences. Following the footsteps of Itosu sensei, he managed to include karate to the curriculum of Okinawa Education Ministry. Special displays he organised in order to promote karate attracted the attention of Okinawa’s famous people, including high-rank government and military officers. In a very short time, Funakoshi sensei became one of the foremost experts on karate in Okinawa.

Karate in Japan

Funakoshi sensei displayed his developed methods for karate publicly first time in 1906 in Okinawa-tang-te dojo². The approvals and appraisals he received from others encourages him synthesize Shorin and Shorei methods. He set eyes to Japan after his success in Okinawa and responded to the invitations he received in mainland Japan. The karate displays he performed with his students received much attraction from the public and other martial arts instructors. Two pioneers in their field he met one of these visits, Jigaro Kano sensei, founder of Judo and Hoan Kasugi, head of Tokyo Art Association recommended him to move to Tokyo from Okinawa. Following this recommendation, he moved to Tokyo by leaving his family in Okinawa.

Funakoshi sensei set Tokyo military dojo right after moving to Tokyo with the help of his contacts within the Imperial Palace. In 1922 he published his first book on Karate with the help of Hoan Kasugi. The same year he also set-up Keio University Karate Club, the first karate club in history. Responding to an invitation by the Emperor, in 1928 he made a karate display in the Palace. Continuing with the university clubs, in 1930, he set-up Tokushoku University Club, followed by Chodo, Shodei, Gokuhu, Hosei, Nihotu and Neigi University Clubs, totalling more than 200 university clubs under his instruction. In 1936, his students opened-up the first karate dojo in the world for him, naming it Shotokan. The name of Shotokan (the way of the Shoto) later on becomes the style he devised during a life-time of his work.

Four Traditional Japanese Karate Styles

Funakoshi sensei’s tiresome efforts to get karate recognised as a traditional martial arts activity paid-off. Karate is now considered as one of the Japanese oriented martial art all over the world. Following Funakoshi sensei’s footsteps, other Okinawan karate senseis arrived other big cities of Japan like Osaka and Kyoto, along with Tokyo. Kenwa Mabuni sensei for example set Shito-Ryu³ and Chojun Miyagi sensei set Goju-Ryu. The fourth traditional karate style that is practised world-wide, Wado-Ryu is set by Hironori Ohtsuka sensei, a student of Funakoshi sensei.

First Karate Tournaments

Japanese karate training consisted of only Kata 4 until 1940s. In those early days it was taking 3-5 years to master a kata fully. Professor Jigaro Kano, himself a student and follower of Funakoshi sensei first suggested that, like in some other martial arts, karate should also include kumite⁵. Following this suggestion, Funakoshi sensei devised different forms of kumite such as kihon-ippou kumite, sanbon kumite and jiyu-ippou kumite that later on helped him to develop free competition style kumite.

In 1954, Funakoshi sensei’s students organised a convention in order to regulate different forms of karate and form an association. Following this gathering, in 1955 JKA (Japan Karate Organisation) was established. JKA’s perhaps one of the most important objectives was to decide on how to regulate karate competitions all over Japan. This would have reduced amount of injuries encountered while performing free style kumite matches. When the matter was brought to his attention Funakoshi sensei indicated that he would allow a tournament organised in line with the “Karate’s spirit”. By keeping Funakoshi sensei’s comments in mind, head of JKA’s Education Committee Hidetaka Nishiyama sensei prepared a JKA competition rule book after a year’s hard work and the book was distributed all over the karate schools in Japan. As a result, first karate tournament abiding JKA’s competition rule book was organised in 1957 at Tokyo Gymnasium. However, at the same year Funakoshi sensei also passed away, being unable to watch the

tournament.

Karate in the World

In 1963 in France first European Karate Convention was organised. Perhaps the most important outcome of this convention was to regulate karate in Europe despite the variations and different styles in each country, along with setting-up a joint referee committee.

In 1966 first karate tournament in Europe was held. The following tournament took place in 1967 in London with an appraisal from the critics for being carefully organised. The next step was to organise World Karate Federation (WUKO). In 1970 WUKO was announced and J. Delcourt elected as the first president of WUKO. In order to finalise the details of next coming event, WUKO member countries met in Paris under France's presidency. In 1973, first World Karate Championship was organised in Japan by WUKO.

JKA, on the other hand, as a counter move to WUKO announced International Amateur Karate Federation (IAKF) in 1974. Some countries decided to join IAKF, others continued with WUKO. In 1975 WUKO organised its third World Championship whereas IAKF organised its first in Los Angeles.

KARATE AS AN OLYMPIC SPORTS CATEGORY

In 1970 WUKO decided that it was time for karate to be categorised as an Olympic sports activity. For this in, an application was made to the International Olympics Committee (IOC). However, IAKF also applied to IOC, declaring that WUKO was not the sole representative of karate in the world. After evaluating both applications separately, IOC decided that WUKO was more suitable to represent karate, hence to join Olympics. Following a counter strategy to this result, IAKF declared that it was renamed under International Traditional Karate Federation (ITKF). Their application to IOC as the sole representative of karate, on the other hand was again rejected. Appealing against IOC's decision, ITKF took the matter to the International Sports Court in Lausanne, Switzerland. The court in Lausanne ruled in the favour of WUKO on the matter. Finally, WUKO also decided to change its name and became WKF.

Karate in Adana and Turkey

Karate in Turkey started in the early 1970s. Hakki Kosar sensei is believed the first karate instructor in Istanbul that officially practiced karate. Using his background in Judo, Kosar sensei set the foundations of karate in Turkey. As being part of WKF, Turkish Karate today developed from strength to strength. A quick glance on Turkish Karate Federation's official website (www.karate.gov.tr) could give the reader an idea about this steady improvement and success story of the Turkish Karate.

According to Turkish Ministry of Sports official figures, there are 20 karate schools and 60 instructors that practice karate in Adana. 39 of these instructors are first stage (assistant instructor), 11 are second stage (instructor), 8 are third stage (advanced instructor), 1 is fourth stage (experienced instructor) and 1 is fifth stage (highest level instructor). In addition, there are 22 assistant referees, 16 regional referees, 10 national referees and 2 international referees registered (<http://adana.gsb.gov.tr>).

Karate was introduced to Adana by Huseyin Bahar and Ekrem Turkmen senseis in 1980s. First tournament was organised in 1981 with limited to Adana only. Consequent years the number of clubs participating in the competitions increased with the help of other towns such as Kozan and Osmaniye. Later on these tournaments even expended further with the participation of other cities in the region, namely Mersin, Gaziantep, Osmaniye, Kahramanmaras, Hatay, Kilis, Sanliurfa and Adiyaman (Turkeri, 2008).

Below is a list of events that are held annually in Adana:

- Southern Towns Karate Championship
- Adults-over 20s Adana Karate Championship
- Adults-under 20s Adana Karate Championship
- Cadets Karate Adana Championship
- Youth Karate Adana Championship
- Children Adana Karate Championship
- Primary and Secondary Schools Adana Karate Championship
- High Schools Adana Karate Championship

Following is an example of the championships and the courses/ seminars that were organised in Adana:

- 1985- Third Regional Karate Championship
- 1986- Adana/Istanbul Teams Championship
- 1986- First Stage Instructor Training Course
- 1986- Assistant Referee Training Seminar
- 1987- Adults-over 20s National Karate Championship
- 2000- Universities National Karate Championship
- 2001- Second Stage Instructor Training Course
- 2005- Universities National Karate Championship
- 2005- Primary, Secondary and High Schools National Karate Championship
- 2005- General Training in Karate Seminar
- 2006- Warming-up in Karate Seminar
- 2006- Kumite Training in Karate Seminar
- 2007- First Stage Instructor Training Course
- 2007- Special training Methods in Karate Seminar
- 2008- Fifth Stage Instructor Training Course
- 2008- New Competition Rules in Karate
- 2009- Third Stage Instructor Training Course
- 2009- Fourth Stage Instructor Training Course
- 2009- Kata Training in Karate Seminar
- 2009- World Shotokan Karate Federation (WSKF) Seminar
- 2010- Second Stage Instructor Training Course
- 2012- First Stage Instructor Training Course
- 2013- Instructors Training Seminar (all stages) (Turkeri, 2008).

Comparing Adana with Gaziantep

Adana will be compared with Gaziantep, a city which is located about 200 km north-east of Adana. It is believed that two cities look similar in many different ways. Population wise, for example, 2012 figures shows Adana's population about 1.8 million whereas Gaziantep's 1.7 million. Perhaps another similarity is both cities being among one of the most developed city in their region and pioneering many different activities, including karate.

Between 2001 and 2012 Turkish Karate Federation organised 10 adults-over 20s national championships around the country. Clubs and individual competitors from Adana on different levels attended to these competitions. Adana collected 6 medals in these championships and all of them were bronze. Gaziantep collected 7 in total out of which 1 gold, 4 silver and 2 were bronze medals. This performance gap between two cities even widens when the statistics were compared adults-under 20s championships. Between 2003 and 2012 Turkish Karate Federation organised 12 adults-under 20s national championships in Turkey. Adana collected 22 medals and 1 of them was gold, 10 were silver and 11 were bronze medals. Gaziantep on the other hand, totalled 24 in which 5 were gold, 5 were silver and remaining 14 were bronze medals. Although total numbers were similar, it is fair to claim that Gaziantep's overall success rate was higher than Adana. First reason to reach this conclusion is, Gaziantep's gold and silver medal numbers were greater than Adana in both categories (under 20s and over 20s). Second, there are 5,261 licensed and 517 active (the ones attend to championships) karate practitioners in Adana whereas in Gaziantep the numbers are 4,186 and 340 respectively. That means despite having less number of participants from Gaziantep attended tournaments, total number of medals they collected were greater than the ones from Adana. (<http://adana.gsb.gov.tr>, <http://gaziantep.gsb.gov.tr>).

Discussion and Implications

Although being one of the high achieving sports in the country with high success rates, Turkish Karate is still taking baby steps when compared with rest of the world. Karate is still perceived a violent sports activity rather than

being a martial arts which has its roots in self-discipline, respect to others and physical development. One reason for this could be Karate's being one of the grass-roots favourite sports in its early days in Turkey (1970s and 1980s). Perhaps, despite having very promising results in Europe and in the World, lack of official attention and support (including financial) it received from the Turkish government is another contributing factor. Public's lack of interest to Karate also worth to mention. As the author of this article witnessed on various occasions, beach volleyball or a private kick-box display privately organised in a supermarket's car-park attracts more attention than official, Turkish Karate Federation and WKF organised European Championship.

When it comes to attract visitors to the country as sports activity, Karate fails on this as well. It is even worse when Turkey compared with other neighbouring countries. For example, JKA (Japan Karate Association) Turkey is part of JKA Europe based in Belgium. A seminar organised in Belgium 2012 attracted hundreds of participants from all over the Europe whereas a similar seminar organised in Istanbul same year with an invited Japanese sensei only had a handful of participants. The situation was even worse at the European Championship that was held in Serbia in April 2013. Out of 385 competitors from 9 different European countries, there was not a single Turkish participant. There could be several reasons for this lack of interest. Without much speculation, one possible reason is lack of sponsorship. Karate in Turkey still perceived as a hobby and an individual sports activity. This makes it difficult to get sponsorship, especially when compared with some other more popular sports. Adding on top of this is Turkish Karate Federation's (TKF) attempts to dominate Turkish Karate in a rather aggressive way make it difficult for individual organisations such as JKA to organise any event without the approval of TKF. Combined with these is the lengthy and costly process of applying for a European visa for Turkish citizens makes it more difficult for a Turkish Karate-ka6 to attend such an organisation.

As stated before, history of Karate in Turkey relatively new when compared with some other countries in the region. Although in recent years there is an uptrend in the success of the Karate, some of these promising results are due to individual efforts. A long-term and a more stable achievement can only be the outcome of planned and joint effort with the Government, TKF, independent organisations like JKA, WSKF and SKIF and related other parties. When it comes to academic support for this proposed future, more work needs to be done. There are a number of insignificant individual efforts such as this study and some other limited work that the author of this article is aware of with the help of his personal contacts. These efforts should be coordinated and orchestrated in order to get better results. It is therefore, fair to comment that academic research on Turkish Karate is even far behind than Turkish Karate on the field and academics should contribute more to the development of the activity.

1sensei is a Japanese word roughly translates as tutor or instructor, although in martial arts it symbolises someone with a years of deep knowledge and experience on the topic.

2dojo means sports hall or school where the karate is practised.

3ryu means school or style.

4kata is one of the three main components of karate and consisted of certain moves and combination, as if fighting against an invisible opponent.

5kumite is another one of the three components of karate and could be explained as a controlled competition against an opponent using certain allowed karate techniques.

6karate-ka is a person who practises Karate.

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The Effect of Participating in Official Recreational Activities on Organizational Citizenship, Organizational and Professional Commitment, Life Satisfaction and Achievement Perception

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ABSTRACT

The purpose of the present study was to examine the effect of participating in official recreational activities on Organizational Commitment (OC) and Professional Commitment (PC), Organizational Citizenship Behavior (OCB), Life Satisfaction (LS), and Achievement Perception (AP) on the example of Antalya Governmental Hospital. To test the effect of recreational activities on OCB, OC, PC, LS, and AP in Antalya Governmental Hospital, the social committee organized some recreational activities according to the preferences of the employees. Trekking, Pilates, Folk dance, Music and Theatre were the most wanted activities. All these activities were done between September 2012 and March 2013.

To find out the values of variables, at the end of March-2013 questionnaire forms delivered all participants (n=45) and asked "how you felt at the beginning of September 2012 and what do you feel now?" in the same questionnaire form. %93 of all participants (n=42, $\bar{X}_{age}=38.45\pm 5.35$) answered all questions clearly. The questionnaire form contained demographical questions and Organizational and Professional Commitments scale which was developed by Meyer et al. (1993), Organizational Citizenship Scale which was developed by Podsakoff et al. (1990), Life Satisfaction Scale which was developed by Diener et al. (1985) and Achievement Scale which was developed by Bilgin and Kaynak (2008). Since, in the process of assessing data the descriptive statistic methods, correlation test and t test have been used and results have been assessed according to significant level 0.05 and 0.01.

As a result of this study, there is statistically meaningful and positive effect of participating in official recreational activities on OCB, OC, PC, AP, and LS. Participating in official recreational activities increases the level of OCB, OC, PC, AP, and LS of employees.

Keywords: Organizational Citizenship, Organizational and Professional Commitment, Life Satisfaction, Achievement, Recreation

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

In the last four decades, the reasons for participating in recreational activities have drawn attentions of scientists and business owners. The demand and the supply for leisure activities and the revenue of this sector have been growing rapidly. Recreation, the main subject of this study, can be thought as a function of leisure. Recreation, be derived from Latin word "recreate" which has meaning as renewal, pleasure, refresh, rest, amusement and discover (Ibrahim and Cordes, 2002). There are many definitions of recreation. The most common is that recreation is the total activities which are chosen of one's own will in his/her leisure, which can be done alone or with a group, in indoor or outdoor, which gives physically and/or mentally well-being, refreshing, pleasure and renewal to a person (Ibrahim and Cordes, 2002; Turgut, 2012).

There are many reasons for wide spreading of recreation. These are urbanizing, increasing in leisure, in the spendable income of person's and families, growth in population and mobility of population, uncontrolled migration, changing facilities in technology and communication, increasing possibilities in transportation, the effects of advertisements and propaganda, changes in cultural structure, in ecology consciousness, new healthy concept,

increasing demand for entertainment, changes in values, in traditional family structure, in marriage and type of socializing, expanding in living alone or away from family (Turgut, 2012; Kalkan, 2012). There are many reasons for doing, joining or demanding recreational activities (whether official or not, whether free of charge or not, whether indoor or outdoor, whether alone or with a group, whether casual or serious leisure,...). These can be summarized as; physical and mental rehabilitation and fitness, to relax, physical activity, to be a fighter and to revolt, to improve oneself and to learn new skills, to achieve self realization, to be with friends, to spend time with family, to meet the famous one which will be a participant in this activity, to help others and take social responsibility, to observe people, to nonnock and get out of boredom, to escape from routine, crowd, family and responsibility, belonging to a group to have new social relations and to make new friends, to achieve and compete with oneself and others, to improve social status and take social power, recognition and be recognized (Tezcan, 1982; Burnett 1994; McKenzie 2000; Onder, 2003; Cordes and Ibrahim, 2003; Karakuçuk, 2005; Yilmaz, 2007; Ardahan, 2011b).

There are many benefits of participating in recreational activities. These can be ordered as; feeling relaxed and refreshed, learning group dynamics, feeling more important, making friends and socialization, meeting new people, belonging to a group and a team, learning and improving skills, getting self confidence, making individual decisions, improving problem solving and decision making style, learning risk management, taking responsibility of self and others, helping others, spending time with friends and with family, getting environmental consciousness, improving and getting physical and mental fitness, feeling happier, healthier and powerful, feeling the nature and neighborhood deeply, feeling ready for new challenges, improve personal borders, and being generous to diversity and a fault, improving intrinsic motivation, extending extrinsic motivation and decreasing amotivation situation (Burnett 1994; Weissinger and Bandalos 1995; McKenzie 2000; Cordes and Ibrahim, 2003; Yerlisu Lapa et al. 2010, Ardahan 2011b). To perceive these benefits of recreation, a person can buy any recreational activity whether free of charge or not from a group, a professional business, non governmental organization like universities, municipalities, clubs and foundations or organize his own activity by himself. In addition to this, some medium or large size business to get these benefits organize its own official recreational activities in which employees can participate in working hours or out of working hours or at the weekends alone, with family members or social friends. And some organizations accept organizing these type business applications, called "official recreation" as a component or part of the business design to establish expected or predicted benefits like togetherness, closeness on its employees whether from outsourcing or employing expert's fort the recreation service or enlist an employer's cooperation. In the near past, many businesses were organizing celebrations for their anniversaries, social meetings and some official education programs in hotels by using didactics technique, but now they are using some outdoor education system by using recreational activities like outdoor activities as trekking, orienteering, rock climbing, outdoor camps, art activities and art camp, some cultural activities as theatre to improve and strengthen their leadership, problem solving and decision making capacity, organizational commitment, inter personnel or organizational communication and corporate governance, belonging to organization (Cordes and Ibrahim 2003; Karaküçük 2005; Ardahan and Ipeker 2013; Ardahan 2013). These activities are mostly done in a business which runs total quality management process as a component of business design by a quality circle team activity (Kavrakoğlu, 1999). From this perspective, recreational activity is not a goal, but it is an instrument or a way to establish and improve expected and predicted behaviors by using different experience (Cordes and Ibrahim 2003; Ardahan and Ipeker 2013).

The satisfaction which has many sub classifications as professional satisfaction, job satisfaction, social satisfaction, wage earner satisfaction, economic satisfaction and LS can be defined as "the global judgment of a person's life" or "individual's emotional acts out of life and as a general attitude towards life" or "the realization level of expectations" (Diener 1984; Diener et al. 1985; Pavot and Diener 1993; Luthans 1994; Schemerhorn et al. 1994; Sung-Mook and Giannakopoulos 1994; Eroglu 1996; Ardahan 2011a, 2011b, 2012b;). There are four kinds of satisfaction that a person gets by working. These are economic satisfaction, job satisfaction, social satisfaction and professional satisfaction. All these have direct or indirect effect to LS or will be affected from LS (Ardahan, 2010).

Job satisfaction can be defined as a positive or negative emotional or/and pleasurable state resulting from the valuation of one's job, job experiences, the working condition. It is affected from physical and psychological needs, expectations and value of a person, work attributes as responsibility, complexity, autonomy, the opportunity to use abilities and to learn new ones, wage level, employee rights, role clearings, position, role of pay, preferment, personnel improvements. Economic satisfaction can be defined as person's feelings about the total of monetary earnings which are obtained from the job. Social satisfaction can be defined as a total of social capital and relations which were created between employees. Professional satisfaction can be defined as the person's idea about his carrier and occupation (Agho et al. 1993; Pool, 1997; Chet et al. 1998; Ardahan, 2010). All these satisfactions will affect and will be affected by a person's all life. The level of economic satisfaction, social satisfaction and professional satisfaction of an employee affect person's intrinsic motivation, job satisfaction and LS.

The factors affect LS can be ordered as finding life meaningful, having positive personality, having close friends, pleasure taken from daily life, reaching goals, quality of life, economic security, confidence in physical health, mental and physical wellness, positive relationships with family, relatives, colleagues and others, having a child (for the person's who wants to have a child), having meaningful marriage, helping others, satisfactory income, participating in recreational activities, domestic and national activities, reading, learning, working, watching movies and matches, occupation (Augusto et al. 2006; Ardahan 2011a, b; Bruce et al. 1976; Palmer et al. 2002; Schmitter et al. 2003; Ngai 2005; Sung-Mook and Giannakopoulos 1994).

Achievement can be defined as reaching and/or realizing goals by using all resources efficiently and productively and has common meaning for individuals, organizations, societies and states. Definition also includes all the relation in work life, sport, cultural life, mental and physical healthy, family and social life (Ardahan and Ipeker, 2013). Furthermore, achievement is a need and conscious drive which can be explained by intrinsic and extrinsic motivation (McClelland, 1985).

Achievement conscious drives and needs motivates the individual/organization to reach and realize its goal by using well-qualified effort and endeavor. And it is the resource of power which is necessary to cope with mental, psychological and physical borders, difficulties and negative condition, when faced. Achievement need identify individual/organization with its goal and when reached or realized, it is one of the important factors which will increase job satisfaction, professional satisfaction of an individual and will increase the worthy of organization credit to other organization, its employees and public (Kaya and Selçuk, 2007). In another word, in the achievement searching, positive growths, reaching and realizing the goals affect individual's LS, PC and OC. At the same time, achievement desire is an extrinsic motivation which is supported by reward system of organization, by others in the individual and social life. Besides these, it can be claimed that individual who has high LS level has high achievement perception, too (McClelland, 1961).

One of the basic requirements in organizations for realizing achievement is to establish and improve the level of the Organizational Citizenship Behavior, Professional and Organizational Commitments perceptions of employees. All these concepts are valid for all kinds of business and in all sectors and affect business productivity and efficiency (Top, 2012).

OC can be defined as the employee's willingness to have a strong desire and acceptance to stay with the organization's values and its major goals, to use high levels physical and mental effort support organizational goals and to use high levels effort on behalf of the organization (Porter and Lawler 1968). It involves feelings toward to the organization which they are employed and/or the degree of how much they were identified with the organization (Bakhshi et al. 2011). OC has three sub dimensions as Allen and Meyer (1990) defined; the first, the employee's emotional commitment to organization (feeling strong volunteer support to organization's values and its major goals, identification with and involvement in organization), the second; continuance commitment to organization (the costs and the benefits whether the employee quit the organization or not) and the third; normative commitment to organization (refers to the employee's feeling of obligation to remain with the organization, having same mission with organization) (Meyer and Allen, 1984; Allen and Meyer 1990; Meyer et al. 1993; Mowday, 1998; Celik 2007; Aslan 2008; Bakhshi et al. 2011; Top 2012).

For many individuals, it is accepted that the work is vitally important in their life. As Whalley (1987) declared, career or profession has different meanings than occupation. Career or profession is used to define the settled social roles and social positions. Besides this, career is one of the determinant factors which affect individual's abilities, physical and cognitive development, paradigm, habits, vision, behaviors, preferences, individualism perception, personality and identity (Ilhan 2008). Furthermore, career is one of the important links between individual and society (Hall, 1975; Kemerlioglu 1990). At the same time, career or profession is commonly one of the social differential factors which determine individual's reputation in the society, identity items and professional position (Aytac 2003). So, PC and professional satisfaction is really important in their career. From the PC perspective, career or profession concepts are used instead of occupation (Meyer et al. 1993). PC can be defined as the degree of individuals work performance which affects their self-esteem (Aslan, 2008) or the meaning of career in his/her life depending on specialization which was taken in training and professionally experienced (Baysal and Paksoy 1999). Meyer et al. (1993) classified PC in three sub dimensions like in OC, the first, the employee's emotional commitment to profession (the degree to identification with career, and willing to keep on the current career), the second; continuance commitment to profession (the costs and the benefits whether the employee continue to the same career or not, high cost of abdicating the current career) and the third; normative commitment to organization profession (realization possibility of the individual's goals with this career and sharing and giving the educational investment or career rewards to the society. When emotional and normative commitments to profession increase, professional satisfaction, job satisfaction and LS increase, too. Besides this, when continuance commitments to profession increase, job satisfaction increases, too (Baysal and Paksoy 1999; Aslan 2008). OCB which was defined first by

Bateman and Organ (1983) which interrogated by researchers who are interested in management, organization and/or business sciences draw inspiration from communal and forensic citizenship.

OCB may not always be directly and officially rewarded or recognized by the company, through salary increments or promotions for example, though of course OCB may be reflected in favorable supervisor and co-worker ratings, or better performance appraisals.

Organ (1988) defined OCB as the total arbitrary behaviors of volunteered workers which are out of in role behaviors which are not considered directly and/or totally in formal reward and punishment system but to promote and motive the employees to facilitate effective functioning of the organization. Furthermore, VanYperen, Van den Berg and Willering (1999) concluded that an organization is not constructed not only formal structure, the informal structure of an organization has more effectiveness on the in role structure and facilitate effective functioning of the organization, and they defined OCB as the total arbitrary behaviors of volunteer component, predictions of accuracy and justice. In another word, as Turnipseed (2002) defined OCB as a behavior beyond to get off punishments or to get rewards which were defined in employment contract. While punishment and reward were system defined in employment contract, OCB is called as pro-social behaviors, the total behaviors which were done by voluntarily and intrinsic motivation to realize organizational goals (George and Brief, 1992). In addition to this, OCB is defined as "good soldier" who helps others voluntarily, open innovation, has pro-social behaviors, away unnecessary conflict and arguing, complete all tasks on time by Smith, Organ and Near (1983), Turnipseed (2002), Bateman and Organ (1983).

The correlation between OCB and job satisfaction was firstly concluded by Organ (1988) and he found out that this correlation was very strong. For that reason, OCB and job satisfaction has meaningful effect on LS and achievement perception. There are many internal and external factors which effect individual's job satisfaction and LS. Besides this there is a strong and linear relation between job satisfaction and LS (Bamundo and Kopelman 1980; Chacko 1983; Wilensky 1960). In addition to this, Blackhurst et al. (1988a, 1988b) concluded that PC has positive effect on LS, it makes LS increased. Besides this, London et al. (1977) found out that there was a positive correlation between job satisfaction and participating in recreational activities. Richard and John (1988) concluded that the individuals who are interested in recreational fisheries has more job satisfaction than the individuals who were not interested in this activity and Groves (1981) defined that participating official recreation increases job satisfaction.

METHODS

The Aim of this study was to examine the effect of participating in official recreational activities on Organizational Commitment (OC) and Professional Commitment (PC), Organizational Citizenship Behavior (OCB), Life Satisfaction (LS) and Achievement Perception (AP) on the example of Antalya Governmental Hospital. This research is restricted by the participants in Antalya Government Hospital.

The Sampling group of this study consists of 45 employees who had participated in official recreational activities between the dates September 2012 / May 2013. All participants joined to outdoor activities, 10 of 45 participants joined to plates, 13 of them to folk dance, 20 of them to music and 8 of them to theatre activities. %93 of the 45 participants answered the questionnaire forms clearly.

To find out the values of variables, at the end of March-2013, it was asked to all participants (n=45) "how you felt at the beginning of the September-2012 and what do you think know?" in the same questionnaire form for all scales and %93 of the participants (n=42) answered clearly. The questionnaire form contains demographical questions and Organizational and Professional Commitments scale which was developed by Meyer et al. (1993), Organizational Citizenship Scale which was developed by Podsakoff et al. (1990), Life Satisfaction Scale which was developed by Diener et al. (1985) and Achievement Scale which was developed by Bilgin and Kaynak (2008). Since, in the process of assessing data the descriptive statistic methods, correlation test and t test have been used and results have been assessed according to significant level 0.05 and 0.01. A five-point Likert scale was used and the range covers (1: definitely no, 5: definitely yes).

Validity of scales: OCB scale (Cronbach's Alpha=0.895), PC scale (Cronbach's Alpha=0.810), OC scale (Cronbach's Alpha=0.897), AP scale (Cronbach's Alpha=0.689) and LS scale (Cronbach's Alpha=0.862). Cronbach's Alpha values of OCB, PC, OC, AP and LS are in the limit of validity.

Assumption of this study: As Cordes and Ibrahim (2003), Karaküçük (2005), Ardahan and Ipeker (2013) declared that in the last three decades, many medium or big size business/organizations in private, public and/or non governmental sector prefer the educational (in-service training) programs by using or including recreational activities especially outdoor recreation, and the demand for this kind of training program is increasing. Recreational education programs also increase personal motivation toward the organization, the work and it establish and repair the organizational communication. As explained above, there are many factors affect individuals' LS, OCB, OC, PC and AP. LS can be affected by organizational and the others factors, but OCB, OC, AP and PC just affected by majority

organizational factors like “general economic and political structure of the government hospital management”, “salary and payment systems”, “persons’ expectation from management”, “organizational motivation factors”, “working hours and conditions”, “official motivational factors”, “managers and their leadership attitudes and behaviors”, “organization design”, “terms of reference”, and “personnel structure and size”. Because of these organizational factors were not changed, control group was not strongly necessary and so it was not allocated in this study. So the changes represent the importance of participating in official recreational activities and the importance of this study.

FINDINGS

Demographic information of participants was given in Table 1. As it seen Table 1, majority of participants is female, has monthly income about 1200 € or below, married, has university degree or higher education level, working as nurse or health officer. They have all preferred trekking activities, and their mean age was about $\bar{X}=38.45\pm 5.347$ and length of employment of participants in this hospital is about $\bar{X}_{\text{year}}=13.60\pm 6.398$ and their employment time in this occupation is about $\bar{X}_{\text{year}}=17.64\pm 6.132$.

Table-1: Demographics Information of Participants

Gender	n	%	Marital Status	n	%
Male	6	14,3	Married	3	78,6
Female	36	85,7	Single	9	21,4
Income (monthly)	n	%	Education Level	n	%
800 € and below	5	11,9	High school and below	1	2,4
801-1200 €	29	69,0	University and high	4	97,6
1201-1600 €	2	4,8	Occupation	n	%
1601-2000 €	2	4,8	Doctor	2	4,8
2001 € and high	4	9,5	Nurse/Healthy Officer	3	85,7
Recreational Activities	n	%	Civil servant and others	4	9,5
Trekking	42	100,0	Total	4	100,0
Plates	6	14,3	Some means of Demographics	Mean	St. Dev.
Turkish Folk Dance	10	23,8	Age	38.45	5.347
Music	3	7,1	Length of employment in this hospital	13.60	6.398
Theatre	1	2,4	Employment time in this occupation	17.64	6.132
Total	42	100,0			

The statistical comparisons of LS, AP, OC, PC and OCB of the participants before and after participating in recreational activities were given in Table 2. As it seen in table, there is statistically meaningful difference between before and after level of participant's LS, AP, PC, OC, OCB level. Participating official recreational activities increase the level of participant's LS, AP, PC, OC and OCB.

Table-2: Organizational Citizenship Behavior, Life Satisfaction, Achievement Perception, Organizational and Professional Commitment Before (BE) and After (AF) Participating in Recreational Activities

OCB, LS, AP, OC and PC	Before Recreational Activities		After Recreational Activities		t
	Mean	St. Dev.	Mean	St. Dev.	
Life Satisfaction	2,98	0,61	3,48	0,57	- 6,959*
Achievement Perception	3,30	0,68	3,74	0,58	- 6,275*
Professional Commitment	3,19	0,57	3,60	0,54	- 15,460*
Emotional commitment to profession	3,50	0,83	3,94	0,66	- 8,798*
Normative commitment to profession	2,72	0,78	3,21	0,87	- 9,600*
Continuous commitment to profession	3,35	0,86	3,66	0,80	- 6,990*
Organizational Commitment	2,69	0,71	3,08	0,66	- 7,487*
Emotional commitment to organization	2,96	0,80	3,27	0,76	- 6,440*
Normative commitment to organization	2,33	0,82	2,79	0,81	- 7,539*
Continuous commitment to organization	2,77	0,96	3,17	0,88	- 4,073*
Organizational Citizenship Behavior	3,74	0,48	4,02	0,43	- 7,933*
Altruism	3,80	0,61	4,04	0,63	- 5,023*
Courtesy	4,11	0,71	4,34	0,61	- 3,535*
Conscientiousness	3,93	0,71	4,21	0,59	- 6,817*
Sportsmanship	3,73	0,36	3,99	0,55	- 2,689*

Civil Virtue	3,12	0,90	3,49	0,75	- 5,244*
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* $p < 0.05$

The correlation of LS and AP with PC, OC and OVB were given in Table 3. It was found statistically meaningful correlations between LS and AP, OC, PC, OCB and AP and OC, PC, OCB before and after participating official recreational activities.

Table-3: Correlation between Life Satisfaction, Achievement Perception and Organizational Citizenship Behavior, Organizational and Professional Commitment Before (BE) and After (AF) Participating in Recreational Activities

	Life Satisfaction		Achievement Perception	
	BE	AF	BE	AF
Life Satisfaction	1		0,487**	0,407*
Achievement Perception	0,487**	0,407*	1	
Professional Commitment	0,364*	0,273*	0,518**	0,516**
Organizational Commitment	0,514**	0,393**	0,530**	0,564**
Organizational Citizenship Behavior	0,359*	0,141*	0,649**	0,609**

* $p < 0.05$, ** $p < 0.01$

CONCLUSION

It was found in many studies that participating in recreational activities (whether official or not, whether free of charge or not) has positive effect on participants physical and mental health, well-being, social relations, job life and LS (Ardahan, 2011a, 2011b, 2012b; Baker and Palmer, 2006; Cordes and Ibrahim, 2003; Kalkan, 2012; Rodriguez et al. 2008; Toros et al. 2010). The conclusions of these studies support the current study's results. In another word, it can be stated that participating official recreational activities increased the person's LS, physical and mental healthy level. Furthermore, participants feel themselves refreshed, rest, ready to long week, make themselves more fighter, goal-focused, make willing to take other's and social responsibilities, increase their problem solving capacity and empathy capacity (Ardahan, 2011b; Cordes and Ibrahim, 2003; Kalkan, 2012). Participating in official recreational activities have positive effects on participant's AP. It can be concluded that increased AP level will have positive effect on participant's family and social life and increase AP level in their job life (Ardahan and Ipeker, 2013; Cordes and Ibrahim, 2003). These conclusions overlap the current study's results.

It was found that as AP increases, OCP increase, too. In another word, when achievement level of a person expand, LS and OCB of a person expand depending on AP. In addition to these, there are statistically meaningful positive correlation between AP and the other four sub factors of OCB, except sportsmanship.

Bateman and Organ (1983), Williams and Andersen (1991), Schappe (1998), VanYperen et al. (1999), Feather and Rauter (2004), Gürbüz and Yüksel (2008) concluded that "to achieve a goal which is defined by self or others", "to present and bring oneself into notice", "to fight with trouble", "to put good show", "to be ready and volunteer to try to cope with a situation or physical, psychological and mental difficulties and barriers", "to do and focus on all these goals without any prize expectation", "to be volunteer to take responsibility, profession and job dedication" have positive effect on OCB and job satisfaction. This conclusion overlaps with the results of current study.

In many researches, it was concluded that, if a person's PC, OC and LS increases, depending on these changes, productivity of that person increases, too (Allen and Meyer, 1990; Aslan, 2008; Çelik, 2007, Meyer and Allen, 1984; Top, 2012). In another word, when employees feel themselves more productive and efficiency, they will be more successful than before. This conclusion overlaps with the statistical positive correlation between AP and PC and OC found in current study. Furthermore, participating in official recreational activities has positive effect on AP. It can be

concluded that when a person's AP level increases PC and OC of this person will increase, too.

Bateman and Organ (1983), Williams and Andersen (1991), Schappe (1998), VanYperen et al. (1999), Feather and Rauter (2004), Gürbüz and Yüksel (2008) concluded that "the perseverance to achieve a goal which is defined by self or others", "the desire to fight with trouble", "to put good show", "to present and bring oneself into notice", "to be ready and volunteer to try to cope with a situation or physical, psychological and mental difficulties and barriers", "to do and focus on all these goals without any prize expectation" have positive affect on PC, OC and AP of a person. In addition to these conclusions, other results of some studies as; the high PC and OC will cause high LS (Blackhurst et al. 1988a, 1988b), participating in official recreation increases employees job satisfaction and LS (Groves, 1981). All these conclusions can be considered together to explain the positive correlation between AP and PC, OC, LS in the current study. In addition to these conclusions, other results of some studies as; the high PC and OC will cause high LS (Blackhurst et al. 1988a, 1988b), official recreation increases employees job satisfaction and LS (Groves, 1981), participating in recreational fishing increases participants' job satisfaction (John, 1988; Ardahan and Turgut, 2013). All these conclusions can be considered together to explain the positive correlation between AP and PC, OC, LS in the current study.

As a result of this study, it can be stated that participating in official recreational activities which were used as an instrument and were organized by an organization (whether free of charge or not) have statistically positive effect on participant's AP, PC, OC, LS and OCB. For that reason, for organizations in private sector, public sector and/or non governmental sector, organizing official recreational activities (whether free of charge or not) which an employee can participate with his family members and/or social friends will effect positively and increase the emotional link and commitment between employee and organization, between employee and profession, between employee and colleague, will strengthen the poor or negative communication and governance in the organization, and also will increase the employee's willingness and readiness to join and to support organizational process.

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Determining The Levels of Cooperation Between The Employees of Directorate of School of Physical Education and Sports (Besyo) and The Department of Health, Culture and Sports (SkSD) Head Office

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ABSTRACT

The purpose of this survey is to determine the level of the interoperability of the employees working at the Directorate of School of Physical Education and Sports (BESYO) and the Head Office of Health, Culture and Sports Department (SKSD) in the sports organizations. The population of the study conducted by using a screening model was consisted of 263 personnel working in BESYO Directorate and the Head Office of SKSD. In the study have been used descriptive statistics, crosstabs and the kaykar test. As a result of the survey, it was determined that the participation was more important than the success to be brought by the sporting events of the participants in the sample, that the students participating in the discipline should be consisted of the BESYO undergraduates, and that awards should be given to the successful teams and coaches, that the status of the training staff not taking duty in the sports disciplines due to discontinuation of course fees was agreed as fair by the BESYO and SKSD employees. However, it was found out that the BESYO (except the Manager of BESYO) and the SKSD employees had separate ideas concerning the authority to be represented in the international competitions, the use and the control of the facilities, and that the best training for any discipline could only be given by its own units.

Keywords: Directorate of Health, Culture and Sports Department (SKSD) Head Office, Directorate of School of Physical Education and Sports (BESYO), Management and Coordination, Sports management.

INTRODUCTION

Management is managing of an organization by the managers in accordance with the employees and the organizational structure as indexed to the structure in an organization. In our days there are many articles and publications on field management and workplace managements related to many fields that have been published and are being published. even though there are still various assumptions regarding the administrative functions of many workplaces, the educators are not able to precisely answer the question of "how should the ideal workplace management be?" and it is seen that they even continually have been generating new ideas about an ideal administration. This is because the management issue continuously renews itself according to the age. And this leads to the testing of new management formulas. Management in this sense, besides organizing, provides all kinds of administrative activities that will ensure the organization's functioning and the resources be brought together, ensuring of the coordination, and the methods to be followed up and the controls (Gözübüyük, 1993).

In our days, there is a need for a management center in order to increase the efficiency of the employees and the workplace in the social work fields or at the workplaces employing several persons. Such an administrative center is also the the brain of the workplace and a place involved in generating solutions in administrative matters. Management in this context is being characterized as a process of operationalizing the manpower and other resources brought together to perform the works intended to actualize the pre-determined objectives in an organization established to meet a part of the social needs by organizing and coordinating them (Başaran, 1984).

Any management is being founded to produce the goods, services, any idea that the community needs. And the function of any management in the society is to meet one part of the needs of the society. The importance of any management created in the society, is in proportion with the needs of the society to the products or the services it produces. The purpose of any management is to produce certain products or services needed by the society (Doğar,

1997). There are various management patterns in the literature. The sport management is one of these patterns. The sports management is to implement the specified policies and the decisions taken in order to have the sportive actions achieve the determined objectives by providing human and material resources and to effectively use them. In addition, the sporting services are being defined as ensuring the use of the available human and material resources in the most effective and efficient way towards these goals to achieve the pre-determined targets. As it can be seen from the definition, the sport management is obliged to actualize the general and the specific objectives of the sporting actions and the services specified by the public administration and to implement the sports policy of the state (Doğar, 1997). In addition, it is being defined as the process of coordination needed to properly perform the activities planned by the managers, working together, acting together, trying to be successful accompanied by a trainer or a coach under one roof. Coordination, at the same time, is to unite people, to adjust them in terms of time, to have the activities come one after the other in order to achieve the common purpose and to have them completed each other by uniting and bunching up (Ertürk, 1998).

According to Fayol, the coordination is a process of harmonization of all activities of an organization in order to facilitate the work and to ensure the success (Özalp, 1995). It is being pointed out that the coordination is a function performing the necessary cooperation in the most suitable environment, time, with personnel and materials by combining the efforts of people in a way to come in succession and ensuring the integration by uniting together in order to reach a common goal and to perform any work more effectively (Dinçer & Fidan, 1996). Every part of the organization performed in this context should be organized in a way to actualize a common goal or purpose and to provide a full coordination. So, first the main purpose of the organization must be determined, then the purposes of the sections and subsections must be regulated in a manner dependant on each other (Ülgen, 1993).

In the light of the above- mentioned information, the necessity of management and coordination required to be used by the units of the sports organizations becomes obvious. In this context of the survey, answers will be sought to questions relating to identifying of the lack of management, organization and coordination, experienced by the employees of the Directorate of BESYO/PES and the Presidency of SKSD in the sporting events held in their universities.

EQUIPMENT AND METHODS

The aim of the study is to determine the level of business cooperation in sports organizations of the employees of the Directorate of Physical Education and Sports (PES) and the Department of Health, Culture and Sports (SKSD). The survey was conducted by using general screening model.

The general screening model is a screening method performed on the entire population or on the sample to be taken from it with the purpose of reaching a general judgment about the population in a population, composed of numerous elements (Karasar, 1984).

The population of the study is composed of the staff employed in the School of Physical Education and Sports and in the Department of Health, Culture and Sports.

And the sampling of the survey was consisted of employees of BESYO Directorate of 18 universities (PES Director, PES Head of Department, PES Academicians) and the employees of SKSD Department (SKSD President, Sports Branch Manager, Academicians, Trainers, Contractual Coaches of SKSD Department), all randomly selected. A questionnaires was used as a data collection tool of the survey. A literature scanning was carried out required for the mentioned questionnaire form by the surveyor in order to acquire the data and the problems have been identified through various interviews done with the employees working in these units and taking the specialists' opinions (three faculty members), as a seven-item questionnaire was prepared for the purpose and was applied to the employees working in the relevant sections. For the analysis of the data were used descriptive statistics, frequency, percentage, degree of freedom and kaykar test. The statistical significance degree was accepted as alpha (α) and the error level as $p < 0.05$. The results obtained from the distribution were tabulated and the findings have been interpreted and the necessary solutions were recommended.

FINDINGS AND DISCUSSION

In this chapter are given the data obtained from the employees of PES Directorate and the Department of SKSD who participated to the survey and the statistical findings related to these data.

Table 1. Definitive findings related to in which unit should the representative authority be in the national and international competitions

The representative authority in the national and the international sports organizations should be

completely be in the Presidency of SKSD

Occupation Component	I agree		I'm Indecisive		I disagree		Total	
	N	%	N	%	N	%	N	%
Chairman of SKSD	8	44.4	2	11.1	8	44.4	18	100
Sports Branch Manager	11	52.4	6	28.6	4	19.0	21	100
Academician in charge of SKSD Pres.	6	50.0	4	33.3	2	16.7	12	100
Coaches	16	57.1	10	35.7	2	7.1	28	100
Contractual Trainer	6	50	2	16.7	4	33.3	12	100
BESYO Director	12	80	1	6.1	2	13.3	15	100
BESYO Head of Department	10	34.5	-	-	19	64.5	29	100
BESYO Academicians	32	25.0	7	5.5	89	69.5	128	100
Total	101	38.4	32	12.2	130	49.4	263	100

$\chi^2 = 78.935$ $sd = 14$ $p = .000$ ($p < .05$)

It was understood that to the question whether the representation authority be vested in the Chairmanship of SKSD in the international competitions or not, the employees of Chairmanship of SKSD and the BESYO Directors have given the answer that this authority should be vested in the SKSD Presidency, whereas the BESYO Academicians wanted that this authority be vested in their own units. It was observed that there was a statistically significant difference between the professional components of the participants and the representation authority being fully vested in the SKSD Department in the national and international sports organizations ($p < .05$). It is seen that the leisure time activities and training which support the social changes and the development in Turkey and is effective in terms of ensuring and developing the young people's persona, are supported in corporate fields as well (Kilbaş, 2001). In this context, making sports organizations in the universities and the representative authority are included in the mission of the Presidency of SKSD (SKSD, 2014). Mirzeoğlu (1995), in his study, states that the promotion of the studies in this field in cooperation with international and domestic organizations and ensuring the participation of the students in the competition and matches representing the university, are also among the duties of the Presidency of SKSD. However, the help of the BESYO Directorate employees and the experts, who are closely related to the subject, must be asked for in order to sturdily carry out the activities while conducting organizations.

Table 2. Definitive findings related to in which unit should the usage and the control of the facilities be

The usage and the control of the university facilities must be in SKSD Presidency.

Occupation Component	I agree		I'm Indecisive		I disagree		Total	
	N	%	N	%	N	%	N	%
SKSD Chairman	13	72.2	2	11.1	3	16.7	18	100
Sports Branch Manager	19	90.5	-	-	2	9.5	21	100

Academician in charge of SKSD Pres.	6	50.0	-	-	6	50.0	12	100
Trainers	26	92.9	-	-	2	7.1	28	100
Contractual Coaches	8	66.7	2	16.7	2	16.7	12	100
BESYO Director	12	80.0	2	13.3	1	6.1	15	100
BESYO Head of Department	10	34.5	2	6.9	17	58.6	29	100
BESYO Academicians	35	27.3	12	9.4	81	63.3	128	100
Total	129	49.0	20	7.6	114	43.3	263	100
$\chi^2 = 81.267$ $sd = 14$ $p = .000 (p < .05)$								

Participants in the sample point out that the use and the control of the facilities should be in the Presidency of SKSD. On the other hand, it is understood that the BESYO academicians want to have a say in the use of the facilities as well. A statistically significant difference was detected between the occupational components of the participants and the use and the control of the university facilities by the Presidency of SKSD ($p < .05$). In this context, at the point of joint use of facilities, both of the units should establish a joint commission and plan the inside and the outside sports activities of the university. The common purpose with this regard should be to use the available facilities in the best way and to provide the best way the infrastructure facilities to the athlete students at the university. It is being stated that the free time sports programs prepared by the universities and the related infrastructure facilities thereof, increase the communication of the young people with each others and this type of activities add a great value to their preparation for their different living areas (Balci and Ilhan, 2006). So it can be said that for this purpose, the follow-up work in the technical sense should be done by the technical staff of the SKSD Presidency. According to Mirzeoğlu (1995), it is among the tasks of SKSD to ensure the use of all the university's sports facilities and materials and their management from a central location and that the employees work in a planned manner. In this context, the correspondence department should follow up the organization and fulfill its duty in the best way (Eroglu, 2001). The planning of the facilities should be in a manner to give opportunity for the mass sports activities without disrupting the education and training. With this aspect, the efficient use of sports facilities is important in terms of upbringing athletes, as well as enhancing efficiency in production of human resources (Nacar, 1997). It is understood that Ağaoğlu and Eker (2006) and Hacıcaferoğlu et al., (2012) in their survey, stated that the participants want the management of the facilities at the universities be vested in the Presidency of SKSD.

Table 3. Definitive findings on the purpose of the national and international competitions

Occupation Component	I agree		I'm Indecisive		I disagree		Total	
	N	%	N	%	N	%	N	%
	SKSD Chairman	13	72.2	5	27.8	-	-	18
Sports Branch Manager	8	38.1	4	19.0	9	42.9	21	100
Academician in charge of SKSD Pres.	8	66.7	2	16.7	2	16.7	12	100
Trainers	16	57.1	8	28.6	4	14.3	28	100
Contractual Coaches	8	66.7	2	16.7	2	16.7	12	100
BESYO Director		80.0	1	6.7	2	13.3	15	100

	2							
BESYO Head of Department	0	69.0	2	6.9	7	24.1	29	100
BESYO Akademicians	3	57.0	24	18.8	31	24.2	128	100
Total	58	60.1	8	18.3	57	21.7	263	100
$\chi^2 = 20.552$ sd= 14 p= .114 (p>.05)								

60.1% of the participants stated that what was important, was to ensure the participation in the national and international competitions. It was detected that there was not any significant difference between the occupation components of the participants in the sampling and the situation of ensuring aim of participation the national and international competitions (p>.05).

Participation in all kinds of national and international organizations to be held, should come before the sportive success. For the sports competitions performed under the scope of cultural and social activities by the students within the university, have a great importance in respect of the students' social development and the development of psycho- motor areas and even if the success is being required, the participants agree that the participation is more important.

The sports activities must provide support to the students' social and physical values in the formation of their own philosophy, must include efforts influencing lifestyles within the people's fields of occupation, must help them to be individuals having a place in the community and must beautify the coexisting life (Karaküçük, 1993). In this context Mirzeoğlu (1995) states in his study that organizing group work and matches, establishing sporting associations and making organizations supporting the participation to these activities, are among the tasks of the Presidency of SKSD.

Table 4. Descriptive findings related to students to participate in the sports teams.

It is an advantage that the students to participate to the sports teams be consisted of BESYO students.

Occupation Component	I agree		I'm Indecisive		I disagree		Total	
	N	%	N	%	N	%	N	%
SKSD Chairman	15	83.3	3	16.7	-	-	18	100
Sports Branch Manager	11	61.1	3	16.7	4	22.2	18	100
Academician in charge of SKSD Pres.	6	50.0	-	-	6	50.0	12	100
Trainers	15	53.6	2	7.1	11	39.3	28	100
Contractual Coaches	6	50.0	-	-	6	50.0	12	100
BESYO Director	10	55.6	-	-	8	44.4	18	100
BESYO Head of Department	26	89.7	1	3.4	2	6.9	29	100
BESYO Akademicians	100	78.1	12	9.4	16	12.5	128	100
Total	189	71.9	21	8.0	53	20.2	263	100
$\chi^2 = 44.876$ sd= 14 p= .000 (p<.05)								

It was understood that 71.9% of the participants stated that it was an advantage that the teams of athlete students be consisted of BESYO students. It was found that there was a statistically significant difference between the occupation components and the situation of having BESYO students in the sports teams being an advantage ($p < .05$). It is possible to evaluate having the athletes be students of BESYO Directorate participating in the team sports or individual disciplines in two aspects. Having employed the students of BESYO Directorate in the discipline field and become specialized in their own sports fields may positively contribute to the discipline. However, there might be missing athletes in the teams to participate in the sports activities, and it can be preferred to provide athletes playing for the other teams in order to overcome this trouble. And this has negatively impacts on the performance of the teams. To overcome this problem, the students studying in other faculties of the university who dealt with sports can be reached out and they can be offered opportunities for training. When considering that the announcements to be made in order to reach out these students are insufficient in fact, then physical education courses should be opened in the other departments of the faculty and thus many athlete students can be reached out. And in such a case, it is believed that the success rate will rise both in the college sports and in the international competitions.

Table 5. Descriptive findings related to giving awards to the successful teams and coaches

Occupation Component	Successful Teams and Coaches should be given the award.							
	I agree		I'm Indecisive		I disagree		Total	
	N	%	N	%	N	%	N	%
SKSD Chairman	13	72.2	4	22.2	1	5.6	18	100
Sports Branch Manager	14	77.8	-	-	4	22.2	18	100
Academician in charge of SKSD Pres.	12	100	-	-	-	-	12	100
Trainers	21	75.0	3	10.7	4	4.3	28	100
Contractual Coaches	8	66.7	2	16.7	2	16.7	12	100
BESYO Director	15	83.3	1	5.6	2	11.1	18	100
BESYO Department Head	27	93.1	-	-	2	6.9	29	100
BESYO Academicians	104	81.3	10	7.8	14	10.9	128	100
Total	214	81.4	20	7.6	29	11.0	263	100
$\chi^2 = 17.910$ sd= 14 p= .211 ($p > .05$)								

It was found out that the participants have given their support by giving the answer of "I agree" in the rate of 81.4% to the question that the successful teams and coaches must be awarded. This case can be interpreted in a way that the motivation of the students and coaches can be increased and their success rates could rise by awards. It was found that there wasn't any statistically significant difference between the occupation components and the situation of granting awards to successful teams and coaches ($p > .05$). As the teams may be granted awards in the material sense, as well as the successful athletes may be awarded scholarships in the universities. In addition, they can also make benefits from the opportunities of the SKSD Presidency. Events can be arranged for these athletes and coaches in the year-end activities of the universities and the athletes can be honored by promotions. It can be said that this is important for athlete students and coaches when coordination, motivation and success are taken into consideration. In this context, the administrators holding the position of sports managers should be able to set in motion all the elements in order to realize the goals of their organization, should regulate and develop the human relations inside and outside of the organization, and should ask for help of all the managers where necessary for motivation (Yetim, 1996).

Table 6. Descriptive findings related to the situation of not taking enough tasks.

Academicians can not take enough tasks due to their concern of course fees.

Occupation Component	I agree		I'm Indecisive		I disagree		Total	
	N	%	N	%	N	%	N	
Chairman of SKSD	9	50.0	4	22.2	5	27.8	18	100
Sports Branch Manager	10	55.6	3	16.7	5	27.8	18	100
Academician in charge of SKSD Pres.	6	50.0	4	33.3	2	16.7	12	100
Coaches	13	46.4	7	25.0	8	28.6	28	100
Contractual Trainer	2	16.7	6	50.0	4	33.3	12	100
BESYO Director	6	33.3	7	38.9	5	27.8	18	100
BESYO Head of Department	13	44.8	5	17.2	11	37.9	29	100
BESYO Academicians	60	46.9	21	16.4	47	36.7	128	100
Total	119	45.2	57	1.7	87	33.1	263	100

$\chi^2 = 15.627$ $sd = 14$ $p = .337$ ($p > .05$)

45.2% of the participants state that the teaching staff cannot take enough tasks in the sporting events due to concerns regarding the course fees. It was found that there wasn't any statistically significant difference between the occupation components and the situation of the teaching staff not been able to take enough tasks in the sporting events due to concerns regarding the course fees ($p > .05$). It can be said that it is necessary that the administrators take measures to solve the problem of course fees which are being cut because the teaching staff who participate to the competitions fail to attend the classes. It can be said that meeting the losses of the teaching staff in material sense, will cause the academicians tend more to doing sports disciplines.

Table 7. Descriptive findings related to the trainers of which units should give the sports disciplines

Having the trainers of the SKSD Presidency trained any discipline, would be effective that this discipline be understood better and bring success.

Occupation Component	I agree		I'm Indecisive		I disagree		Total	
	N	%	N	%	N	%	N	
Chairman of SKSD	7	38.9	4	22.2	7	38.9	18	100
Sports Branch Manager	9	50.0	3	16.7	6	33.3	18	100
Academician in charge of SKSD Pres.	6	50.0	2	16.7	4	33.3	12	100
Coaches	15	53.6	5	17.9	8	28.6	28	100
Contractual Trainer	8	66.7	2	16.7	2	16.7	12	100
BESYO Director	10	55.6	2	11.1	6	33.3	18	100

BESYO Head of Department	7	24.1	3	10.3	19	65.5	29	100
BESYO Academicians	24	18.8	26	20.3	78	60.9	128	100
Total	86	32.7	47	17.9	130	49.4	263	100
$\chi^2 = 37.034$ $sd = 14$ $p = .001$ ($p < .05$)								

The employees of SKSD Presidency and the BESYO Director consider it appropriate that the training of any discipline be given by the Trainers taken office in the SKSD Presidency. However, it was identified that the BESYO Academicians did not approve this case. It was found that there was a statistically significant difference between the occupation components of the participants and the situation of having any discipline be better understood and bring success by being trained by the trainers taken office in the SKSD Presidency ($p < .05$). In order to be successful in a competition, giving a training by the teaching staff of the BESYO Directorate and the SKSD who are good at their branches and the trainers, may ensure the enhancing of the performance. It can be said that it is required that the knowledge and the techniques related to the branches of the persons to give the training must be scrutinized and this discipline be transferred in the best way to students. In addition, it is understood that the managers of BESYO took a stance in favor of the SKSD presidency regarding the authority of representation in international competitions, the use and the control of the facilities and the training of any discipline to be provided by its own units in the best way. This situation can be interpreted that the teaching staff does not want to participate in activities that may disrupt the courses during this period, because sports competitions are being usually held during the educational period.

RESULTS AND RECOMMENDATIONS

As a conclusion of this survey carried out with the purpose to determine the levels of the interoperability of the employees of the Directorate of the School of Physical Education and Sports (BESYO/PES) and the Department of Health, Culture and Sports (SKSD) in the sports organizations, it was found out that the employees of BESYO and SKSD agreed that the participation was more important than the success to be achieved in the sports events by the participants of the sampling, that the students participating to the discipline should be consisted of BESYO students, that the successful teams and trainers should be awarded, and the situation of not having the teaching staff take part in the sports disciplines due to cutting their course fees. However, it was detected that the BESYO (except the BESYO Director) and the employees of SKSD had different opinions about the representative authority in the international competitions, the use and the control of the facilities, and that the training of any discipline can be provided in the best way by their own units. This situation can be interpreted that there is a disagreement between the employees of the department heads of BESYO and the SKSD presidency in terms of the authority and both of the departments want to remove themselves to the forefront in order to be successful. It can be said that university administrators should make and implement programs providing assessment of the sporting activities and the social and the cultural activities to the students in their spare times except the their formal trends and contribute to their socialization by engaging the students in these activities. According to Tuncay, when young people are excluded from the socialization process, they can be captured by various diseases of the age such as be away from each others and not coalescence, helpless, pushed into psychological problems, unkind, aggressive, violent and brutal instead of having high ideals (Tuncay, 2000). The students can relax spiritually and physically in their free time outside of the daily activities, homeworks and the similar works by doing and participating into life clinging, relaxing, entertaining, busying events and actions (Bayer, 1973). It is being said that the reason of the revolt of the students in the universities put on a scene between the years of 1960-1980, was because the phonetic arts, the plastic arts and the departments of physical education failed to get interested enough in all of the students and as the result of this insufficient interest and because the students were not able to find pursuits that would keep them busy, they got involved in a variety of student events (Gökçe, 1983). Eventually, both BESYO and SKSD should find pursuits that will discharge the energy of the students and will engage and entertain them. And meanwhile, they should ensure the participation of the students to national and international organizations by organizing various courses.

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Muscular Adaptations to Depth jump Plyometric Training: Comparison of Sand vs. Land Surface

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ABSTRACT

The purpose of this investigation was to compare the effects of sand and land depth jump plyometric training on muscular performance in men. Fourteen healthy men were randomly assigned to one of two training groups: (a) Sand Depth Jump training (SDJ; N = 7) or (b) Land Depth Jump training (LDJ; N = 7). Training was performed for 6 weeks and consisted of 5 sets of 20 repetitions of DJ training on 20-cm dry sand and or 3cm hard court surface for 2 days per week. Assessments for Vertical Jump Test (VJT), Standing Long Jump Test (SLJT), 20- and 40-m sprint, T-test (TT) and one repetition maximum leg press ($1RM_{LP}$) were performed before and following the 6-week training period. Significant improvements in VJT (4 (effect size [ES]=0.63 vs. 5.4 (ES=0.85) cm), SLJT (8.3 (ES=0.3) vs. 12.7 (ES=0.57) cm), and $1RM_{LP}$ (23.5 (ES=0.56) vs. 15.3 (ES=0.49) kg) were seen for both the groups. Likewise, significant decreases were observed for both SDJ and LDJ groups in 20- (0.3 (ES=0.72) vs. 0.4 (ES=1.98) sec) and 40-m sprint times (0.2 (ES=0.4) vs. 0.5 (ES=0.71) sec), and TT (0.5 (ES=0.62) vs. 0.9 (ES=0.57) sec). In conclusion, the data did not show significant differences between groups, but the level of ES was higher in sprint and jump tests for the LDJ and agility and strength for the SDJ. It is recommend that athletes used LDJ training for enhancing sprint and jump and SDJ training for improving agility and strength.

Keywords: Stretch-Shortening Cycle; Sand; Jumping Ability; Performance

INTRODUCTION

Plyometric exercises involve the training of the stretch-shortening cycle (SSC) phenomena and have been shown to be an effective way to achieve the highest power (Chu, 1998; Arazi et al., 2012). Plyometrics are used to improve lower body power and increase explosiveness by training the muscle to do more work in a shorter period of time. Plyometric training has been shown to an effective method for the improvement of sprinting and jumping ability (Arazi and Asadi, 2011), strength (Arazi and Asadi, 2011), and it has also been reported to improve running economy (Turner et al., 2003) and agility (Asadi, 2012; Miller et al., 2006).

However plyometric exercises include variations of jumping, bounding and hopping drills, true plyometric training requires the rapid eccentric muscle action and maximal effort of the athletes during the concentric muscle action. This type of plyometric training can be formed of depth jump (Arazi et al., 2012; Saez Saez de Villarreal et al., 2009). Drop or depth jump (DJ) is a plyometric or SSC exercise and has been shown to be effective for the improvement of jumping ability and muscular performance (Asadi, 2012; Thomas et al., 2009; Holcomb et al., 1996). Commonly plyometric training such as DJ is performed on firm surface. Although performing DJs on firm surface can stimulate SSC greater than other surfaces, this type of surface induce muscle soreness and damage greater than other surfaces (i.e., sand, grass and mat) (Impellizzeri et al., 2008; Miyama and Nosaka, 2004). Impellizzeri and coworkers (2008) compared the effects of 4-week plyometric training on sand vs. grass surface coupled with soccer training, aerobic interval training and technical-tactical training on muscle soreness and physical performance in soccer players, and reported plyometric training on sand improved jumping and sprinting ability and induced less muscle soreness.

However, less muscle soreness and muscle damage were seen by plyometrics on sand (Impellizzeri et al., 2008; Miyama and Nosaka, 2004), there were differences between sand and firm surfaces. Performing plyometrics on sand causes a lower rephrase of elastic energy and energy loss due to feet slipping during the concentric action (Giatsis et al., 2004). Also, it is likely that much of the energy produced by the muscles will not be returned (i.e., energy will be absorbed), resulting decrease in muscular performance on the sand, when compared to hard surface (Maffiuletti et al., 2002; Miyama and Nosaka, 2004; Giatsis et al., 2004).

Although a few studies have explored the influence of sand surface on muscular performance (Miyama and

Nosaka, 2004; Giatsis et al., 2004; Impellizzeri et al., 2008), no study has directly compared sand and firm conditions in relation to muscular performance following 6 weeks DJ training. It is important to understand the differences in response to plyometric training between sand and firm surfaces, since many assumptions have been made from studies using different surfaces. Therefore, the purpose of this study was to compare the effects of 6-week DJ plyometric training on sand and land surfaces on muscular performance in healthy men. In this study we had two purposes: (1) examine the effects of 6 weeks DJ plyometric training on sand on sprinting and jumping ability, agility and strength; (2) to compare possible changes in muscular performance induced by DJ plyometric training between sand and land surfaces.

MATERIAL AND METHODS

Participants

The participants were 14 healthy men who were familiar with plyometric exercise and training volunteered to participate in this study. Subjects were randomly assigned to one of two training groups: (a) Sand Depth Jump training (SDJ; N = 7, age 20.7 ± 0.5 y, height 175.5 ± 3.2 cm, body mass 72.3 ± 6.1 kg) or (b) Land Depth Jump training (LDJ; N = 7, age 20.5 ± 0.3 y, height 176.3 ± 2.1 cm, body mass 71.2 ± 5.3 kg;). A priori calculations of statistical power indicated that this sample size was appropriate to satisfy power at or above 80% (Faul et al., 2007). Subjects had no medical or orthopedic problems that compromised their participation in this study. Each subject was informed of the risks and benefits of the study and subsequently signed an informed consent form in accordance with the guidelines of the university's Institutional Review Board and according to the Declaration of Helsinki.

Measures

The participant underwent two days of testing, namely one pre- and one post-test day respectively. A week before the official testing week, each subject was familiarised with the testing procedures and plyometric training programs, and the demographic data were gathered and anthropometric measurements (body mass and stature) taken. The baseline testing of agility (T-test), jumping ability (Vertical Jump Test and Standing Long Jump Test) 20- and 40-m sprint and one repetition maximum leg press (1RMLP) were completed one week before the beginning of the different plyometric training protocols. Post-testing was performed a week after the training period. The subjects were tested at the exact same time of day (post-test day) and same day of the week as the pre-test day to minimize the effect of circadian variations in the test results. All subjects had to continue with the normal daily life activity. Subjects had not participated in any type of plyometric training programs for at least six months prior to the start of the study and were not permitted to participate in any resistance training programs during the time period of the study. Test-retest intraclass reliabilities were $R \geq 0.95$ for all tests.

The following laboratory tests were conducted:

Vertical Jump Test

The VJT was executed according to the method of Holcomb et al. (1996). The VJT was performed using the Vertec device (Power Systems, Knoxville, Tennessee, TN 22550, USA). Before commencement of the testing procedure, the height of vertical column was adjusted so that the subject could touch the movable vanes to register a standing touch height. Each subject stood with the dominant arm's shoulder and the dominant leg's foot under the coloured movable vanes. Keeping the heels on the floor, the subject then reached upwards as high as possible. The distance was recorded as the standing touch height to the nearest 1 cm. An arm swing and counter movement were not used to jump as high as possible and to tap the highest possible vane. This distance was recorded and noted as the jumping distance. The difference between the standing touch height and jumping distance was calculated and recorded to the nearest 1 cm. The subjects performed a minimum of three trials with a 30 sec rest period between each trial. The better of the three trials was then recorded.

Standing Long Jump Test

The SLJT was executed according to the method of Arazi et al. (2012). The SLJT was measured via a tape measure. Subjects were required to stand with their toes behind the zero point of the tape measure prior to jumping. Subjects were not allowed a preparatory step of any kind but arm swings were allowed at the discretion of the subject. Distance was determined measuring the point at which the heel of the trial leg touched the ground. Each subject performed three trials with a 30 sec rest in between each trial. The best jump of the three was used for analysis.

Sprint

The 20- and 40-m sprint was measured according to the method of Rimmer and Sleveret (2000). Sprints were performed on an indoor track for 40 m, with the timing device situated in 2 locations to determine 20- and 40-m sprint times (JBL Systems, Oslo, Norway). Each subject was given 2 maximal trials. Three minutes of rest was permitted

between trials and the fastest time was recorded for analysis.

T-test

Subjects' agility was evaluated by using the TT according to the method of Miller et al. (2006). The subjects were instructed to sprint from a standing starting position to a cone 10 m away, followed by a side-shuffle left to a cone 5 m away. After touching the cone the subjects side-shuffled to the cone 10 m away and then side-shuffled back to the middle cone. The test was concluded by back-peddaling to the starting line. The test score was recorded as the best time of three trials. A 3-minute rest period was allowed between each trial. Subjects were disqualified if they failed to touch the base of any cone, crossed the one foot in front of the other or failed to face forward for the entire test.

1RM_{LP}

A bilateral leg press (Body Solid, GLPH 1100, USA) test was selected to provide data on maximal dynamic strength through the full range of motion of the muscles involved. The procedure used for assessing 1RM was described by Kraemer and Fry (1995). The participant was in a seated position so that the knee angle was 90° and the weight sliding obliquely at 45°. On command, the participants performed a concentric leg extension (as fast as possible) starting from the flexed position to reach the full extension against the resistance determined by the weight.

The participants performed a warm-up set of 8-10 repetitions at a light weight (approximately 50% of 1RM). A second warm-up consisting of a set 3-5 repetitions with moderate weight (approximately 75% of 1RM), and third warm-up including 1-3 repetitions with a heavy weight (approximately 90% of 1RM) followed. After the warm-up, the participants performed 1RM strength exercises by enhancing the load during consecutive trials until the participants were unable to properly perform a proper lift, complete range of motion and correct technique. Three five-minute rests were provided between the attempts for each participant. The 1RM_{LP} were obtained within 3-5 sets to avoid excessive fatigue.

Procedures

This study was designed to examine the effects of depth jump training on sand vs. land surface in healthy men. Subjects performed depth jump training either sand or land surface for 6 weeks. Subjects in both groups were instructed on proper technique of training and testing equipment one week prior to data collection. Participants subsequently underwent 6 weeks of training and were tested pre-and post-training for changes in muscle strength, agility, jumping ability and sprinting ability. This design enabled us to examine the effects of plyometric training on sand vs. land surface on muscular performance.

Plyometric Training Program

The plyometric training programs included twice weekly (on Sunday and Wednesday) for 6 weeks. The 6-week training duration was chosen because it is well known that neural and muscular adaptation can occur within this time frame following power training (Asadi, 2012; Miller et al., 2006; Thomas et al., 2009). Each training session lasted 35-min, including 10-min warm-up (e.g., jogging, stretching and ballistic exercises), 20-min training (DJ training on sand or land surface), and 5-min cool-down (e.g., jogging and stretching exercises). Subjects performed 5 sets of 20 repetitions (Asadi, 2012; Miyama and Nosaka, 2004) of DJ with a 5-second interval between jumps. A 2-min and 72-hour rest period was given between sets and training sessions, respectively. Subjects performed DJ onto a 0.2-m-deep dry sand surface and or 3cm hard court surface (Impellizzeri et al., 2008). The SDJ and LDJ subjects began by standing on a 45-cm plyometric box and were instructed to lead with 1 foot as they stepped down from the box and land with 2 feet on the ground. Instantly upon ground contact, subjects were instructed to "explode" off the ground by jumping as quickly and as high as possible. All training was supervised by certified instructors. Adherence to training was 100%, as each subject completed 12 workouts. Missed workouts were made up during a scheduled rest day.

Statistical Analysis

All data are presented as mean \pm SD. A two-way analysis of variance with repeated measures was used to determine significant differences among groups. A criterion α level of $P \leq 0.05$ was used to determine statistical significance. All statistical analyses were performed through the use of a statistical software package (SPSS®, Version 16.0, SPSS., Chicago, IL). The calculation of effect size (the difference between pretest and posttest scores divided by the pretest standard deviation) was used to examine the magnitude of any treatment effect.

Results

Changes in VJT and SLJT are presented in Figure 1. VJT increased significantly in SDJ (8%, $P=0.01$, $ES=0.63$) and LDJ (12%, $P=0.001$, $ES=0.85$), without differences between groups. Moreover, SLJT increased significantly in SDJ (4%, $P=0.05$, $ES=0.3$) and LDJ (6%, $P=0.009$, $ES=0.57$), with no differences between them.

Sprinting performance results are presented in Figure 1. Significant decreases in 20-, and 40-m sprint times were observed in SDJ (9, $P=0.05$, $ES=0.72$ and 4%, $P=0.05$, $ES=0.4$) and LDJ (8, $P=0.008$, $ES=1.95$ and 12%, $P=0.01$, $ES=0.71$) post-training, respectively. However, no significant differences were seen between groups at post-training.

Agility TT performance data are presented in Figure 1. Both groups demonstrated significant improvements in TT post-training (SDJ; 5%, $P=0.009$, $ES=0.62$ and LDJ; 8%, $P=0.05$, $ES=0.57$), with no difference observed between groups. In addition, $1RM_{LP}$ (13, $P=0.001$, $ES=0.56$ and 10%, $P=0.002$, $ES=0.49$ in SDJ and LDJ, respectively) increased significantly for both the groups, without differences between groups (Figure 1).

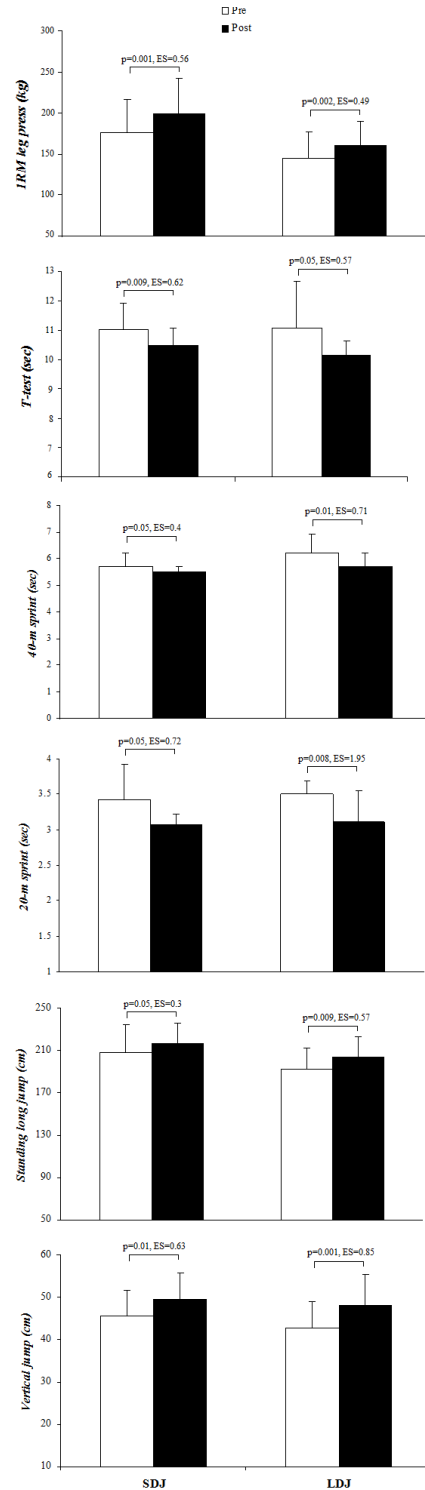


Figure 1. Significant changes in vertical jump and standing long jump, 20- and 40-m sprint time, agility T-test and $1RM_{LP}$ at post training compared with pre training values. Values are mean \pm SD. SDJ: Sand Depth Jump; LDJ: Land Depth Jump.

DISCUSSION AND CONCLUSION

The study succeeded in showing that sand and land based DJ training programs of a six-week duration had a significant training effect with regard to all the measured jumping ability, agility, strength and speed values from pre- to post-training. In spite of the favorable results with regard to the training affect that each of the experimental groups (SDJ and LDJ) experienced, the SDJ was the group that had achieved better pre- and post-test training differences in 1RM_{LP}. Also, the LDJ increased better pre- and post-training differences in other variables.

To the best of our knowledge, no other studies have been conducted to compare the effects of sand and land based plyometric training program on jumping ability, agility, strength and speed, which made it difficult to compare the results of this study to other studies. However, one study has compared the benefits of sand based plyometric programs to those of grass based plyometric training programs in soccer players (Impellizzeri et al., 2008). Overall, those study seem to suggest that sand and grass based plyometric training programs of 4-week have similar effects with regard to changes in jumping and sprint performance, which is consistent with the findings of this study.

Similar to the results of the current study, a large number of studies reported a significant training effect for muscular performance from pre- to post-training in land plyometric training programs (Arazi and Asadi, 2011; Asadi, 2012; Saez Saez de Villarreal et al., 2008; 2009; Miller et al., 2006; Impellizzeri et al., 2008; Thomas et al., 2009). In this study we found significant main effect of plyometric training on sand and land surface in VJT and SLJT, whereas no significant differences between groups were seen. The results of this study are supported with previous studies in the literature.

Although several authors reported significant improvements in VJT and SLJT using plyometric training in male (Arazi et al., 2012; Markovic et al., 2007), there are a few studies about the sand vs. land plyometric training and there is still a discrepancy about the factors influencing these improvements. Many researchers suggested that VJT and SLJT gains after plyometric training are attributed to a neural adaptation located in the nervous system rather than to morphologic changes (Maffiuletti et al., 2002; Tourmi et al., 2004; Markovic and Mikulic, 2010; Potteiger et al., 1999). According to these authors, neuromuscular factors such as increasing the degree of muscular coordination and maximizing the ability to use the muscle's SSC appear to be more important than changes in fiber size. In addition, previous studies have indicated that neuromuscular adaptations such as increased motor unit functioning, increased inhibition of antagonist muscles as well as activation and cocontraction of synergistic muscles may account for the improvement of VJT and SLJT (Potteiger et al., 1999; Cronin et al., 2002; Thomas et al., 2009).

In this study, we found significant improvement in 20 and 40 m sprint times, with no significant differences between the SDJ and LDJ training groups. These findings are in line with previous authors who reported significant decreases in sprint time following plyometric training (Arazi and Asadi, 2011; Saez Saez de Villarreal et al., 2008; Rimmer and Slevert, 2000). Compared to the results of Markovic et al. (2007) and Thomas et al. (2008), the rates of improvements in sprint were greater. Markovic et al. (2007) examined the effects of 10 weeks land based plyometric training (e. g., DJ and hurdle jumps) on 20 m sprint time and did not find significant changes. Also, Thomas et al. (2008) examined the effects of LDJ training on 20 m sprint, and did not find significant improvements. It seems that, the differences in intensity of training, training volume and sample size could be the reason of the discrepancy in results.

In relation to the transfer of plyometric training to sprinting, Young (1992) suggested that jumping may be considered a specific exercise for the development of acceleration because of the similar contact times of jumping and sprinting during the initial acceleration phase. Other mechanisms that improved sprint performance could be changes in stride length and stride frequency via plyometric training (Arazi and Asadi, 2011; Saez Saez de Villarreal et al., 2008; 2010). However, we did not evaluate these variables, previous authors reported high relationship between stride length and frequency with sprint performance (Rimmer and Slevert, 2000).

Although no studies could be found that have simultaneously investigated the possible effects of sand based plyometric training on the agility of participants, in this study positive effects of SDJ and LDJ training on agility TT performance were found. These findings are in line with previous studies that reported positive effects of plyometric training (land based) on agility performance (Arazi et al., 2012; Asadi, 2012; Miller et al., 2006). Agility improvement requires rapid force development and high power output, and it seems that DJ training can improve these requirements. In addition, the DJ training may have improved the eccentric strength of the thigh muscles, a prevalent component in change of direction during the deceleration phase (Sheffard and Young, 2006). Neural adaptations and enhancement of motor unit recruitment are other mechanisms can lead to increase for the agility tests (Arazi et al., 2012; Asadi, 2012; Miller et al., 2006; Thomas et al., 2009). Moreover, agility tasks require a rapid switch from eccentric to concentric muscle action in the leg extensor muscles (the SSC muscle function). Thus, it has been suggested that SSC training (DJ) can decrease ground reaction test times through the increase in muscular force output and movement efficiency, therefore positively affecting agility performance (Markovic and Mikulic, 2010).

In this study, both groups increased 1RM_{LP} significantly, whereas no significant differences were observed

between groups. However, the SDJ group improved $1RM_{LP}$ greater than LDJ group; this increase was not statistically significant. Numerous studies have demonstrated improvements in strength via plyometric training (Arazi and Asadi, 2011; Saez Saez de Villarreal et al., 2008; 2010). In contrast, a number of authors failed to report significant positive effect of plyometric training on strength (Markovic et al., 2007). Several studies have reported significant correlations between muscular strength and sprinting speed (Alexander, 1989; Young et al., 1995). Young et al. (1995) reported significant correlations between strength per body mass measures and starting ability ($r=0.86$), acceleration out of the block ($r=0.64$), and maximum sprinting speed ($r=0.80$). Canavan et al. (1996) reported significant kinetic relationship between Olympic lifts and vertical jump performance. In the present study, $1RM_{LP}$ increased significantly in both groups. It is likely that the improvements observed in lower-body strength contributed to the improvements in both jumping and sprinting performance observed in the present study. Several studies have indicated the importance of plyometric training for improving vertical jump and sprint performance (Arazi et al., 2012; Arazi and Asadi, 2011; Saez Saez de Villarreal et al., 2008; 2010; Potteiger et al., 1999). The strength increases support previous studies, which have shown the effectiveness of plyometric training for increasing muscular strength (Arazi and Asadi, 2011; Saez Saez de Villarreal et al., 2008; 2010; Markovic et al., 2007). Moreover, it is likely that mechanism(s) such as enhanced motor neuron excitability, increased motor unit recruitment, or increased activation of synergists or all; resulting from the DJ may have contributed to increase in $1RM_{LP}$ performance in our investigation (Arazi and Asadi, 2011; Saez Saez de Villarreal et al., 2008; 2010).

Overall, in this study we found greater increases for LDJ group in VJT, SLJT, sprint and TT, whereas SDJ group increased greater than LDJ group in $1RM_{LP}$. According to previous authors suggestions the longer contact time can induce the less effective the SSC (Saez Saez de Villarreal et al., 2009). During performing plyometrics on sand, compliance and friction can play negative effects on SSC, decreases of myotatic reflex, degradation of elastic energy potentiating and increase amortization phase resulting worsens in performance (Impellizzeri et al., 2008; Miyama and Nosaka, 2004; Giatsis et al., 2004). These mechanisms can be key factors for greater increases for LDJ group in VJT, SLJT, sprint and TT. Also, greater increases in strength performance by SDJ group can be greater work by muscle during jumping on sand. The absorptive qualities of sand are likely to increase contraction time allow the leg extensor muscles to build up active state and force prior to shortening. This would enable subjects to produce more work on the sand than on the land resulting greater increases in strength performance (Impellizzeri et al., 2008; Miyama and Nosaka, 2004). In conclusion, improving muscular performance is important for strength and conditioning professionals and athletes to enhance their explosive muscle power, sprint, agility and strength performance. The findings of this study indicate that DJ training on sand and land can be used as a training surface for improving explosive leg power and muscular performance. Therefore, in addition to the well-known training surface such as sand, land and aquatic, strength and conditioning professionals should use sand based plyometric training into their conditioning programs for increasing strength and agility and land based plyometric training for enhancing jump and sprint performance.

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