ISSN: 2148-1148

IntJSCS

International Journal of Sport Culture and Science (IntJSCS)

International Refereed Scientific Journal

Volume 9 Issue 2
June 2021

crossref <enabled>

doi®

International Refereed Scientific Journal

International Journal of Sport Culture and Science
June 2021 : 9(2)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS

IntJSCS

INTERNATIONAL SCIENCE CULTURE AND SPORT ASSOCIATION

www.iscs-a.org

IntJSCS is an International Refereed Scientific Journal published quarterly by ISCSA.

IntJSCS is indexed/included in CrossRef, DOAJ, Google Scholar, Cite Factor, J-Gate, Research Bible, Mendeley, Open Access Journals, Academic Keys, Scientific Indexing Services, DRJI, Journal Index, ASOS, İSAM, Dergipark, Arastirmax; and it is also under evaluation by many other primary indexing services.

Call for papers

We invite high-quality articles, review papers, case studies of theoretical, and empirical, conceptual, and experimental research solely on sport-related themes in a properly formatted file as per the author guidelines. We do our best to have evaluated all the submissions through a fast double-blind review process by our international scientific board and publish them in the following issue. Articles submitted in IntJSCS for consideration should not have been published elsewhere and should not be submitted for review elsewhere during the duration of evaluation. As mentioned in the general scope of the journal, we value submissions from different regions of the world in order to reach a real international coverage. Las, but not the least, we promote researchers to use our open access articles in their researches and to contribute to the development of our journal through their citations.

International Advisory Board

International Journal of Sport Culture and Science
June 2021 : 9(2)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS

TABLE OF CONTENTS

1)) Comparison of Time Management and Social Skills of Students In State And Foundation Universities, 148-163
Melek BAYINDIR, Ahmet DAĞ, Mehmet Bilgin KARADEMİR, Ayşe TÜRKSOY IŞIM
Doi Number: http://dx.doi.org/10.14486/IntJSCS.2021.633

2)) Disappearance of Traditional games by the imitation of Colonial Culture through the Historical parameters of Cultural Colonialism, 164-175
Md Abu NASIM
Doi Number: http://dx.doi.org/10.14486/IntJSCS.2021.634

3)) Effect of Fasting on The Development of Endurance in High-level Basketball Players, 176-184
Maamar HENNİ
Doi Number: http://dx.doi.org/10.14486/IntJSCS.2021.635

4)) Effect of Graston Soft Tissue Mobilization Technique on Muscular Force, 185-191
Ertuğrul ÇAKIR, Z. İnci KARADENİZLİ
Doi Number: http://dx.doi.org/10.14486/IntJSCS.2021.636

5) Examination of Relationship Between Exercise Dependence and Narcissism in Adults, 192-200
Simara Aybike UÇAR, Nimet Haşıl KORKMAZ
Doi Number: http://dx.doi.org/10.14486/IntJSCS.2021.637

6) Investigation of Injury Anxiety in Amateur Football Players, 201-212
Mustafa DEMİR
Doi Number: http://dx.doi.org/10.14486/IntJSCS.2021.638

7) Physical Activity and Healthy Food Preference in Turkish Preschool Children, 213-223
Fatma İlker KERKEZ, Derya SAKALLI
Doi Number: http://dx.doi.org/10.14486/IntJSCS.2021.639

8) Reliability of Biomechanical Balance Platform Device Measurements, 224-232
Ertuğrul ÇAKIR, Z. İnci KARADENİZLİ
Doi Number: http://dx.doi.org/10.14486/IntJSCS.2021.640

9) Social Media Addiction in the Least Developed Countries: a quantitative study among university students in Afghanistan, 233-245
Rahmatullah HAAND, Ahmad Zia ELHAM
Doi Number: http://dx.doi.org/10.14486/IntJSCS.2021.641

10) Sport And Social Capital And Ethnicity: Case Study of Tabriz's Tractor Football Club In Iran, 246-254
Hedayat EYDI TARAKAMEH
Doi Number: http://dx.doi.org/10.14486/IntJSCS.2021.642

11) The Effects of Physical Activity on Disease and Mortality, 255-267
Milan ZELENOVIĆ, Danijel BOŽIĆ, Nikola AKSOVIĆ, George Sebastian IACOB, Radica ALEMPIJEVIĆ, Bojan BJELICA
Doi Number: http://dx.doi.org/10.14486/IntJSCS.2021.643

12) The Effects of the Number of Foreign Players and Market Values of the Super League Clubs on the Sports Success of the Clubs, 268-281
Hacı Şükrü TAŞTAN
Doi Number: http://dx.doi.org/10.14486/IntJSCS.2021.644

13) Transhumanism and Sport, 282-299
Berkan ATASOY
Doi Number: http://dx.doi.org/10.14486/IntJSCS.2021.645

REFEREES OF THIS ISSUE

Dr. Ali ÖZKAN
Dr. Aydın PEKEL
Dr. Ayşegül YAPICI ÖKSÜZOĞLU
Dr. Çiğdem ÖNER
Dr. Ender ŞENEL
Dr. Hazrat M BAHAR
Dr. Levent CEYLAN
Dr. Mine TURGUT
Dr. Nurper ÖZBAR
Dr. Özcan SAYGIN
Dr. Vahdet ALAEDDİNOĞLU
Dr. Zeynep YILDIRIM

International Journal of Sport Culture and Science
June 2021 : 9(2)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS.2021.633

Comparison of Time Management and Social Skills of Students In State And Foundation Universities

[1]Melek BAYINDIR, [2]Ahmet DAĞ, [3]Mehmet Bilgin KARADEMİR, [4]Ayşe TÜRKSOY IŞIM
Gelisim University, İstanbul, Turkey
https://orcid.org/ 0000-0002-9210-2527
İzmir Bakırcay Üniversity, İzmir, Turkey
https://orcid.org/ 0000-0002-1000-1379
Alanya Alaaddin Keykubat University, Antalya, Turkey
https://orcid.org/ 0000-0003-0239-1204
İstanbul University, Istanbul, Turkey
https://orcid.org/ 0000-0001-9189-9645

Email: mbayindir@gelisim.edu.tr, ahmet.dag@bakircay.edu.tr karademirbilgin@gmail.com ayseturksoy@hotmail.com

Type: Research Article (Received:05.06.2021– Accepted: 05.07.2021)

Abstract

In this study, it was aimed to compare the time management and social skills of the School of Physical Education and Sports students studying at State and Foundation universities. The relational survey model, one of the descriptive research methods, was used in the study. A total of 222 volunteer students from Istanbul Cerrahpaşa University Faculty of Sport Sciences and Istanbul Gelişim University School of Physical Education and Sports participated in the study. For the purpose of the research, the personal information form prepared by the researchers, the social skills inventory adapted to Turkish by Yüksel (1998) and the time management inventory adapted to Turkish by Alay and Koçak (2002) were used. In the statistical analysis of the data, independent samples t-test and ANOVA analysis tests, which are among the parametric tests, were used. According to the results of the research; A significant difference was found in the affective control sub-factor of social skills dimensions by gender. Significant differences were found in the affective control sub-factor and social sensitivity factors of social skills dimensions according to the type of sport. No significant differences were found in the overall total and sub-factors of the students in terms of their social skill levels, their departments of education and university status. Significant differences were detected in the time-consuming sub-factor of time planning dimensions by gender and in the overall total. Significant differences were not found in the overall total and other sub-factors of time planning dimensions according to the type of sport, education department and university status.

Keywords: Sport, time management, social skill.

Introduction

Time management constitutes one of the most traditional subjects in the field of learning and study strategies. It is significant for students to achieve their goals by establishing an effective awareness of the use of time management in the university education process. The success of university students depends on their efficient use of time. In the literature review, it is observed that there is a relationship between time management and academic success (Bonhomme, 2007; Cemaloglu & Filiz, 2010; Pehlivan, 2013), goal setting and self-regulation (Miller et al., 1996), anxiety reduction (Lang, 1992), more work-life balance (Macan) et al., 1990) and quality of life (O'Connell et al., 2014).

Many definitions have been made on the concept of time in the literature. According to Örücü, Tikici and Kanbur (2007), although time is a state of affairs in which we live emotionally, it is an unknown in the flow that we live intensely that suddenly activates us as a reflex. According to Shipman et al. (1983), time is an impartial commodity that costs us nothing financially and is entirely at our disposal, given equal amounts to all. According to Griessman (1994), there is no such thing as leisure time. All time has value, and time is not respected enough because it is invisible and abstract. As can be understood from such over-definitions, time perception is a relative concept and it is not possible to make a general and clear definition. Because it is not an objective concept that man can perceive with sensory organs, but rather a concept that exists in nature and can be measured.

The concept of time management is very new and was first introduced as a means of education in Denmark. It appeared in the 1970s, and due to the high intensity of work in the early 1980s, managers perceived time as an element that needed to be managed (Claessens et al., 2007). The main thing in time management is the ability of the person to manage himself over time. Proper implementation of time management cannot be explained only by knowing how to use time effectively. (Can, 1992). Many people are unable to use time management effectively and efficiently within the process outside of mandatory time frames (Hendry, 2004). The aim of time management is to be able to categorize works in order of priority, save time and thus create qualified works in order to gain the highest performance in the works done (Gözel and Halat, 2010). The attitudes of people working in the field of sports towards time management are of particular importance. Because sport is a science that is always open to change and development, which has a dynamism in itself. These people who lead athletes, clubs and individuals within the department, such as coaches, sports administrators or physical education teachers, should have a certain sense of vision. Performances should be provided in parallel with the success chart in the future by guiding the athlete. (Uyar and Sunay, 2009).

In the globalized world, technological developments affect social life and change interpersonal relations and the forms of these relationships. The fact that individuals have to meet their sensory, social and physiological needs while continuing their interactions naturally forms the basis of the behavior of individuals. While individuals meet their needs, they naturally interact with others. Among the factors that accelerate interaction, social skills play an important role in this sense. Social skills are expressed in the interpersonal context as

a set of partially independent, situational, verbal and nonverbal responses in which the individual expresses his needs, feelings, preferences, ideas (Gismero,2000).

Many definitions have been made in the literature on the concept of social skills. Social skills are defined as "a set of skills that enable effective organization of cognition and behaviors to achieve interpersonal and social goals that are carried out in a culturally acceptable way" (Ladd and Mize, 1983 : Migueláñez and Conde, 2011).

Social skills are patterns of behavior aimed at creating positive reactions to understanding people in verbal or nonverbal behaviors, both regardless of age in all social settings and in verbal or nonverbal behaviors in which communication skills are used (Yigit and Yilmaz, 2011; Gülay and Akman, 2009; Sevinç, 2005).

In another definition, social skills are expressed as the process in which more than one person comes together and socializes and people transfer their existing experiences, teachings and cultures to another (Şahan, 2008). A certain accumulation is needed to raise awareness in the socialization process of individuals. People can contribute to socialization by taking advantage of the environment and conditions in order to use the existing potential of the existing capacity (Filiz, 2010).

Socialization is when a person learns the rules and values of the community s/he lives in and puts what s/he has learned into practice. Socialization is a lifelong process that starts with the family and continues with the school. Sports can rehabilitate people's moods, and socialization is activated with the influence of teams and individual sports (Çiriş, 2014). In addition, when the effects of sports on people are examined in research, it has been determined that sports have positive contributions not only on individuals physically, but also mentally and morally (Keskin, 2014). Sports is a science that provides discipline order and continuity that reduces social distancing, where people can increase their quality of life, strengthen their empathy skills, and help with socialization, leadership and strategy in human life (Kaplan and Çetinkaya, 2014).

With this study, which aims to compare the time management and social skills of the students of the School of Physical Education and Sports studying at public and foundation universities, the factors affecting the time management and social skills of the students are examined. This study has been carried out in order to contribute to the literature. Because university students try to meet deadlines in academic subjects such as project preparation, following course schedules, preparing systematically for assignments and exams, they also try to participate in extracurricular activities. They may feel that they do not have enough time to complete all these studies.

Method

Relational survey model, one of the descriptive research methods, was used in the research. The relational survey model is the type of research aimed at determining whether there is a

relationship between two and more variables and the extent of this relationship (Karasar, 2017).

Research Group

The research group consists of students from the department of recreation, sports management and coaching who are studying at Istanbul Cerrahpasa University Faculty of Sports Sciences and Istanbul Gelişim University School of Physical Education and Sports in the 2019-2020 academic year. The sample group of the study was selected through "Simple Random-Random Sampling". In this type of sample, each unit in the universe has the possibility to be equal and independent in the selection of the sample, and it is a sample in which the neutrality rule can be applied (Balcı, 2001). A total of 222 students, 165 (74.3%) male and 57 25.7% female, voluntarily participated in the research.

Data Collection Tools

For the purpose of the research, a personal information form prepared by the researcher was used. This information form includes independent variables such as gender, sports branch, university, department.

Social Skills Inventory: It is a measuring instrument developed by Riggio in 1986 and revised in 1989 and taken its present form. The adaptation of the Social Skills Inventory to Turkish was carried out by Yüksel (1998). The scale is answered on a five-point Likert scale. Social skills inventory is measured in six different subdivisions. These are Affective expressiveness, Affective sensitivity, Affective control, social expressiveness, social sensitivity and social control.

Time Management Inventory: Developed by Britton and Tesser (1991), the Turkish version was made by Alay and Koçak (2002). The time management inventory also has a total of 27 items. Inventory consists of three sub-dimensions: time planning, time attitudes and time spenders. Time management inventory is a scale prepared using the five-point Likert scale.

Data Analysis

SPSS 20.0 package program was used in the analysis of the data obtained from the research. Descriptive statistics were used in the analysis of the data in the research. As a result of the normality analysis, it was seen that the data were normally distributed. In the statistical analysis of the data, independent sample t-test analysis and Anova tests, which are parametric tests, were used.

Results

In this section, the descriptive characteristics of the students participating in the research and the dimensions of social skills and time management are explained and interpreted in tables.

Table 1. Normal distribution analyses of research variables

	Average±S.Deviation	Skewness	Kurtosis
Affective Expressiveness	3,24±0,64	-,178	-,196
Affective Sensitivity	3,81±0,66	-,455	,257
Affective control	2,94±0,48	-,121	,273
Social Expressiveness	3,71±0,69	-,280	-,524
Social Sensitivity	3,00±0,79	,399	1.492
Social Control	3,20±0,52	-,392	,080
Planning of Time	3,25±0,75	-,188	-,155
Time Attitudes	3,61±0,55	,138	,302
Time Spenders	2,87±0,90	,260	-,448

In the study, skewness and kurtosis analysis was conducted in order to test whether the obtained data provided normal distribution or not. According to Table 1, the data was found to be within the normal distribution range.

Table 2: Descriptive Characteristics of Participants

Explanation		N	%	Explanation		N	%
Gender	Male	165	74.3	Sport Type	Individual	104	46.8
	Female	57	25.7		Team	118	53.2
University	Foundation	54	24.3	**Department**	Coaching	82	36.9
	State	168	75.7		Recreation	54	24.3
					Management	86	38.7
	Total	**222**	**100**		**Total**	**222**	**100**

According to Table 2, 74.3% of the students who participated in the survey were male and 25.7% were female students. It is seen that 24.3% of the participants were educated at foundation universities, 75.7% at state universities, 36.9% were students in the coaching department, 24.3% were students in recreation, and 38.7% were students in sports management. When we look at the types of sports that the participants do, it is seen that 46.8% do individual sports and 53.2% do team sports.

Table 3: T-Test, Average and Standard Deviation Values of Social Skill Dimensions by Gender

		N	X	SD	t	P
Affective Expressiveness Factor	Male	165	16.07	3.26	-1.347	,179
	Female	57	16.73	3.03		
Affective Sensitivity Factor	Male	165	19.09	3.27	,848	,883
	Female	57	19.01	3.20		
Affective Control Factor	Male	165	14.54	2.51	-2.142	,033*
	Female	57	15.33	1.98		
Social Expressiveness Factor	Male	165	18.52	3.39	-,031	,975
	Female	57	18.54	3.72		
Social Sensitivity Factor	Male	165	15.07	4.14	,605	,548
	Female	57	14.70	3.48		
Social Control Factor	Male	165	16.09	2.58	,486	,627
	Female	57	15.89	2.78		
The Overall Total	Male	165	99.38	8.76	-,724	,476
	Female	57	100.39	9.53		

*p<0,05.

Looking at Table 3, a significant difference was found in the affective control sub-factor of social skill dimensions according to gender (p<0.05). According to this difference, female students' affective control sub-factor averages are higher than male. No significant differences were found in the overall total and other sub-factors according to the gender factor (p>0.05).

Table 4: T-Test, Average and Standard Deviation Values of Social Skill Dimensions by Sports Type

		N	X	SD	t	P
Affective Expressiveness Factor	Individual	104	16.44	2.99	,864	,389
	Team	118	16.06	3.39		
Affective Sensitivity Factor	Individual	104	18.92	2.93	-,644	,521
	Team	118	19.20	3.50		
Affective Control Factor	Individual	104	15.15	2.34	2.375	,018*
	Team	118	14.38	2.42		
Social Expressiveness Factor	Individual	104	18.05	3.41	-1.920	,056
	Team	118	18.94	3.48		
Social Sensitivity Factor	Individual	104	14.36	3.64	-2.167	,031*
	Team	118	15.51	4.20		
Social Control Factor	Individual	104	15.77	2.35	-1.399	,163
	Team	118	16.27	2.84		
The Overall Total	Individual	104	98.93	8.13	-1.108	,270
	Team	118	100.27	9.62		

*p<0,05.

When Table 4 is examined, significant differences were found in the affective control sub-factor and social sensitivity factors of social skills dimensions according to the type of sport (p <0.05). According to this difference, it is seen that the average of the students who do individual sports in the affective control factor and the students who do team sports in the social sensitivity sub-factor are higher. No significant differences were found in the overall total and other sub-factors according to the sports type (p>0.05).

Table 5: T-Test, Average and Standard Deviation Values of Social Skill Dimensions by University Status

		N	X	SD	t	P
Affective Expressiveness Factor	Foundation	54	15.98	3.00	-,691	,490
	State	168	16.32	3.27		
Affective Sensitivity Factor	Foundation	54	18.55	3.33	-1.348	,179
	State	168	19.23	3.21		
Affective Control Factor	Foundation	54	14.94	2.52	,691	,490
	State	168	14.68	2.38		
Social Expressiveness Factor	Foundation	54	17.77	3.59	-1.843	,067
	State	168	18.77	3.40		
Social Sensitivity Factor	Foundation	54	14.72	3.73	-,540	,589
	State	168	15.05	4.06		
Social Control Factor	Foundation	54	16.03	2.84	-,012	,990
	State	168	16.04	2.57		
The Overall Total	Foundation	54	98.01	9.70	-1.544	,124
	State	168	100.18	8.66		

*p<0,05.

According to Table 5, no significant differences were found in the overall total and sub-factors of social skill dimensions according to university status (p>0.05).

Table 6: ANOVA Test, Average and Standard Deviation Values of Social Skill Dimensions by Education Departments

		N	X	SD	F	P
Affective Expressiveness Factor	Coaching	82	16.27	3.13	,226	,798
	Recreation	54	16.00	3.01		
	Sports Management	86	16.37	3.41		
	Total	222	16.24	3.20		
Affective Sensitivity Factor	Coaching	82	19.07	3.43	,882	,415
	Recreation	54	18.61	3.29		
	Sports Management	86	19.36	3.03		
	Total	222	19.07	3.24		
Affective Control Factor	Coaching	82	14.70	2.47	,069	,934
	Recreation	54	14.85	2.42		
	Sports Management	86	14.72	2.37		
	Total	222	14.74	2.41		
Social Expressiveness Factor	Coaching	82	18.68	3.39	2.136	,121
	Recreation	54	17.70	3.61		
	Sports Management	86	18.90	3.41		
	Total	222	18.53	3.47		
Social Sensitivity Factor	Coaching	82	14.58	3.79	1.502	,225
	Recreation	54	14.64	3.72		
	Sports Management	86	15.55	4.28		
	Total	222	14.97	3.98		
Social Control Factor	Coaching	82	16.15	2.58	,124	,883
	Recreation	54	15.92	2.84		
	Sports Management	86	16.01	2.57		

	Total	222	16.04	2.63		
The Overall Total	Coaching	82	99.54	8.75	2.131	,121
	Recreation	54	97.74	9.66		
	Sports Management	86	100.93	8.56		
	Total	222	99.64	8.96		

*p<0,05.

When Table 6 is examined, no significant differences were found in the grand total and sub-factors of social skills dimensions according to the education departments (p>0.05).

Table 7: T-Test, Average and Standard Deviation Values of Time Planning Dimensions by Gender

		N	X	SD	t	p
Time Planning Factor	Male	164	50.28	12.02	-1.244	,215
	Female	57	52.56	11.49		
Time Attitude Factor	Male	165	23.15	3.40	-1.469	,143
	Female	57	23.98	4.38		
Time Spenders Factor	Male	165	12.04	3.34	-2.765	,006*
	Female	57	13.52	3.89		
The Overall Total	Male	164	85.51	13.30	-2.122	,035*
	Female	57	90.07	15.67		

*p<0,05.

According to Table 7, significant differences were found in the time spenders sub-factor and overall total of the time planning dimensions by gender (p<0.05). According to this differences, the average of female students is higher than that of male students. No significant differences were detected in the sub-factors of time planning and time attitude (p>0.05)

Table 8: T-Test, Average and Standard Deviation Values of Time Planning Dimensions by Sports Type

		N	X	SD	t	P
Time Planning Factor	Individual	104	51.10	11.15	,273	,785
	Team	118	50.66	12.57		
Time Attitude Factor	Individual	104	23.48	3.82	,438	,662
	Team	118	23.26	3.58		
Time Spenders Factor	Individual	104	12.67	3.23	,985	,326
	Team	118	12.20	3.79		
The Overall Total	Individual	104	87.25	13.66	,565	,573
	Team	118	86.18	14.43		

*p<0,05.

When Table 8 is examined, no significant differences were found in the overall total and other sub-factors of the time planning dimensions according to the type of sport (p>0.05).

Table 9: T-Test, Average and Standard Deviation Values of Time Planning Dimensions by University Status

		N	X	SD	t	P
Time Planning Factor	Foundation	54	50.42	9.51	-,317	,752
	State	168	51.01	12.60		
Time Attitude Factor	Foundation	54	23.11	3.51	-,580	,563

	State	168	23.44	3.75		
Time Spenders Factor	Foundation	54	12.94	3.19	1.243	,215
	State	168	12.25	3.64		
The Overall Total	Foundation	54	86.48	10.78	-,126	,899
	State	168	86.76	14.99		

*p<0,05.

Looking at Table 9, no significant differences were found in the overall total and other sub-factors of the time planning dimensions according to university status (p>0.05).

Table 10: ANOVA Test, Average and Standard Deviation Values of Time Planning Dimensions by Education Departments

		N	**X**	**SD**	**F**	**P**
Time Planning Factor	Coaching	82	50.02	12.32	,564	,570
	Recreation	54	50.48	9.49		
	Sports Management	86	51.91	12.87		
	Total	222	50.87	11.90		
Time Attitude Factor	Coaching	82	23.56	4.10	,215	,806
	Recreation	54	23.14	3.48		
	Sports Management	86	23.31	3.41		
	Total	222	23.36	3.69		
Time Spenders Factor	Coaching	82	12.60	3.60	1.192	,306
	Recreation	54	12.85	3.26		
	Sports Management	86	11.97	3.64		
	Total	222	12.42	3.54		
The Overall Total	Coaching	82	86.28	15.23	,098	,907
	Recreation	54	86.48	10.78		
	Sports Management	86	87.20	14.83		
	Total	222	86.69	14.05		

*p<0,05.

Looking at Table 10, no significant differences were found in the overall total and other sub-factors of the time planning dimensions according to the education department (p> 0.05).

Discussion and Conclusion

In this section, students' scores obtained from all of the time management inventory and social skills inventory, planning of time, time attitudes and time spenders, affective expressiveness, affective sensitivity, affective control, social expressiveness, social sensitivity, and social control sub-dimensions are interpreted; and the interpretation of the findings about whether these scores differ according to the gender, department, sports branch and university type is given.

A significant difference was found in the affective control sub-factor of social skill dimensions according to gender. According to this difference, female students' affective

control sub-factor averages are higher than male. According to this result, it is thought that women are more capable of expressing their emotions and affective communication than men. As a matter of fact, the study conducted by Ekşi et al. (2019) found that women's social skill level was significantly higher than that of men. This is because women's ability to send affective messages and express themselves socially is higher than that of men. In the studies conducted by Şenol and Türkçapar (2016); Avşar, and Kuter. (2007); Aktı (2011); Kalafat (2007); Girgin et al. (2011); Dicle (2006); Atkins and Burnett (2001), the level of social skills was found to be higher in women than in men. The results of the research carried out match this finding of our study. Considering the studies that do not overlap with the findings of our study, Avşar (2004), Tekin et al. (2006) concluded that social skills scores do not differ according to the gender variable in their studies. In other studies, it is seen that there are differences in social skill dimensions according to gender in general.

Again, according to the findings of this study, significant differences were found in the affective control sub-factor and social sensitivity factors of the social skill dimensions according to the type of sport. According to this difference, it is seen that the average of the students who do individual sports in the affective control factor and the students who do team sports in the social sensitivity sub-factor are higher. No significant differences were found in the overall total and other sub-factors according to the sports type. The fact that the affective control factor is higher in the students who do individual sports compared to the students who do team sports can be shown as self-awareness, which is one of the unique benefits of sports, high individual self-confidence, caring about one's body and oneself, self-worth increases self-esteem, and a developed combative side. In the sub-factor of social sensitivity, it was determined that the average of students who played team sports was higher than that of students who played individual sports. It can be shown as students sharing cooperation, winning, losing, joy and sadness together as a result of forming team unity, improving interaction and communication between members within the team and experiencing cooperation more. When we looked at the studies carried out by Gezer (2010), it was determined that team athletes are more socially skilled than individual athletes according to their status as individual and team athletes. As a result of another study (Özcan & Yıldırım, 2011), in which students who do team sports and individual sports as licensed and students who do not do sports were compared, it was found that there was a significant difference in the sub-dimensions of the social skill scale in favor of those who do team and individual sports in terms of affective sensitivity, affective expressiveness, social control and social sensitivity. The results of this research support this finding of our research.

The social skill levels of the students were also evaluated in terms of the departments they studied, and according to the result, no significant difference was found between the social skills of the coaching, recreation and sports management students according to the departments they studied. As a result of the research conducted by Latifoğlu (2012) to evaluate the relationship between the self-esteem levels and social skills of university students, no significant differences were found between the social skill levels of the students of guidance and psychological counseling, classroom teaching and preschool teaching

departments and the departments in which they studied. When we look at the studies in the literature that are not in parallel with this finding of our research, according to the results of the research conducted by Dicle, (2006), it has been determined that the social skill levels of the students studying in the fields of fine arts and foreign languages are higher than the students studying in science and social fields. Apart from this study, in the studies conducted by Şenol and Türkçapar, (2016); Koç Telli (2010); Girgin et al. (2011) it was determined that there was a significant difference in the social skill levels of the students according to the variable of the department they studied.

Another result obtained from the research is that no significant differences were found in the overall total and sub-factors in terms of social skills dimensions according to university status. This finding is thought to have been influenced by the location of the campuses of both universities in the city (Istanbul-Avcılar) and the intensity of social and cultural activities in the campus area and the access of students to these activities. In the study conducted by Şenol and Türkçapar (2016), significant differences were observed in the level of social skills of university students studying at Ahi Evran University, Erciyes University, Gaziosmanpaşa University, Kahramanmaraş Sütçü İmam University and Gaziantep University, according to the university unit they studied. In the study conducted by Şahan in 2008, it was concluded that Gazi University students were more willing than Selcuk University students to prefer activities that would allow them to have a pleasant time with others rather than individual activities. The results of these studies are not similar to the findings of our study.

Significant differences were found in the time spenders sub-factor and overall total of the time planning dimensions by gender. According to these differences, the average of female students is higher than that of male students. This finding of our research was interpreted as female students stay away from time-consuming time spenders, plan their time well, and use traditional time management behaviors such as listing, planning and programming more effectively than male students. Similarly, the results of some studies examining the relationship of university students with time management skills and other parameters are in line with the results of this study. Çağlıyan and Güral, (2009); Erdul, (2005); Misra and Mc Kean (2000) stated in their study that the gender variable created a significant difference in time management scores and that women's time management skills were higher than men's. In the literature review, which is not in parallel with this finding of our research; (Adams and Blair, 2019; Işcan, 2008; Pirinçci and Dikmetaş, 2005) no significant difference was found between time management skills by gender.

No significant differences were found in the overall total and other sub-factors of the time planning dimensions according to the department of education. This finding is interpreted that students are not effective in planning time and they do not avoid time traps. In the study examining the time management skill levels of Pamukkale University students and their impact on students' academic achievements, no significant difference was found between the time management skill levels of students studying in different faculties (İşcan, 2008). In the

study, which examined the difference between the time management behaviors of the students studying in sports sciences in terms of their departments, no significant difference was found according to the students' time planning, time attitudes, time spenders and the overall score averages. (Sugötüren et al., 2011). These studies coincide with this finding of our research.

No significant differences were found in the overall total and other sub-factors of the time planning dimensions according to the university status. In other words, time management skills do not differ according to the type of university studied. According to the results of the study, which investigated the time management behaviors of the students studying in various programs within Fırat University Health Services Vocational School and Hacettepe University Health Services Vocational School and the relationship between these behaviors and academic success, time management scores did not differ according to the university variable. (Erdem et al., 2005). This study is similar to this finding of our research.

As a result, a significant difference was found in the affective control sub-factor of the Social skill dimensions of Sports Science students studying at State and Foundation universities by gender. Significant differences were found in the time spenders sub-factor and overall total of the time management dimensions by gender.

While there were significant differences in the sensory control sub-factor and social sensitivity factors of social skill size according to sports type, no significant difference was achieved in the time management dimension. It was concluded that there was no difference in the social skill levels and time management dimensions of the students by their university status and departments.

Based on the results of this research, the following recommendations have been developed; University students try to meet deadlines in academic subjects such as project preparation, following course schedules, preparing systematically for assignments and exams, they also try to participate in extracurricular activities. They may feel that they do not have enough time to complete all these studies and that they are not experiencing the efficiency of their social skills. Seminars, conferences and congresses, compulsory course selections in the field of time management and social skills, as well as the ability of successful people to convey their experiences in this field or to create internship opportunities can be supported. Various social and cultural activities can be organized by universities in order to improve the social skills levels of university students. Seminars or conferences on time management and social skills can be given both in order to organize the academic life of the students and to prepare the students for the professional life. This study was conducted only for sports science students at Istanbul University-Cerrahpaşa and Gelişim University. In future studies, a comparison can be made by increasing the number of universities and faculties and evaluating the social skills and time management skills of the students.

REFERENCES

Adams, R. V., & Blair, E. (2019). Impact of time management behaviors on undergraduate engineering students' performance. *SAGE Open*, *9*(1), 2158244018824506.

Alay, S., & Koçak, S. (2002). Time management survey: Validity and reliability. *Hacettepe Faculty of Education Journal*, *22*, 9-13.

Atkins Burneth SM. (2001). Measuring social competenceın the early elementary years a researchan alysis. Pissertation University of Michigan.

Avşar, Z., & Kuter, F. Ö. (2007). Determination of Social Skills Levels of Physical Education and Sports Department Students Uludag University Case. *Journal of Theory & Practice in Education (JTPE)*, *3*(2).

Aktı, S. 2011. Determination of the relationship between media literacy and social skill levels of primary eighth graders. Fırat University Institute of Social Sciences, Unpublished Master's Thesis, Elazığ.

Avşar, Z. 2004. Social skill levels of physical education teachers. Uludag University Institute of Social Sciences, Master's Thesis, Bursa.

Balcı, A. (2001). Research methods, techniques and principles in social sciences, Ankara, Pegem Yayıncılık.

Bayrakdaroğlu, Y., Albayrak, A. Y., Turkay, H., & Kurudirek, (2020) M. İ. Review of Leadership Orientation and Time Management of Basketball Players. *Iğdır University Journal of Sports Sciences*, *3*(1), 1-12.

Bittel, L. R. (1991). Right on time! The complete guide for time pressured managers. New York: McGraw-Hill.

Bonhomme, G. (2007). The time management skills of at-risk African American college students: Practices, experience, and context (Doctoral dissertation).

Caballo, V. (2007). Manual de evaluación y entrenamiento de las habilidades sociales. (7ma. ed.). Madrid: Siglo XXI.

Can, H., (1992): Organization and Management. Ankara: Adım Yayıncılık.

Cemaloglu, N., & Filiz, S. (2010). The relationship between time management skills and academic achievement of potential teachers. Educational Research Quarterly, 33(4), 3-23.

Claessens, B.J.,Eerde, W.V., Rutte, C.G., ve Roe, R.A. (2007). A review of the time management literature. Personnelreview, 36(2), 255-276.

Çağlıyan, V., & Güral, R. (2009). *Time management skills: An assessment on vocational school students.* KMU School of Economics and Administrative Scinces Journal Year:11 Issue:17.

Çiriş, V. (2014). Comparison of Social Skill Levels of University Students Who Play and Do Not Play Sports, Master's Thesis, Ankara: Gazi University.

Dicle, A. N. (2006). *Examination of the social skill levels of university students according to their emotional intelligence levels and some personal characteristics* (Master's thesis, Ondokuz Mayıs University, Institute of Social Sciences).

Erdem, R., Pirinçci, E., & Dikmetaş, E. (2005). Time Management Behaviors of University Students and The Relationship of these Behaviors with Academic Success. *Manas University Journal of Social Sciences, 7*(14), 167-177.

Erdul G. (2005). The Relationship Between University Students' Time Management Skills and Anxiety. Master's Thesis. Bursa. Uludag University.

Ekşi, A., Yalçın, F. A., Kirazlı, G., Kalyoncu, E., & Kantarlı, İ. C. (2019). Examination of the social skills and conflict management skills of university students in peer relations. *Health Care, 6*(1), 71.

Filiz, Z. (2010). Evaluation of participation in sports in the socialization of university students. Journal of Physical Education and Sports Sciences, 4.

Gezer, E.D., (2010). *Examining the Social Skill Levels of Athletes in Different Sports in Terms of Various Variables.* Master's Thesis, Ankara, Ankara University, Institute of Social Sciences.

Griessman, B. E. (1994). *Time tactics of very successful people*. Newyork. 1-233.

Gülay, H., & Akman, B. (2009). Social skills in preschool period. *Ankara: Pegem Akademi*.

Gismero, E. (2000). EHS Escala de Habilidades Sociales. Manual. Madrid: TEA Publicaciones de Psicología Aplicada.

Gözel, E., Halat, E. Primary School Teachers and Time Management, Pamukkale University Institute of Social Sciences Journal 2010; 73-89.

Girgin, G., Çetingöz, D., & Vural, D. E. (2011). Examination of the social skill levels of teacher candidates. *Journal of Theoretical Education, 4*(1), 38-49.

Güven, M., Yeşil, S., (2011), Time Management in Enterprises, (Editor: İ. Bakan), 2nd Edition, Contemporary Management Approaches Principles, Concepts and Approaches, Beta Basım Inc., Istanbul.

Hendry, C., (2004): Making Most of Time. NurseRearcher, 12 (2).

İşcan, S. (2008). *The effect of time management skills of Pamukkale University students on their academic achievements* (Master's thesis).

Kaplan, Y. & Çetinkaya, G. (2014). The process of socialization-re-socialization through sports. International Journal of Science Culture and Sport, 2:120-125.

Kara, E. 2003. Factors that affect teachers and students' perceptions of social skills. Çukurova University, Unpublished Master's Thesis, Adana.

Kalafat, T. 2007. *Comparative examination of the relationship between the body satisfaction levels of university students and their social skill levels (Çanakkale province case).* Çanakkale Onsekiz Mart University Institute of Social Sciences, Unpublished Master's Thesis, Çanakkale.

Karasar, N. (2017). Scientific Research Methods: Concepts, Techniques and Principles (27nd Edition), Ankara: Nobel Yayınevi.

Keskin, Özkan. (2014). Effects of physical education and participation in sports on social development in children. International Journal of Multidisciplinary Academic Research. 1.

Koc Telli, M. (2010). An analysis of social skill level and self-efficacy of the students attending the Mersin University (Unpublished master's thesis). *Mersin University Institute of Social Sciences*

Lang, D. (1992). Preventing short-term strain through time-management coping. *Work & Stress*, *6*(2), 169-176.

Ladd, G. W., & Mize, J. (1983). A cognitive–social learning model of social-skill training. Psychological review, 90(2), 127. Doi: http://dx.doi.org/10.1037/0033-295X.90.2.127.

Macan, T. H., Shahani, C., Dipboye, R. L., & Phillips, A. P. (1990). College students' time management: Correlations with academic performance and stress. *Journal of educational psychology*, *82*(4), 760.

Migueláñez, S. O., & Conde, M. J. R. (2011). Perspectiva tecnológica de la evaluación educativa en la universidad. Teoría de la Educación. Revista Interuniversitaria, 23(1), 131-157.

Miller, R. B., Greene, B. A., Montalvo, G. P., Ravindran, B., & Nichols, J. D. (1996). Engagement in academic work: The role of learning goals, future consequences, pleasing others, and perceived ability. *Contemporary educational psychology*, *21*(4), 388-422.

O'Connell, G. D., Nims, R. J., Green, J., Cigan, A. D., Ateshian, G. A., & Hung, C. T. (2014). Time and dose-dependent effects of chondroitinase ABC on growth of engineered cartilage. *European cells & materials*, *27*, 312.

Örücü, E.,Tikici, M. and Kanbur, A. (2007). An empirical study on time management in enterprises operating in different sectors: Bursa Province Case. Journal of Electronic Social Sciences.

Özcan, G., & Yıldırım, S. (2011). Comparison of social skill levels of secondary school students who do team sports and individual sports as licensed and those who do not. *Bolu Abant İzzet Baysal University Institute of Social Sciences Journal*, *11*(2), 111-135.

Pehlivan, A. (2013). The effect of the time management skills of students taking a financial accounting course on their course grades and grade point averages. International Journal of Business and Social Science, 4(5), 196.

Shipman, N. J., Martin, J. B., McKay, B. A., & Anastasi, R. E. (1983). Effective time management techniques for school administrators. Englewood Cliffs, NJ: Prentice Hall.

Sevinç, M. (2005). *Confidence and success.* Istanbul: Morpa Kültür Yayınları.

Sugötüren, M., Mülazımoğlu Ballı, Ö., & Gökçe, H. (2011). Time management behaviors of students at the school of sports sciences and technology.

Şahan, H. (2008). The role of sports activities in the socialization process of university students. KMU School of Economics and Administrative Scinces Journal. 10(15):260-278.

Şenol, E., & Türkçapar, Ü. (2016). Examination of the social skills levels of university students. *Mehmet Akif Ersoy University Journal of Faculty of Education, 1*(40).

Tekin M,. Bayraktar G, Yıldız M, Katkat D. (2006). Examining the Social Skill Proficiency Levels of Physical Education Teachers by Various Variables, Ataturk University Journal of Physical Education and Sports Sciences 8(1), 43-59.

Uyar, Y. and Sunay, H. (2009). A Study on the Levels of Perception of University Sports Management Education by Ankara Province Sports Public. Journal of Sportsmeter Physical Education and Sports Sciences, 7(4), 141-149.

Yiğit, R. and Yılmaz, H. (2011). "Examination of the relationship between the social skill levels of elementary grade II students and self-esteem". Ahmet Keleşoğlu Faculty of Education Journal 31, 335-347.

Yüksel, G. (1998). Adaptation of social skills inventory to Turkish: Validity and reliability studies. *Journal of Psychological Counseling and Guidance*, *2*(9), 39-48.

International Journal of Sport Culture and Science
June 2021 : 9(2)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS.2021.634

Disappearance of Traditional games by the imitation of Colonial Culture through the Historical parameters of Cultural Colonialism

Md Abu NASIM
[1] Department of History Aliah University
https://orcid.org/0000-0002-0666-1374

Email: mdabunasim.90@gmail.com

Type: Research Article (Received:05.06.2021– Accepted: 05.07.2021)

Abstract

History reflects the evolution of mankind in its many facts. Culture, economy, society and polity are so interwoven together that a change in one is reciprocated by changes in the others too. Under colonial rule, political transformation had a great impact on the social and cultural life of the Bengali. Folk games, which are reflections of the cultural life of Bengal, saw a major transformation during this time. The folk games, which flourished in rural Bengal for centuries, had to give way to the more 'institutionalized' games. In Calcutta, there was little scope for the folk games to flourish and develop, as the inhabitants of Calcutta both in its early phase and in the later phase were associated with the colonial administration and colonial trade. In Calcutta, when the Colonial games were making their mark on the life of the Calcuttans in more than one way, the folk-games were eclipsed and lost. Sport is an expression of the societal and cultural manifestation, it can be consider as the mirror of any given society at a particular time. If we are to consider the world of sports in Calcutta during the early twentieth century, it will reflect some realities about its economy, society and polity.

Keywords: Colonial hegemony, Cultural Displacement, Bengaliness, Communicative Space, Pathological Game.

Introduction

Sport is an integral part of the social and cultural life of a modern society, (Groll: 2014) which represents the modern nation state as its distinct identity. From the very ancient times, sports had been the source of identity for localities, provinces and nations. Hence some of the games had been the source of entertainment as well as power of identity for a group of people associated with them. It is through the ages that games have evolved as a part of the cultural, physical and moral educators for the generation. The objective of games spread in a wider process including culture, politics, religious, economics and nationalism (Ørnulf: 2017). Since such issues are very fundamental to the identity of a race, group or nation, from the time of immemorial.

In case of Bengal, it is important to point out that the people of 'Banga' holds a rich history, culture, and identity of their own very distinct from the others. In the pre-colonial period, they had gone through a process of acculturation, where they had assimilated new ideas and ideologies, new cultural traits from those who came to inhabit the region but they continued to hold on to their own cultural and social life. Hence, some of the games, which existed in rural Bengal during the time, were given a boost by the addition of a few more. Though in the historical documents, we do not find a clear reflection of the prevailing sports among the local people, as most of the historical writings, at that time were official documents, which gave little references to the life of the people in general. In recent times, there are some researches, which throw light on the sports and related activities of the people. Though in the recent past, the sport life of a given nation or the folk games have found some interest among the researchers yet the works of some of the scholars clearly project that the modern game and sports have replaced the traditional games, as there is a clear negotiation, in Bengal it has been promulgated by Choudhory. (Choudhory: 1969).

It is our primary concern to trace the cause of this negotiation with an important part of culture in Urban Bengal-Calcutta. During the colonial rule in India, the attempt of the colonizers was to create a class of Indian in blood and colour but English in taste, manner, etiquettes and intellectual. As the idea and institutions of the West became the way of life for this new genre of Bengali called the 'middle class' or the Bhadralok as they preferred to call themselves. It was the introduction of the new revenue policy, manufacturing and industries, which consolidated the colonial character of this genre of the Bengali Bhadralok. Nevertheless, the absentee of the landlords, stationed in Calcutta, changed their pattern of amusements, leisure and games to a more colonial pattern, making themselves much closer to their European boss both in office and in the field. Hence, the negotiation was not at a political level but at a cultural level also. From the early nineteenth century, with the acceptance of Western education and government jobs in the British bureaucracy the bhadralok of Calcutta used to describe themselves as a distinct group separated and cut-off from their tradition and the rural base. They were not late to even distant themselves from the rural and urban poor, as they imbibed the western life-style and games very different from the others. The bhadralok included the rich Babus (Elite Class) and the Madhyabitta (The Middle class). In the construct of the new identity or gentrification of the Bhadralok, the first sacrifice was made to the rural life-style and rural cultural system; the so called folk games formed an integral part of the rural life then. As a result, they were sacrificed at the altar of modernity and reform.

Folk sport is a comprehensive term for a diverse group of games, which were mostly taken up for leisure, entertainment, body and mind building. Since such games were played and patronized usually during some cultural or seasonal fair or gatherings, the game has a

common element of depicting as the "popular culture". For such games the importance of the locality and neighbourhood was very important. In the rural society, earlier before the introduction of television and cell-phones, individual indulge in a social life. For girls the courtyard was the 'communicative space' where girls from different household would spend considerable time. This shared space and shared-time become the source of such folk-games among a given neighbourhood. Each neighbourhod or ethnic groups develop a specific game and in the course of time, it became a part of their cultural life too. As the game moved from the position of past-time to that of entertainment for a greater audience in fair or during some festive seasons; and in no time it must have become a pride identifying a locality or a region more specific to Bengal or even a province of Bengal. If such indigenous sports and games were integral part of a certain rural tradition, it is inevitable that when aristocracy and Zamindar out from such neighbourhood, they were cut off from those sports and in Calcutta. It was their desire to promote a western life-style for themselves, which nib in the bud the development of such folk-games in the neighborhood of Calcutta. At least in that part of Calcutta which was inhabited by the natives could easily patronized such folk games but the middle-class moral policing in the age of reform, cut the rural games and rural cultural from the life of the Bhadralok.

The foreign outdoor games, football and cricket were associated with the mind of indigenous people. It is reasonably clear that football came to India with the East India Company. Football's early pioneers were the officers and men of trading firms and regimental battalions, European professors of educational institutions and naval men who used to play the game at ports, such as Calcutta, Bombay, Madras, and Karachi (Bondhopadhay:2015).The Bengali people adopted the football within their cultural activity. Football became like the 'pathological game' of Bengali people. After adaptation, within limited time native team, 'Mohunbagan' won the Historical I.F.A shield by defeating the British team, and the Mohun Bagan became as the hero of the dream(Nath: 2011). The club represented their identity as the representative of nationalism (Bhatterjee: 2018). The clubs of native state started their game through imitation and became as the medium of reciprocation. From colonial India Football, Cricket and Hockey are discussing from different aspects. Only the positive aspects are describing through the writing of historians, but the negative aspect still now under the lamplight. Because through the adopted games, Bengali reflect their cultural and Social activities, on the other hand, traditional Sports culture had to face various barriers which are the signal of extinction for the near future. History of Sports gains its prosperity in the late twentieth century in Bengal as well as in India. Nevertheless, in India, writing of Sports History was started within the limited area which dealing mainly about the history of Football and Cricket. In 1988, Soumen Mitra through his M.Phil dissertation discussed firstly History of Football in Colonial Calcutta. He published his thesis as the book on the name of 'In search of an identity: History of football in Colonial Calcutta' and discussed Sports as the aspect of nationalism. Ramchandra Guha through his book 'A Corner of a Foreign field: the Indian History of British Sports' discussed the sports politics from different angles another edited book is 'Cricket' deals about the cricket from a different point. After that, the prominent Journalist and historian Boria Majumdar traced on the cricket. His one of the famous book is 'Twenty-two Yard to Freedom' and 'Eleven Gods and a Billion Indian: The on and off the field story of cricket in India and beyond'. In Bengal, another sports Historian is Kausik Bandyopadhyay through his Bengali book 'Khela jokhon Itihas' (When Sports is History) discussed purely how a game became a History? After, he wrote many books and published articles about Indian football and culture. All above the writers, he explains the importance about the modern game. Although, Kausik Bodhoypahy discussed the theory of evolution system, how the traditional games transferred into modern games. But, in the pages of

literature folk games and its importance are totally untouched. As a result, there is not any particular documentation about the traditional game of West Bengal. Lack of documents, writing of folks games of Bengal is very tough.

Before the second half of the nineteenth century the indigenous people India followed their traditional games like Lathi Chora (Throw Stick), Danguli (Play through long pieces of wood), Kit-Kit (Girls famous game), Goli (Marbles or Glass ball), Lattu (Top), Luko-Churi (Hide and seek), Rumal Churi (hanky Thief), Ghuri (Kite Flying) and so many traditional games . But after the second half of the nineteenth century those people bending towards the foreign outdoor games. Therefore, in west Bengal especially Calcutta, history of the folk games is a major lacuna in the field of sports culture. Through this article tried to explain some of the most important extinct traditional folk games of West Bengal and its importance in our society which are Ha-Du-Du, lathichora (Throw stick), Kanamachi, Rumal churi (Hanky Thief),Ghuri Orano (Kite Flying) and Kit-Kit.

Ha-Du-Du:

Growth and development are the biological processes where a child will be a future citizen crossing this stage. The child has to face various problems to become a proper citizen through the biological activities. Physical and mental fitness is the most important factors for being a healthy child. A healthy child is the gift of a healthy nation. All the components of physical fitness and mental health are hidden within the sports. From the early life children are not associates within the organizational games, so, to associate, children have to adopt some methods through their regional traditional games. In Bengal there are many traditional games prevailing in the society, Ha-du-du is the most important among those games. In the rural area of Bengal and in Calcutta, children were involved in their folk game as the age of primary level at the time of precolonial and contemporary of colonial period. Especially this game was favorable within girls under ten to twelve ages. However, ha-du-du and kabadi is well known as the same game in Bangladesh where kabaddi is their national game. In West Bengal, Ha-Du-Du and Kabadi are different games. This game is totally unknown to the new generation who are born and brought up to town and suburban area of Bengal. Some known to this game but not in their eyes or physically practices benefited through the television. In this game boys or girls divided into two groups. Within a limited area, a fixed boundary is selected and rest of the open places where the opponent's teams members are waiting to avoid form the touch and who are in the position of games tried to touch the opponent’s members to reduce one by one. It is not possible to play at least two players in each group. After being alert to the two sides, one enters within the others area in a single breath. Within this breath, if the person who entered to the other parts and touches the opponent's group, after that touch one person will be out from the game who was touched the first bye the entry person. On the other side if the entry person came back without touching any opponent person the next chance will be given, in this same way they will get a limited chance, after completing this limitation opponents group will get this chance. In addition, the player who entered by touched to the opponent’s group’s member but cannot return to his area then he will be out from the game. Here out from the game means actually that is the time he has sent to prison. If their supporting players can out to others then the out players will be eligible to play again

Kanamachi:

Kanamachi is also an important folk game of rural Bengal. This game is more popular among the school children. The folk game of Bengal ‘kanamachi’ is a wonderful game in the rural area. In this game a child will be thief and his or her eyes will be tied with the cloths (called as Blind Person). After that, rest of the children will stay around the blind person. At that

time, the players have to sound 'kanamachi vho vho' (sound of flying of fly) 'jake pabi take choo' (you touch whom you can). Then he (Theif) tries to touch the other friend. If the thief can touch any person he will be the next blind person. However, the rest of his friend touch the blind person time to time. There is no use of tool to play this game, only need a piece of cloth and an open space. Lack of proper place, this game can be playing on the roof of the house or into the room also. After tide both of the eyes, of a particular person, he is turned around several times , so that there is a problem in guiding himself. Then the blind person's work is to find out the others friend. The person or children had running around to safe themselves. The blind person has to continue his work until to touch others. To play this game minimum three players are required. Nevertheless, there are no problems in the games if more than three people. When the game is played the will be peaceful with the happy children.

Dangulli

This is the one of the most popular game among the school boys in rural Bengal and in colonial period Calcutta. From the origin of the game it is clear that this game is conduct by the tools of 1-1.5 feet long piece of wood which is known as Dang (1-1.5 feet long wooden stick with 1-1.5 c.m breadth) and Gulli (It is less than half of the Dang) which is also made of wood in cylindrical shape. 'It is sharpened from both ends like a lead pencil'. A small omission dug on the ground. The length of this hole is about more than four inches with a little depth. Minimum Two or more than minimum boys can associate with this game where they will divide into two groups. The first player places the gulli across the pit and puts his Danda, the primary tools of this game (Wooden Stick) into the pit under the gulli, (little wooden stick) the secondary tools which will be thrown, it is secondary because if the wooden pieces are available than its alternative various type of plastic bottle can be use and holds.. He then pushes the gulli off. The other player or the other group tries to catch the gulli; if he succeeds in catching it, the first player is out and the second player gets a chance to push the gulli in a similar way. However, if the other player fails to catch the gulli, the first player places the danda on the pit and the one of them (others) player throws the gulli on to the danda from the point where the gulli had landed. Even if he succeeds in hitting the danda, the first player is out and it will be the second player's turn to play. If the throw misses the target, the first player places the gulli on the ground but not on the pit and bounces it slightly by hitting one of its ends with his danda; while the gulli is still in the air, he tries to hit it hard with his danda as far as he can, away from the pit. The others player tries to catch it again. Even if the first player misses the chance to hit the gulli while in the air, the first player is out. The distance between the pit and the place where the gulli falls is measured by the length of the gulli and the player gets points correspondingly.(Ghosh.P. 2015)

Kit-Kit:

Due to limited literature resources I am greatly thankful to Pallab Ghosh for his 'Traditional Sports and Games Culture around the West Bengal'. This game is played with a Guti: a broken piece of an earthen pot, about an inch-and-a-half in diameter, or a round flat stone. A rectangle about three yards long and two yards wide is drawn. This rectangle is divided into six squares each about a foot wide. The fourth and the sixth squares are each subdivided into two and these are crossed diagonally from side to side. (Have many other formats) The first player stands before the starting line and tosses her guti into the first square. Then she skips the first square, hopping to square number two and continues hopping up to square six. Then she turns around and hopes back. She stops in square number two, picks up the guti, hops over square one and comes out. She continues playing by tossing the guti in square number

two, three, four and so on in subsequent steps. All the hopping is done on one foot, except for those squares that are divided into two and drawn side by side. She puts both her feet down into the two squares with one foot in each of them. The player must hop over or skip the square where the guti has been placed. A player is declared out if the guti fails to land in the appropriate (Progressively higher) square, or the player steps on a line, or loses her balance while bending to pick up the guti, or puts her other hand or foot down or steps into the square. This game is popular among girls. They play this game during recess at school.(Ghosh: 2015)

Luko- Churi (Hide and Seek) And Rumal Churi

With the Luko-Churi the children are associated from their childhood age. Without any cause children hide themselves from their mother, which is has not adopted but it is their natural habits (Sengupta: 2016). This kind of habits became as luko-churi (Hide and seek game) (Crawford: 2006). Luko-Churi in bengali meaning hide from others (Here a particular person) consciously, not for any dreadful intentional purpose only for entertainment. Children start playing this game at a very early age. Two-to-three-year-old children play this game with their mothers, grandmothers or elders (Sengupta: 2016). A child is asked to close their eyes with the palms of their hands and the mother hides somewhere. Then she calls the child to come and find her. The child runs here and there and everywhere in search of the mother. If the child finds the mother within a limited time, they laugh; if not, they burst into tears. When the mothers sees the child is crying, she comes out, or sometimes when she senses restlessness in the child she partly reveals herself so that it becomes easy for the child to find her. When a child grows up, they find that this game requires more skills when played with a group of their peers. They can be so clever at hiding themselves that the finder roams about, trying to locate the others, following the sounds they make but does not succeed (Ghosh: 2015). It is because by the time the finder reaches the place from where the sound appeared to have come from, the one hiding has already moved from one to another place. The child who covers the eyes of the finder keeps the palms tightly on the finder's eyes, until everyone has gone hiding. Usually the youngest child is chosen to find the older ones (Ghosh: 2015). It is not only for the little children but also the group of teenagers used this game by grouping.

Rumal churi is an outdoor game but it can also be played inside if one has enough room to run around(Thurman: 2005). This game can be played with as many members as present. Out of whom one is the chor (thief). The members playing the game sit in a circle with their eyes closed. The players sing this song three or four times and within this period the chor leaves his hanky (or a small piece of cloth) behind one of the sitting players. When the singing ends, everybody opens their eyes and looks for the rumal behind them. One of them who finds the rumal runs following the chor to catch him. The chor runs around in circle and tries to save himself from being caught and take the vacant seat of the person chasing him or her (with the rumal); if they are caught by the person with the rumal before grabbing the vacant seat, they switch roles. The game turns more interesting when it is played at a fast pace and involves all the participants, so that every time the rumal is dropped behind a new player' (Ghosh: 2015). (The schools girls about 5th -8th standard are associate with games. Due to proper open space and proper opportunities sports losing its glorious past.(Das: 2016)

Dari Bandha:(Rope Tide)

It is not only a game but also an examination of physical power, Fitness, strength and confidential balance where the opposite team could disbalance. Daribandha is another popular game in the villages of Bengal. In this game a field as equally divided with lines keeping equal distance from each other. Players divided into two equal teams or members. To play minimum two players of both side needed to equal, no limitation of maximum players.

One team stands in the starting line outside the field and each of the players of other team stands on each vertical black line facing at least on opponent player. This player can move towards the horizontal line at a limited range. Players standing outside enter into the field one by one and try to pass across the field to the finishing point and have to return to the starting position. Thus, the team wins the game. if any player in the opposite's touches anybody then the game reversed. It demands high level of physical fitness, strength and speed also. In the climax of the game, depend wins and defeats. In school of rural area maximum in the winter season two groups has arranged between teachers and students for this game, which makes a peaceful environment. (Excel:)

Impact on the society:

Not only the above games, including the others games like Lathi Chora(through Stick) Goli(Marbles or glass Ball), Lattu(Top), Ghuri(Kite Flying), Palalpoli, Chara play, Sap-ludo (snake lodo) more than forty regional games which are booth indoor and outdoor games. Sports and games are the integral part of its own culture of every society. The game is an important part of the contesting competitor's intellectual skills and the main ways to show physical and mental strength and artistry. It is true that the diversity of culture, which related its traditional games, helps to conduct the organizational sports. We should develop in the division of organizational sports including to save our diverse identity through the traditional sports. Now days, we are departing from our traditional games and culture. I surveyed on two groups who are associate into sports field from one is rural area and another is urban area within the age 6 - 15 of Keshur the rural area under Paschim Medinipur District, West Bengal about their future aim about sports in near future.

Standard	Age	Associate with	Interested in	Future aims	Traditional Sports
4th Standard	8	Football	Mobile Game	Teacher	Except *Luko churi* don't know any game
4th Standard	7+	Cricket	Carton of Television	Business	Not interested in any Traditional sports
8th Standard	12	Tennis	YouTube	Doctor	Not interested
9th Standard	14+	Mobile Game	Moblie game	Pilot	Only bike racing
6th standard	10	Watch the sports	In play	Teacher	Kite flying
7th standard	12	Cricket	Car Racing in smart Phone	Social wprker	Cycle racing
9th Standard	15	Football	football	Sports person	Not interested
10thStandard	16	Cricket	PUBG game	Cricketer	Not interested
10thStandard	15	Badminton	film	Administrator	Known but not interested

8th Standard	13	Cricket	T.V Serial	Cricketer	Not interested

*Field Survey: August, 2018.

Not only in Rural area, but in town area I surveyed on 110 boys and Girls who are the Students of Bishnupur High School and Kalipark Girls High School, Rajarhat, New Town of Rajarhat area. According one students "My parents pressure me to read and write, in the afternoon I spend my time by watching Kartoon on the Television, and in the holy day , maximum Saturday and Sunday in the afternoon allow me to go sports ground, where I preferred the cricket"(Field Survey). Another Student of class 10th Standard claimed to his parent "what is the future in your sports? it better to send your time on computer which will associate you in your future". Among them 56% students are not associate with any games and sports, 22% students are associated with the Cricket, football, tennis, badminton and others organizational games, 12% students watching the game protect themselves, and 10% students participate with their parents in the morning and evening walk. Though there is little interest in the rural area in traditional game, but in urban and sub-urban area that is out of range. The Sports that originated from ancient times has been elevated to the final phase (Masterson: 1976). Where sports are analyzed as one of the main sources of physical health and mental fitness (Edmunds : 2013). The Greek city-state used the game and sports to create health and physically strong citizen but our society demands from sports economical supports for future not proper future citizen. The purpose of sports expended its area from Anixtey, love, physical and mental fitness, national identity to economics. (Australia Govt).

In the context of cultural hegemony of the colonial state over the Bengali people, it is pathetic to see the extinction of a large number of folk-games, as such games had to give way to the dominant culture of the colonizing masters. Kausik Bandhopadhay in his much discussed book pointed out sports as the 'cultural weapon' of the emerging nation against its domination. (Bondhopadhay: 2006). Here I would like to argue that in an age when the nationalist like Bankim Chandra Chaterjee and Vivekananda were laying the seed of nationalism among the Bhadralok, their argument had been the importance of the nations history, culture and religion. The Bengal revolutionaries preached a new philosophy of nationalism which placed patriotism as a religion, where the motherland is perceive not only as the mother but also as the Supreme Deity. Service to the cause of the motherland was considered by them as the only way to salvation or moksha. It is important to point out that they publicly expressed their deep faith in God and promoted the idea that God was the supreme leader behind the nationalist movement. "The motherland is no other than Divinity itself", declared Aurobindo Ghose, "the Motherland in all her beauty and splendor entitled, Kali, the mother made Aurobindo view resistance from a new angle, as the play of shakti (power). As early as 1893-94, Aurobindo Ghose, in his "New Lamps for old" also put forward a radical philosophy of politics. He demanded freedom openly as the inalienable birth right of India.(Singh: 1970) It is important to point out that he declared that the freedom of India must be won relying on her own limited inner strength and power. That the revolutionaries thought of using the indigenous ideas and indigenous belief system to build up an understanding of patriotism can be argued from the speech of Aurobindo delivered at Jhalakati in Barisal on the 19th June, 1909. He said, Swaraj, is not the colonial form of government nor any form of government. It means the fulfillment of our national life… Our object, our claim is that we shall not perish as a nation but live as a nation… we preach the gospel of unqualified Swaraj(Singh: 1970). Sri Aurobindo's vision of India as a nation happens to be an important part of his social and political philosophy. He worked on the

background of the 19th century Bengal Renaissance which was losing its glamour in the midst of an artificial atmosphere produced by the western educated intelligentsia.

In the 'nation imagined', by the use religious idioms and vocabularies, continues as an integral part of the living history and living culture of the people, here it is indeed intriguing to see how an European game like that of foot-ball can become the 'cultural weapon' against the European power. The revolutionaries used the samitis or secret societies to revive some of the traditional games to build the spiritual strength and physical power. Akharas were organized by them to rebuild the lost cultural spirit. To my understanding they were the 'cultural weapon' to fight the ever soaring domination of the colonial power and atrocities. Through those 'akharas' the youth were able to build their lost confidence and the spirit of social life which was erode by the colonial socio-political system. Akharas, were not only space for organizing and cultivating the lost cultural spirit of the nation or the groups but they were also communicative spaces for mobilization of political sentiments. Such akharas once again created a shared cultural and public space which had become oblivion in the memory of the common man. It was not the gentry or the elites of Bengal who went out to recover their tradition, their culture and their folk-game but the lower middle class who set the tempo for the nationalist movement through the Extremist movement. Within those game rules and regulation the basic cultural ethics of the Bengali was found, as the hierarchy between the teacher and his students made possible there-establishment of the traditional moral and ethical value system. J.A Mangan judged the games, based on the fundamental but complementary relationship of imperialism and games on the question of social development in India (Bondhopadhay: 2015). In modern society, there are many outdoors game but their replacement by our traditional games is threatening to our moral and spiritual life. As the new generation of children grew up on the high tide of western games, which install team spirit no doubt but it takes from them their natural instinct for social and cultural life. If games is part of our soft-culture than the lost of traditional games is definitely the loss of cultural and ethical values for the child. If we are to revive our traditional games and give them that organizational and institutional backing needed for any sports to survive, we are not setting the hands of the clock backward but we are actually setting the clock to work on its own natural system.

Discussion and Conclusion

Since the establishment of British Empire to the twentieth century's first decades Calcutta was the capital as well as the main trading city of British in India. The mercantile nation tried to establish them as the ruler of India by centering the Calcutta. Slowly the merchant became as the ruler. The brilliant nation carry on homogeneous three identity when they came anywhere from their country. It was not only for the British, but the difference was there that other nations did not try to establish this three ideology as their own to the foreign, but British Established. This three concept are firstly; Their Religious, where they went they described their religious thought and its objectives, Secondly; English Language and they tried to implement their language to this particular Nations and Lastly; the most important equipment is their culture which they put into practice where they ruled. (Choudhory: 2018; Higgins : 1962). The natives cultivated the british cultures among this sports culture was the most important. The Badralok Class associated the british culture with the Calcutta societies by imitation the British habits. The british used their sports as their medium of lessiure and entertainment and the Bhadralok class imitated the games and culture and cultivated within themselves. According to Bondhypadhay 'Sports in colonial and post colonial era in Bengal has been closely linked to wider process that have been shaped the society and culture of the reign since twentieth century'(Bondhopadhay: 2015). But the link connected within the

Bhadralok Societies of Calcutta and Britishers. Though All games have certain criteria such as goal, chance, competition, Collaboration, common experience equality, freedom to impact on reality, and depending on the game. (O'Keefe: 2013). 'Behind any sporting event and beyond the emotional complexities of victory and defeat lie deep currents of socio-psychological behavior and politico-ideological apparatuses that are often overlooked (Mitra: 2006). Much of the literature on the relationship between sport and politics has been concerned with the ways in which nation states seek to promote themselves, or simply carry out their business, using sport as a useful and highly visible medium. (Bairner: 2008). To imitation the colonial games in Calcutta two angles had been emerged. It impact that a competition emerged between the natives and the colonial masters who were the driven power of the sports, and secondly was that by adopting the British Sports Culture the Bhadralok Society limited within the limited Share Space. They neglected their traditional games due to cultural Colonialism. It was the cultural hegemony because that was the domination of culturally diverse society by the ruling Class who manipulate the culture of that Bengali society (Lears:1985). Nevertheless the Bengali native people lost their control from their traditional cultural activity, and easily within colonial Calcutta sporting culture came into the share space as bengaleeness . We can get a concept of culture of a nation from their traditional games, not from any organizational borrowed sports. Likewise , to realize the Bengali nation, traditional games of Bengal must comprehend. Not only the describe games but also Golla Chut, hari vanga, chor police, bouchi, lathi chora… those folk games extincted from the calcuttans' cultural activity. In the world communicative space (Roxå: 2002) folks games of Calcutta were unable to erect an identity under colonial rule still now.

REFERENCES

Australia, Governtment of. More than winning; the real value of sport and recreation in western Australia. Australia: Department of Sport and recreation., 2013.

Bairner, A. "Sport, nationalism and clobalization: relevance impact consequences." Hitosubasi Journal of Arts and Science (Hitosubashi University press), 2008: 55-67.

Bandyopadhyay, K. Khela Jokhon Itihas(When Sports is History). Kolkata: Situ, 2006.

—. Sport culture and Nation: Perspectives from indian Football and South Asian Cricket. Delhi: Sage, 2015.

BazarAnanda. 5th January 2018.

Bhattacharya, D. "Socio-Economic Trends in India." In Trends of Socio Economic Change in India: 1871-1961, by M K Chaudhory, 17-34. Shimla: IIAS, 1969.

Bhatterjee, S. "Mohun Bagan –Suchona O Bikas (Mohun Bagan-establishment and Growth);." Mohunbagan Darpon(Reflection of Mohun Bagan). Calcutta: All India Mariners Forum, 2018. 7-12.

Block, N. The Mind as the Software of the Brain, . New York University: New York University Press, 2004.

Chaudhuri.M.K. (2015.(1969)). Trends of socio-Economic Change in India: 1874-1961. Shimla: IIAS.

Das, A. "Women and sports: A new area of empowerment – An ethnographic study in an urban spot in West Bengal; 2016; 3(4)." International Journal of Physical Education, Sports and Health 3, no. 4 (2016): 5-6.

Duttachoudhury, S. Mohunbagan Mohomoy Mohunbagan(1889-2014). calcutta: S Choudhury, 2018.

Edmunds S, Hannah B , Isabella G. Let's get physical ; the impact of physical activityon wellbeing. London: Mental health foundation, 2013.

excel, Surf. surfexcel.com.bd/dirt-is-good/games/traditional-bangladeshi-games.html.

"Field Survey(2018): Keshpur, Paschim medinipur, West Bengal, India."

"Field Survey(2018): Keshpur, Paschim medinipur, West Bengal, India."

"Field Survey.(2018): Bishnupur High School and Kalipark Girls High School, Rjarhat, New Town , Kolkata, Westbengal, India."

Ghosh, P. (2015). "Traditional Sports and Games Culture Around West Bengal." International Journal of Novel Research in Humanity and Social Sciences 2, no. 3 1-5.

Groll, M. Bronikowska, M. Savol, J. (2014). "Cultural Aspects of Traditional Sports and Games;Tfisa Recall." Games of the Past-Sports for today, 1-14.

Higgins.M, Smith.C , Storey.J. The Cambridge Companion to Modern British Culture. The Cambridge University: Cambridge University Press, 2016.

İnce, Evrim. Fragmented Possession: Politics Of Womanhood In Ancient Greece. Istanbu: İstanbul Bilgi University Press, 2014.

Lears, T. Jackson, J. "The Concept of Cultural Hegemony: Problems and Possibilitie." The American Historical Review (Oxford University Press) 90, no. 03 (Jun 1985): 567-593.

Masterson, D W. the ancient greek origins of sports medicine. Salford: University of Salford, 1976.

Mitra, S. In Search Of Identity: History of Football In Colonial Calcutta. Calcutta: Dasgupta, 2006.

N, Crawford V. P. and Iriberri. Fatal Attraction: Salience, Naivete, and Sophistication in Experimental "Hide-and-Seek" Games. San Diego.: University of California, 2006.

N, Sengupta. Immigrant Indian Mothers' Perceptions Of Play And Play's Relationship To Childrearing Goals: A Case Study. Pennsylvania: The Pennsylvania State University, 2016.

Nath, N. History of Indian Football. Kolkata: Reader Service, 2011.

—. History of Indian Football. Kolkata: Reader Service, 2011.

O'Keefe, Paul A. Plass ,Jan. L, Bruce. D, Homer. Jennifer, Case. Elizabeth, O. Hayward, Murphy Stein. " The Impact of Individual, Competitive, and Collaborative Mathematics Game Play on Learning, Performance, and Motivation, Journal of Educatio." Journal of Educational Psychology, 2013: 1050-1066.

Ørnulf, Seippe. "Sports and Nationalism in a Globalized World." International Journal of Sociology, 2017: 56-69.

Roxa, T. "Communicative spaces – A perspective on learning." Herdsa (Lund University), 2002: 574-581.

S.D, Choudhory. Mohunbagan Mohomay Mohunbagan(1889-2014). Calcutta: SDC, 2018.

Singh, K. "Singh, K. (1970). Prophet of Indian Nationalism: A Study of Political Thought of Sri aurobindo Ghosh 1893-1910." International Affairs (.....) 40, no. 1 (1970): Pages 161.

Thurman. J, Herbert. B. Out Door Games for Scouts. canada: Canadian Scouters, 2005.

International Journal of Sport Culture and Science
June 2021 : 9(2)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS.2021.635

Effect of Fasting on The Development of Endurance in High-level Basketball Players

Maamar HENNİ
[1] Physical education and sports, University of Algiers
https://orcid.org/ 0000-0001-9218-000X

Email: hennimaamarhenni@gmail.com

Type: Research Article (Received:03.03.2021– Accepted: 05.07.2021)

Abstract

The aim of this study was to monitor and verify the effect of fasting on the performance of physical endurance capabilities Basketball players

This study followed a descriptive, quantitative research design, We performed tests Wet and dry (on an empty stomach). ½ Cooper's tests and re-tests to assess the tolerability of the same group that was naturally hydrated and dried (fasted). Comparison of different tests during the three periods of the season.

Results for the Half Cooper are more confirmatory and supportive of the first set of outcomes. During the three, we recorded a statistically significant difference between the two hydration states, with a value of P <0.001.

Conclusion: Through this study, we observed the effect of fasting on certain physical abilities of our basketball players. It has been found that the lack of fluids negatively affects the development of their physical abilities. This leads to implementation of customized hydration strategies.

Keywords: Fasting, Endurance, Basketball .

Introduction

The purpose and importance of the research must be stated at the end of the introduction.

The analysis and evaluation of the achievements of human movement is the basic structure of the various sports sciences, as this helps in the formation and selection of new theories, and helps specialists to choose the correct movements appropriate to the circumstances surrounding the athletic achievement in order to achieve high achievements (Reeser, Jonathan, & Roald B, 2017), Since professionals in different mathematical sciences need solid facts to support their decisions regarding correct technique for motor performance, external conditions have a great influence on motor learning and in achieving high mathematical achievements (Zahálka, František, Tomáš, Lucia, & Miloslav, 2017). Fasting is an external factor that can affect an athlete's motor skills and abilities, To understand the effect of fasting on athletic performance, the effect of exercise and training sessions on an athlete's water condition must be evaluated. According to (Guezennec, 2011), sweating can increase significantly during physical exertion (Cheung, 2015), sometimes up to 4 liters / hour in extreme conditions. Thus, if fluid intake does not compensate for fluid loss, this leads to a decrease in physical and mental performance (Sawka, Noakes, & T, 2007).

Knowing that high-ranking athletes devote a lot of time and effort to perfecting their technical movements, physical conditions and tactical preparation, they must not neglect the nutritional aspect, especially water management and water balance, which directly affect performance. In this context, poor water balance management may lead to failure of the athlete due to poor performance (G, Reguieg, Belkad, & Sbaa B, 2018).

Basketball is one of the most popular team sports in the world. Passing, setting, attacking, blocking, etc. can be mentioned as examples of individual basic skills in game creation. They all use different motor skills and abilities such as mobility and swing or different modes of movement in addition to stamina, agility, flexibility and reaction speed (Lehnert, M. Sigmund, P, & Vařeková, 2017), Due to the significant change in the intensity and frequency of basketball-playing activities, with increasing duration of effort and decreasing rest times, the sessions today should be more urgent, especially in physical participation, because athletes must be able to bear the most difficult and comprehensive workloads from the point of view. . Athletic readiness. This volatile aspect of basketball was confirmed by a change of discipline in 2001, the 24 and 8 second rule, 4 periods of 10-minute play and 5 pauses per team. In team sports, an athlete is known to have limited hydration potential. In this case, the athlete should utilize the downtime to rehydrate while planning how much to eat for each occasion (Maughan & Shirreffs, 2010). This is the case with basketball where he has the opportunity to rehydrate within 5 timeouts per team and thus 10 breaks during the match which can be up to 81 minutes according (Travaillant & Comett, 2003), Dehydration for basketball players is very important according (Broad, M., & L., 1996).

The purpose of this article is to answer the main research question, which is whether fasting has an impact on the stamina development of basketball players.

Material and Method:

Research Protocol:

The ethics committee protocol was approved by the Institute of Physical Education and Sports, and the Physical and Sports Activity Laboratory, University of Constantine 2, on 11/11/2016. A total of five male basket ball players from the Institute of Physical Education

and Sports provided their informed consent to participate in the study as volunteers, with the following characteristics:

Table 1: Characteristics of the sample GSP

Age (years)	Weight (kg)	Height (cm)
22 ± 0,72	89.21 ± 7.60	187 ± 6.46

To ensure an athlete is eligible for the study, we have collected a brief medical history from each athlete. None of them reported previous illnesses and no one had complained of pain at the time of the test.

Our study protocol consists of assessing and comparing the strength and endurance of a basketball player in two different states, in the normal state and during fasting, during three different periods of the season, first in the natural state of hydration with the possibility of deterioration during the test as desired and second in the fasting state, restricting deterioration before 6 Hours of exams and during testing until the end of the session, (fasting day).

Hypotheses: We assume that through physical tests conducted on a group of high-ranking athletes during 3 major stages of the season (preparatory, competitive and passing) indicate that fasting affects the process of developing the stamina of a basketball player.

Data collection:

Protocol. The Half Cooper or the 6 Minute Test: The Half Cooper test was used to calculate the Maximal Aerobic Speed (MAS) of each athlete; it indicates the speed which is witness to the capacity of each athlete to oxygenate his muscles during the effort, it is essential to establish the intensities of the effort of the program. of training. The goal is simple, it is to try to achieve or cover the greatest distance in 6 minutes, after a warm-up of 10 to 15 minutes in slow running followed by 2 fast runs of 40 to 50 meters with return throttled on the distance to cool down, then rest for 2 minutes before starting the test, The value of the MAS corresponds to the distance travelled in meters divided by one hundred (D/100).

Analysis of the data:

In the analysis of the data, the arithmetic mean and standard deviation values for the measurement results of each variable were calculated separately and a table was created. The significance between the measurement values of the groups was tested with the Mann Whitney-U test.

RESULTS:

Comparison between the different tests during the 3 periods of the season. For the processing of the data collected, we calculated the arithmetic mean, the standard deviation, the variance and the coefficient of variation. The arithmetic means the sum of the measured values divided by their number it determines, the average value of a series of calculations, The question may arise if the result of the averages is different. This difference can be due to chance as it can be a significant fact.

Table 2. Endurance results

	hydration condition	**fasting**
Period 1	1551	1430,75

Period 2	1613	1411
Period 3	1644	1408

We scored a difference between the Half Cuper (6 min) test results for two cases during the first period because we recorded an average of1551 meters, where the water was normal And1430,75 is dehydrated. During the second period, we also recorded an average of 1613 meters, where the water is usually and 1511 meters suffer from drought. Moreover, the third period observed an average of 1660 m, as it was naturally wet and 1500 m dried. All differences are very large ($p < 0.001$ ***).

As a result of the endurance measurements, the averages of the hydration and dehydrated groups were evaluated. The change in averages between periods is revealed. It was observed that there was achange in the averages.

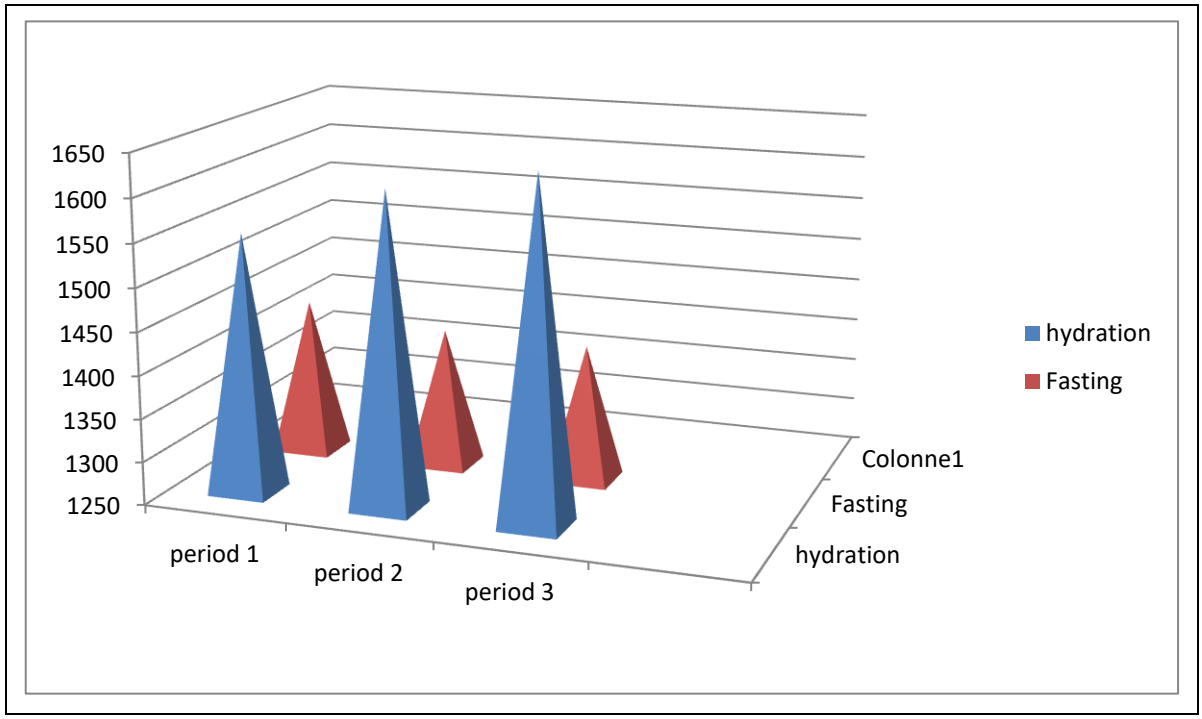


Figure 1. Endurance changes between periods

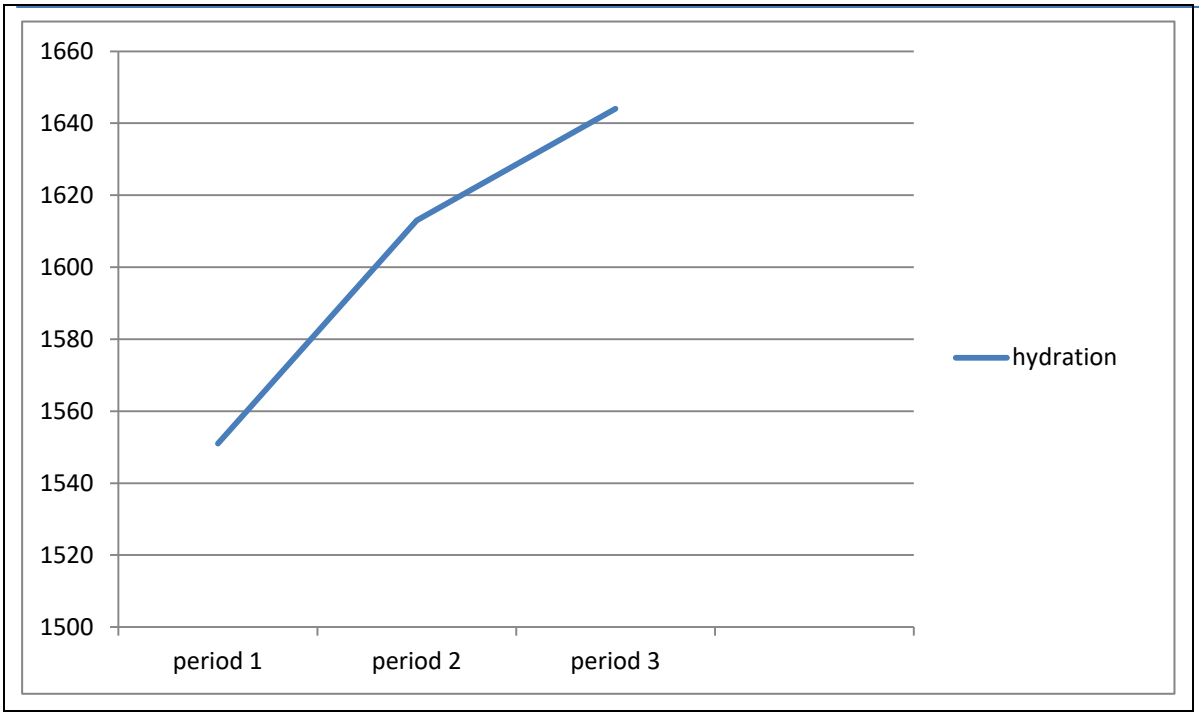


Figure 2. Endurance changes between periods(Hydration)

As a result of the endurance measurements, the average water groups were evaluated. The change in the averages between the periods was detected. A change in the averages was observed. It is a normal condition due to the difference in periods

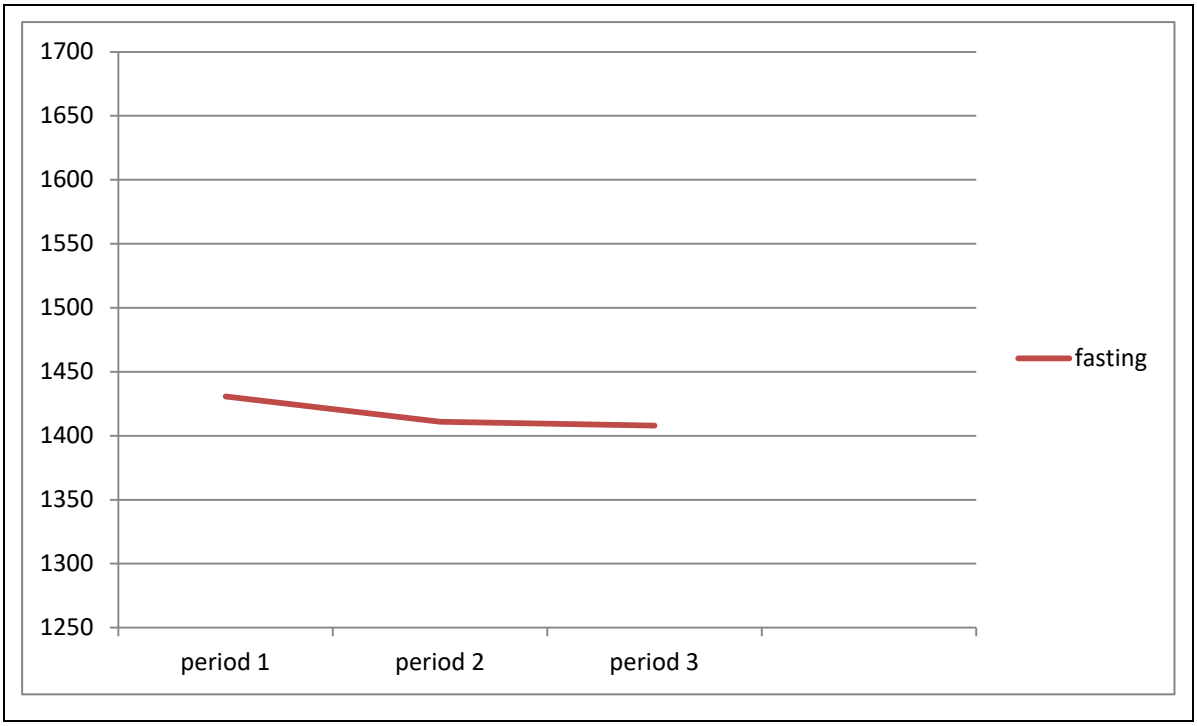


Figure 3. Endurance changes between periods(fasting)

As a result of the endurance measurements, the averages of the fasting groups were evaluated. A change in the averages is observed.A change in the averages between periods, different from the normal state, is detected.

Discussion and conclusion:

The results of the data analysis correlate with the endurance and strength performance of Algerian basketball players, allowing us to make a comparison between the current study and other related work. Thus, the comparison would assess the place given to hydration and its effect on the physical development of basketball.

The majority of authors and researchers report that fasting has a negative effect on physical and intellectual performance, There is no doubt that the exercise of physical exertion during fasting has a certain risk, because when fasting, a lack of energy and fluids arises in the body, which leads to dehydration, and the body enters into stress that may lead to the collapse and damage of the body cells that are built through sport. In this context, , (Hawley & T. D, 1994))) indicates that after 2% of water loss from body mass, our bodies are only functioning at 80% of their capacity. Data from the literature generally shows that fluid deficiency greater than or equal to 2% is detrimental to performance; However, current recommendations are to drink an adequate amount of fluids to reduce dehydration by 2% (Sawka M. N., 2007), (Shirreffs. M, 2011). During fasting for 8-10 hours, the amount of glucogen in the liver decreases and the amount in the muscle decreases by about 50%, without any relationship to physical activity. This decrease in the amount of glucogen causes the amino acids to be converted to sugar.So during our study we were interested in observing the effect of fasting on the various abilities that are very important to the basketball player, which has been an essential feature of the game since we analyzed the game. We found that during a basketball game, the average number of jumps is close to 100, which is a large number and requires proper mathematical preparation. . It is believed that a basketball player is a far cry from having all of his physical, muscular and nervous capabilities when he is suffering from a lack of fluids.

Fasting from water does not allow it to work the same way it does in normal humidity. According to our study, recent research widely agrees with a decrease in performance starting with 2% of fluid loss during fasting. Hence, this confirms our hypothesis but contradicts previous studies, For the Half Cooper test, where we wanted to see the effect of fluid deficiency on basketball players' endurance, the results showed us a very big difference over the three periods and this confirms our hypothesis. However, Professor Goel of the University of Sherbrooke (Canada) believes that low fluid deficiency does not affect endurance

According to (Goulet, 2013), the effect of fluid deficiency on endurance performance is presented by distinguishing two types of protocols: a) A protocol that approaches real racing conditions such as "against the clock";

Keep away from normal competition conditions while maintaining accurate density for as long as possible, In both protocols, endurance performance was compared in subjects who were properly hydrated and who were deficient in fluid due to exertion. The results of this analysis show that under the conditions, post-exercise fluid deficiency improves endurance performance but not significantly (+ 0.09%, P = 0.9) while in the case of the far-from-reality protocol, fluid deficiency reduces performance significantly (1.91% P / 0.05) (Goulet, 2013) .

Our results are somewhat consistent with some of Goulet's (2013) studies. In other words, the main finding of our study reveals that fasting influences to some extent the development of endurance, as confirmed by the results of Juliet's Second Protocol (2013).

Therefore, some things must be taken into consideration and precautions.

Water is one of the essentials for a successful athlete. To reach the top with high results, managing and improving one's water potential must be a source of great concern and concern for all players in the world of sport, namely: athletes, coaches, doctors, physical trainers ... etc. .

Through this study, we observed the effect of fasting on certain physical capacities of basketball players, a somewhat negative effect. It has been found that fasting, to some extent, affects the development of physical abilities of an athlete, as has sometimes been reported by research. Knowing that the results of the tests carried out during our study do not all agree with the data provided by the scientific literature.

Acknowledgment:

I would like to extend my sincere thanks to all those who participated in this study, from the athlete of the Institute of Physical Education and Sports participating for the good application of the tests, and the professors and administrators from the University of Constantine 2 for their assistance.

REFERENCES

Broad, E, M, B, & L, M (1996). Bodyweight changes and voluntary fluid intakes during training and competition sessions in team sports. *International Journal of Sports Nutrition and Exercise Metabolism , 6* (3), 307-32.

Cheung, S, S (2015). Separate and combined effects of dehydration and thirst sensation on exercise performance in the heat. *Scand J Med Sci Sports , 25*, 104.

Reguieg, M., Belkad, A., & Sbaa B, B. (2018). SportingEvents among the Disabled betweenExcellence and Ideal in Motor Performance. *International Journal of Physical Education, Fitness and Sports* , 7(3):66–71.

Goulet, E. D. (2013). Effect of exercise-induced dehydration on endurance performance: evaluating the impact of exercise protocols on outcomes using a meta-analytic procedure. *British Journal of Sports Medicine , 47* (11), 679-686.

Guezennec. (2011). Les boissons de l'effort: bases physiologiques de leurs utilisations et composition. Cahiers de Nutrition et de Diététique. *Cahiers de Nutrition et de Diététique* , 46-53.

Hawley, J. W., & T. D, D. S. (1994). Impaired high-intensity cycling performance time at low levels of dehydration. *International Journal of Sports Medicine , 15* (07), 13-08.

Lehnert, M., M. Sigmund, ,. M., P, L., & Vařeková, ,. R. (2017). Training-Induced Changes in Physical Performance Can Be Achieved without Body Mass Reduction after Eight Week of Strength and Injury Prevention Oriented Programme in. *Biology of Sport* , 34(2):205–13.

Maughan, R., & Shirreffs, ,. S. (2010). Dehydration and rehydration in competitive spor. *Scandinavian Journal of Medicine & Science in Sports* , 40-47.

Reeser, Jonathan, ,. C., & Roald B, B. (2017). *Handbook of Sports Medicine and Science Volleyball.* John Wiley & Sons.

Sawka, M. N. (2007). American College of Sports Medicine position stand. Exercise and fluid. *Medicine and Science in Sports and Exercise , 39* (2), 377-390.

Sawka, M., Noakes, N., & T, D. (2007). Does dehydration impair exercise performance? *Med Sci Sports Exerc , 39* (8), 1209–17.

Shirreffs. M, &. S. (2011). Fluid and electrolyte needs for training, competition, and recovery. *Journal of Sports Sciences , 29* (1), 39-46.

Travaillant, & Comett, G. (2003). Analyse des efforts en basket. . *CEP Dijon. UFR STAPS Dijon Université de Bourgogne* , 1-21.

Zahálka, František, Tomáš, M., Lucia, M., & Miloslav, E. (2017). Kinematic Analysis of Volleyball Attack in the Net Center with Various Types of Take-Off'. *Journal of Human Kinetics* , 58(1):261–71.

International Journal of Sport Culture and Science
June 2021 : 9(2)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS.2021.636

Effect of Graston Soft Tissue Mobilization Technique on Muscular Force

Ertuğrul ÇAKIR[1], Z. İnci KARADENİZLİ [2]
[1]Düzce Üniversitesi, Düzce, Türkiye
https://orcid.org/ 0000-0002-4332-453781
[2] Düzce Üniversitesi, Düzce, Türkiye
https://orcid.org/ 0000-0002-9159-999X

Email: ertugrulcakir@duzce.edu.tr, incikaradenizli@duzce.edu.com.tr,

Type: Research Article (Received:03.12.2020– Accepted: 26.06.2021)

Abstract

Background: The Graston Technique (GT) is a form of manual therapy known as soft-tissue instrument-assisted mobilization and has been recently popular in World of Sport. GT has been used for muscular relaxation and for increasing range of motion (ROM) but when compared with classical stretching techniques GT usage has some advantages like less injury risk, fascial correction effect, less metabolic fatigue. While achieving muscular relaxation and increased ROM, static stretching creates energy expenditure and decreased alpha motor neuron activity. In GT these results are not expected due to its application characteristics. The focus of the article is to determine whether GT application creates muscular inhibition while relaxation of muscle comes out.

Participants: 103 amateur athletes participated the study as 49 people in GT application group (19,6±3 years) and 54 people in control group (19,6±3 years). Antebrachii flexors were targeted as application field. G+1 soft tissue mobilizator and sweeping technique were used for 1 minute on left and right forearms. Before and after application forearm isometric muscle strength was measured using digital hand dynamometer for both groups.

Results: In statistical analyzing IBM SPSS version 22 computer program and Paired Samples t Test were used and wasn't determined any significant difference between application and control group scores.

Discussions: The result that GT has no inhibition effect on muscles after application so it can be used a tool to make athletes having muscle stiffness and spasms prepare competition and training without decrement of muscle force.

Keywords: Graston Technique, Muscular Force, Muscular Inhibition

Introduction

The deviation of physiological and biomechanical parameters like blood lactate level, muscular hypertonicity, decreased range of motion (ROM) in joints, decreased glucose stores etc. should be reverted after training or competitions in Sport. At this point stretching exercises, muscle energy techniques, classical massage etc. are used for recovery of the athletes. Behind that some in these applications are used to prepare the athletes for completions or training sessions to increase motoric functions (Hausswirth, & Mujika, 2012). In recent years the studies determined that muscular fascia is affected negatively after physical effort and should be reverted in term of extensibility and metabolically (Hammer, 2008; Liptan, 2010; Purslow, 2002). The adhesions and collagen disturbances should be eliminated not to effect neuromuscular performance of the athletes (Hammer, 2008; Launder, Compton, McLoda, & Walters, 2014). The muscular fascia composed of collagen fibers, in addition to covering muscle fibers, has afferent receptors and with this feature it started to be accepted as an extension of somatosensory system (Schaefer, & Sandrey, 2012). Especially repetitive motoric movements creates micro inflammations on fascia and results in micro adhesions. After high intensity physical activities compositions of collagen fibers are affected negatively. So in this way neuromuscular coordination weakens (Khan, & Scott, 2009; Bozkus, 2013; Loghmani, & Warden, 2009; Howitt, Wong, & Zabukovec, 2006).

For some sports to prepare joints to competitions is important especially the ones which needs high range of motions. In that scope static stretching exercises are used before competitions or most time after physical activity high intensity to resolve muscular spasms (Portillo-Soto, Eberman, Demchak, & Peebles, 2014; Young, & Elliott, 2001). That method creates metabolic stress on muscles and force decrease before activity pain after activity in training and competitions (Shrier, 2000). For that reason a new method comes out to achieve muscular extensibility without lack of energy expenditure and hypotonicity of muscle.

Graston Technique is a tissue mobilization with an instrument usage which is inspired from Gua-shua that is a tool of Traditional Asia Treatment Approaches. The key point is to move fascia and to create a local warming for muscles to relax. The area which is a target for application determines which kind of GT mobilizator tool will be used. Mobilizator instruments are titanium covered and have different shapes and sizes (Gehlsen, Ganion, & Helfst, 1999; Heisey, & Kingsley, 2016). GT has a mechanical advantage instead of classical massage for relaxing muscles and tissues. GT is done with instruments so to create enough pressure on tissue needs less force than hand usage (Bentley, 2007; Carey, Hammer, & Vincent, 2001; Kim, Sung, & Lee, 2017).

The aim of the study is to determine whether GT would create a decrease on muscular force after application. As it was mentioned before if it is used before physical activity to achieve tissue warming and tissue extensibility for ROM and stiffness, a decrease of muscular force would come out and thus sportive performance could be affected negatively.

Material and Method

Participants

103 amateur athletes (49 for application group, 54 for control group) that have been studying in Duzce University participated to the study voluntarily. All information about the scope of the study was given to the participants before the study. It was told that they shouldn't use any alcohol in 48 hours, make high intensity physical activity in 24 hours and get any food intake in 2 hours before GT applications. The study was approved by Ethics Committee of Duzce University with the number of 2019/35 permission.

Procedure

Tanita SC-330 device was used for body composition (Barbosa, Barros, Post, Waitzberg, & Heymsfield, 2003) and Seca brand Stadiometre for height measurements. For muscle isometric strength measurements a digital hand dynamometer (Takei) was used and Hawk-Grip HG5 tissue mobilizator tool for GT application. In the application and test processes GT was applied on left and right antebrachii volar surface in the boundaries of medial epicondyle, pronator teres muscle lateral inferior border and flexor carpi ulnaris muscle line. The GT application technique was sweeping with 45 degrees inclined to cranial, light pressure, longitudinal touch and one direction for 1 minute. In this application the participants were sit on a chair with their forearms laid on an application table (Carey, Hammer, & Vincent, 2001). For GT application as a lubricant a baby oil was used and as a termination factor of GT application was to have an excessive hyperemia. The participants with allergic reactions were ruled out. All GT applications were carried out to application group by a certificated physical therapist on GT. For isometric muscle strength measurements all participants were sit on a chair with their forearms hanged down near the body. The wrist and elbow were in a neutral position. 3 measurements were taken with the period of 2 minutes and best score was recorded as data (Barut, Demirel, & Kıran, 2008).

Statistical Analysis

The data recorded were evaluated using IBM SPSS version 22 computer program. In the statistical analyzing *p* significance value was determined as below 0.05 and The Paired Simple t Test was used to compare the scores of both groups.

Findings

Table 1. Demographic Characteristics of the Participants

n=103	Body Weight (Kg, ± SD)	Body Height (Cm, ± SD)	Age (Years ± SD)
Application Group(n=49)	65,75±10,8	173,53±8,0	19,6±,3
Control Group (n=54)	70±12,7	175,40±7,3	19,3±1,9

SD: Standard Deviation

Table 2. The Results of Dynamometer Measurements

	n	Min. kg	Max. kg	Mean kg	SS kg	*p*
(AG) Before Application (Right)	49	22	62	43	11	*0.73*
(AG) After Application (Right)	49	23	64	43	10	
(AG) Before Application (Left)	49	21	61	43	9	*0.16*
(AG) After Application (Left)	49	21	63	42	10	
(CG) First Measurement (Right)	54	25	73	45	10	*0.28*
(CG) Second Measurement (Right)	54	24	65	44	9	
(CG) First Measurement (Left)	54	25	67	43	9	*0.28*
(CG) Second Measurement (Left)	54	24	63	43	9	

AG: Application Group CG: Control Group SD: Standard Deviation Min.: Minimum Max.: Maximum $p<0.05$

As seen in Table 2 in application there isn't any significant difference between pre-application and post application strength scores. The same result is available for control group too. So it can be concluded that GT doesn't create any decrease on muscular strength after application.

Discussion and Conclusion

There are enough study about GT to increase muscle extensibility (Moon, Jung, Won, & Cho, 2017; Kim, Jung, & Weon, 2014; Laudner, Compton, McLoda, & Walters, 2014). As it was told for same effect static stretching creates a mono synaptic inhibition on alpha motor neurons with the way of sensorial feedback system by Golgi Tendon Organs (GTO). In GT there isn't any stretching mechanisms activating GTO but even so there a kind of activation of sensorial receptors being on muscular fascia. So a question may come out that is there any alpha motor neuron inhibition created by fascial sensorial receptors. Vardiman et al. hypothesized that GT application pressure brings out some inflammatory mediators in muscle and these results in a decrease on neuromuscular activity (Vardiman, Siedlik, Herda, Hawkins, Cooper, Graham, Deckert, & Gallagher, 2015). After a 7 minutes application session on Gastrocnemius muscle group isokinetic muscular strength test was used and determined no force loss after application. Smuts et al. used hip abductors for testing. After a 2 minutes GT application after exercising he found a fast recovery in the application group (Smuts, 2013). Kim et al. used Quadriceps muscle group and compared effect of the GT application with 2 minutes and PNF techniques on muscular strength (Kim, Sung, & Lee, 2017). He found that PNF created a muscular inhibition but GT created a muscular strength increase on muscles. Burnside et al. used 2 Quadriceps muscles for an exercise period and after every exercise session GT was used to determine whether it would be a positive factor for recovering of muscle (Burnside, 2004). After 4 weeks period of the study he found that there isn't any positive effect on periodic muscular strength achievement. Literature shows no negative effect of GT on muscular strength and it may be hypothesed that the light mechanic pressure of GT application creates a vasodilatation in muscle and dermal tissues. In the application region a increase on viscoelasticity comes out thus collagen fibers holds more water and gains more extensibility (Hawkins, 2017). In this study small muscle groups were targeted for testing and after GT applications muscle strength on antebrachii flexor muscles didn't loose strength (Table 2). It's believed that the study would strengthen the results of other studies and contribute a positive factor for a common GT usage in Sport.

In that scope of the theory and the studies in the Literature GT application is more beneficial than other classical relaxing methods especially before high intensity activities like competitions in Sport. So that new approach should be implemented to avoid tissue injuries in the educational concept.

Conflict of Interest

There is no conflict of interest intellectually or financially.

Funding

No funding to declare.

REFERENCES

Barbosa-Silva, M. C., Barros, A. J., Post, C. L., Waitzberg, D. L., & Heymsfield, S. B. (2003). Can bioelectrical impedance analysis identify malnutrition in preoperative nutrition assessment? *Nutrition*, 19(5), 422-426.

Barut, Ç., Demirel, P., & Kıran, S. (2008). Evaluation of hand anthropometric measurements and grip strength in basketball, volleyball and handball players. *Anatomy*, 2(1), 55-59.

Bentley, B. (2007). Gua Sha: smoothing scrapping out the Sha. *The Lantern*, 4(2), 4-9.

Bozkuş, T. (2013). An evaluation of the relationship between physical activity healthy lifestyle behaviors anaerobic performance muscle strength and sprint performance in folk dancers. International Journal of Academic Research, 5, 151 157.

Burnside, J. F. (2004). Instrument assisted soft tissue mobilization: effect on strength and range of motion. Unpublished Masters Thesis. *Louisiana State University. LSU Digital Commons.*

Carey, T., Hammer, W. I., & Vincent, R. (2001). The Graston Technique Instructional Manual. Indianapolis.

Gehlsen, G. M., Ganion, L. R., & Helfst, R. H. (1999). Fibroblast responses to variation in soft tissue mobilization pressure. *Medicine and Science in Sports and Exercise*, 31(4), 531-535.

Hammer, W. I. (2008). The effect of mechanical load on degenerated soft tissue. *Journal of Bodywork and Movement Therapies*, 12(3), 246-256.

Hausswirth, C., & Mujika, I. (2012). *Recovery for Performance in Sport*. United States: Human Kinetics.

Hawkins, W. (2017). Effects of Instrument Assisted Soft Tissue Mobilization on Physiological and Structural Properties of Human Skeletal Muscle. Unpublished Doctor of Philosophy Thesis. Wichita State University. Health, Sport and Exercise Sciences.

Heisey, C. F., & Kingsley, J. D. (2016). Effects of static stretching on squat performance in division I female athletes. *International Journal of Exercise Science*, 9(3), 359-367.

Howitt, S., Wong, J., & Zabukovec, S. (2006). The conservative treatment of trigger thumb using Graston Techniques and Active Release Techniques. *The Journal of the Canadian Chiropractic Association*, 50(4), 249-254.

Khan, K. M., & Scott, A. (2009). Mechanotherapy: How therapists' prescription of exercises promotes tissue repair. *British Journal of Sports Medicine*, 43(4), 247-251.

Kim, D. H., Lee, J. J., & Sung Hyun You, J. (2018). Effects of instrument-assisted soft tissue mobilization technique on strength, knee joint passive stiffness, and pain threshold in hamstring shortness. *Journal of Back and Musculoskeletal Rehabilitation*, 31(6), 1169-1176.

Kim, D. H., Kim, T. H., Jung, D. Y., & Weon, J. H. (2014). Effects of the Graston technique and self-myofacial release on the range of motion of a knee joint. *Journal of the Korean Society of Physical Medicine*, 9(4), 455-463.

Kim, J., Sung, D. J., & Lee, J. (2017). Therapeutic effectiveness of instrument-assisted soft tissue mobilization for soft tissue injury: mechanisms and practical application. *Journal of Exercise Rehabilitation*, 13(1), 12-22.

Laundner, K., Compton, B. D., McLoda, T. A., & Walters, C. M. (2014). Acute effects of instrument assisted soft tissue mobilization for improving posterior shoulder range of motion in college baseball players. *International journal of sports physical therapy*, 9(1), 1-7.

Liptan, G. L. (2010). Fascia: a missing link in our understanding of the pathology of fibromyalgia. *Journal of Bodywork and Movement Therapies*, 14(1), 3-12.

Loghmani, M. T., & Warden, S. J. (2009). Instrument-assisted cross-fiber massage accelerates knee ligament healing. *Journal of Orthopaedic and Sports Physical Therapy*, 39(7), 506-514.

Moon, J. H., Jung, J. H., Won, Y. S., & Cho, H. Y. (2017). Immediate effects of Graston technique on hamstring muscle extensibility and pain intensity in patients with nonspecific low back pain. *Journal of Physical Therapy Science*, 29(2), 224–227.

Portillo-Soto, A., Eberman, L. E., Demchak, T. J., & Peebles, C. (2014). Comparison of blood flow changes with soft tissue mobilization and massage therapy. *Journal of Alternative Complementary Medicine*, 20 (12), 932-936.

Purslow, P. (2002). The structure and functional significance of variations in the connective tissue within muscle. *Comparative Biochemistry and Physiology*, 133 (4), 947-966.

Schaefer, J. L., Sandrey, M. A. (2012). Effects of a 4-week dynamic-balance-training program supplemented with Graston instrument-assisted soft-tissue mobilization for chronic ankle instability. *Journal of Sports Rehabilitation*, 21(4), 313–326.

Shrier, I. (2000). Stretching before exercise: an evidence based approach. *British Journal of Sports Medicine*, 34 (5), 324-325.

Smuts, J. (2013). The Effect of Instrument Assisted Soft Tissue Mobilization on Iliotibial Band Extensibility and Hip Abduction Strength. Unpublished Masters Thesis. Indiana University. The faculty of the School of Public Health.

Vardiman, J. P., Siedlik J. A., Herda T. J., Hawkins, W. C., Cooper M., Graham Z. A., Deckert J., & Gallagher P. (2015). Instrument-assisted Soft Tissue Mobilization: Effects on the Properties of Human Plantar Flexors. *Journal of Sports Medicine*, 36(03), 197-203.

Young, W., Elliott, S. (2001). Acute effects of static stretching, proprioceptive neuromuscular facilitation stretching, and maximal voluntary contractions on explosive force production and jumping performance. *Research Quarterly for Exercise and Sport*, 72(3), 273-279.

International Journal of Sport Culture and Science
June 2021 : 9(2)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS.2021.637

Examination of Relationship Between Exercise Dependence and Narcissism in Adults

Simara Aybike UÇAR[1], Nimet Haşıl KORKMAZ[2]
[1] İstanbul Gelişim Üniversitesi, İstanbul, Türkiye
https://orcid.org/0000-0002-0618-3528
[2] Uludağ Üniversitesi, Bursa, Türkiye
https://orcid.org/0000-0001-7648-3289

Email: saucar@gelisim.edu.tr, nhasil@uludag.edu.tr

Type: Research Article (Received:27.05.2021– Accepted: 26.06.2021)

Abstract

There are few studies examining the relationship between personality traits and exercise dependence. Narcissism has newly started to attract attention in the field of sports. The purpose of the present study is to examine the relationship between exercise dependence and narcissism in regularly exercising individuals. 271 individuals aged between 18 and 65 years and regularly exercising at least for a year in the sports halls in Bursa participated in the study. In the study, as a data collection tool, the Personal Information Form, the Exercise Dependence Scale and the Narcissistic Personality Inventory were used. It was determined that there was a significant relationship between the participants' narcissism and exercise dependence levels. While a high level of positive relationship was found between time and exercise preference in the sub-scale of continuity in the male participants, it was observed that there was not a statistically significant relationship between the female participants. Personality factor might be contributing to exercise dependence. The increasing level of narcissism might increase the possibility of a person's being exercise-dependent. We expect that the study will draw attention to the personality factor.

Keyword: exercise dependence, narcissism, personality traits, narcissistic personality disorder

Introduction

Studies on narcissism are available in many different fields. New studies are needed especially in the field of sports. Seeing his reflection in the water and falling in love with his reflection, that is to say, himself, and living out his life in the pursuit of this love (himself), which he cannot reach for a lifetime, Narcissus hugs this impossible love of his with a desire to reach it, falls into the water and loses his life, being drowned (Ilkay, 2012). The word of narcissism comes from this story (Dorland, 1986)

A person's loving him/herself is a psychological need. However, a selfish person is interested only in him/herself, but his/her concern for the outside world depends on his/her interests (Fromm, 2004). And abnormal narcissism defined by selfishness starts here. Contrary to what is believed, a selfish person does not love him/herself, but loves a little, even hates him/herself. A person, who hates him/herself and is unhappy, tries to get the satisfaction which s/he has been unable to obtain by force, and pretends to be interested very much (Fromm, 2004).

In his case story which he published in 2005, Wälder described individuals with narcissistic personality as the ones acting superior, being interested thelmselves excessively, feeling different from other people (Uzumcu, 2016)

That negative comments and criticisms coming from the environment do not cause any serious decrease in the individual's self-confidece is accepted as the most apparent feature differing normal narcissism from pathological narcissism (Ozturk, 2004). Pathogical narcissists create opportunities to win others' interest and admiration (for example, exercise behavior) in the name of themselves (Evren,1997). According to Kernberg, these people have an inflated self and continuously wait for the approval and the admiration to come from outside. Individuals with a narcissistic personality have difficulty in deriving pleasure from life and the extent of this pleasure depends on how much they are admired by others (Kernberg, 1975).

Firstly, the pathological narcissism was defined in the DSM III diagnostic criteria book (APA, 1994), then it was examined by taking in hand as Narcissistic Personality Disorder (APA, 2013). The permanent and long-term charaterological features including intensive pathological narcissistic symptoms point to thr narcissistic personality disorder (Uzumcu, 2016). DSM-V defines narcissistic personality disorder as “a common pattern starting at early adulthood and appearing in different contexts, going with arrogance (in reveries or behaviors), the need for being admired and the inability to show empathy” (APA, 2013).

People with narcissistic personality disorder are the ones excessively admiring themselves physically and psychologically, thinking themselves superior, continuously waiting for admiration, interest and approval and believing that they will immediately get special attention wherever they go and that they deserve a superior position. She is or will be the most beautiful, handsome, successful, the brightest person. An individual's self-esteem feeds on interests, admirations, approvals to come from outside (Kohut, 1977).

Narcissists are expert at remaing at the center of attention, love drawing attention and do whatever they can to accomplish this (Twenge, 2010). They do not acknowledge criticism (Ozturk, 2004). Kernberg stated that narcissistic individuals always compare themselves to others and, as a result of this, have difficulty, feel sorrow due to the feeling of inferiority, and feel an intensive and continuous desire to possess what others possess (Genctan, 2003).

According to Kernberg, they do not derive much pleasure from life apart from appreciation they take from others or their own grandiose fantasies and when external interest decreases and they do not feed sources themselves, they feel bored and uneasy (Alperen, 2017).

In narcissistic individuals, the need for evoking admiration has deeply rooted; they try a lot to satisfy this need (Cook, 2018). They can use exercise as a tool for evoking admiration.

Exercise dependence was firstly defined by Veale (1995) as the participation in exercise firstly for fun but then getting out of control and resulting in excessive exercise behavior. However, Sachs (1979) defines exercise dependence as an individual's being dependent on exercise psychologically and physiologically, which is distinguished by the symptoms facilitating exercise diagnosis as a result of 24-36 hours spent without doing exercise. Its psychological and physiological symptoms are listed as anxiety, being unable to stay without moving, feeling of guilt because of being unable to do exercise, aggressiveness, laziness, lack of appetite, being unable to sleep and headache (Adams, 2009).

In their study, Antonio Bruno et al. (2014) demonstrated that certain narcissistic personality traits were related with the risk of exercise dependency.

Narcissistic individuals want to evoke admiration and might use exercise as a tool to meet this need. The purpose of our study is to examine the relationship between narcissism and exercise dependency in adults. The effect of personality on exercise dependency might help to understand individuals' mental states.

Material and Method

Research Model

This research was carried out in relational scanning model. Relational scanning model among the general scanning model types; It is a research model that aims to determine the existence and / or degree of co-change between two or more variables (Karasar, 2005).

Participants

The sample of the study was composed of a total of 271 individuals, 229 male and 42 female, aged between 18 and 65 years and doing exercises at least for a year in the sports halls in Bursa. When the educational levels of the participants were examined, it was observed that 0,7% of them were primary school graduates, 1,5% were secondary school graduates, 18,5% were high school graduates, 68,6% were undergraduates and 10,7% were postgraduates. 67,7% of the participants were working. Moreover, it was observed that 47,5% of the participants had a high level of income, 27,7% had a middle level of income and 24,8% had a low level of income.

Measurement Tools

The individuals desiring to participate in the study were interviewed one by one and, prior to the administration of the scales, they were informed about the study. As the data collection tool, the "Narcissistic Personality Inventory" and the "Exercise Dependence Scale -21" were used. The Narcissistic Personality Inventory was developed by Daniel R. Ames, Paul Rose and Cameron P. Anderson in 2005. The scale was adapted into Turkish and its validity and reliability study was made by Salim Atay (2009). In order to determine the validity of the inventory, factor analysis was applied and, as a result of the factor analysis, it was observed that the questions scattered to 6 factors, namely Exhibitionism, Superiority, Authority, Stake a Claim, Exploitation, Self-Sufficiency, in accordance with the original structure (Atay, 2009).

As the score increases, so does the value of narcissism (Atay, 2009). The "Exercise Dependence Scale-21" composed of 21 items and 7 sub-dimensions, namely tolerance, withdrawal, purpose, inability to control, time, reducing other activities and continuity. The participants' exercise dependence symptoms are evaluated on a six-point Likert type scale scored as "Never (1)", "Rarely (2)", "Sometimes (3)", "Often (4)", "Very Often (5)" and "Always (6)". The scale developed by Hausenblas and Downs (2002a) were administered to the participants in the environment where they did their exercises. Although Hausenblas and Downs (2002a) supported the 7-factor structure put forward in the original study in general, they revealed different factor structures for some sub-dimensions. It was found that 9 items in the "reducing other activities", "time" and "purpose" sub-dimensions included in the original version gathered in a single dimension in this study. When the verbal structures of the items taking place in these 3 factors were taken in hand, it was observed that they included the statements related to exercise preference and exercise time and duration and these factors were named as "time and exercise preference tercihi" (Gurbuz, Asci, 2006). As a result of the evaluation, a high score indicated the presence of more exercise dependence symptoms (Gurbuz, Asci, 2006).

Statistical Analysis

The analysis of the data was made via SPSS 22.0 program. The fitness of the data for normal distribution was tested via the Shapio-Wilk Test. Since normal distribution was not achieved, the analyses were made via nonparametric statistical tests. The between-groups comparisons were made via Mann-Whitney U test. Moreover, the between-variables relationships were examined via Spearman's rank correlation coefficient. Since the data did not distribute normally, the descriptive statistics were given as median (min-max). The statistical significance level was taken as α=0.05. The reliability of the scales were examined via Cronbach's Alpha reliability coefficient for the exercise dependence scale and via Kudor Richardson 21 reliability coefficient for the Narcissistic Personality Inventory.

Bulgular

Findings

Table 1. Findings related to the Sub-Dimensions of Narcissism – Exercise Dependence

Variables	Male			Female			General		
	n	r	p	n	r	p	n	r	p
Narcissism-Time and Exercise Preference	178	0,251 **	0,001	30	0,087	0,648	209	0,204**	0,003
Narcissism-Lack of Control	182	0,118	0,112	31	0,105	0,573	214	0,107	0,120
Narcissism-Effects of Withdrawal	181	0,096	0,197	31	0,161	0,387	213	0,106	0,122

Narcissism-Tolerance	182	0,106	0,153	31	0,179	0,335	214	0,106	0,123
Narcissism-Continuity	180	0,231 **	0,002	31	0,223	0,228	212	0,228**	0,001
Narcissism-Exercise Dependence	172	0,257 **	0,001	30	0,189	0,317	203	0,227**	0,001

*p<0.05, ** p<0.001

The relationship between the participants' narcissism total score and the exercise dependence scale and its sub-scales was shown in the table. It was determined that there was a statistically significant difference between narcissism and exercise dependence. While a weak positive relationship was found between the sub-scale of time and exercise preference and that of continuity in the male participants, it was observed that there was not a statistically significant difference in the female participants.

Table 2. Findings related to Mann-Whitney U Test

		XI	ST	SO	U	Z	P
Exercise Dependence-Tolerance	Female	41	4566,00	111,37	3705,000	-1,973	0,049
	Male	224	30679,00	136,96			

When we looked into the Mann-Whitney U test results of the participants according to the variable of gender, a positive relationship was found only in the tolerance sub-dimension of Exercise Dependence.

Discussion and Conclusion

The purpose of the study is to examine the relationship between the regularly exercising individuals' exercise dependence and narcissism levels.

While a positive relationship was found between narcissism level and the time and exercise preference and continuity sub-dimensions in the male participants, it was observed that there was not a statistically significant difference in the female participants (Table 1). As a result of the literature review, the data supporting this study was encountered. It was determined in the study that the score of the "Time and Exercise Preference" sub-dimension, one of the sub-dimensions of exercise dependence differed significantly (Dogan et al., 2017).

In our study, a statistically significant difference was determined between narcissism and exercise dependence. In a previous study, a significant relationship was found between narcissism and exercise dependence in favor of the male participants (Miller, Mesagno, 2014). Moreover, it can be stated that individuals with developed exhibitionism trait might be inclined to attract attention by using their body. In addition to this, the need for meeting the expectation might lead to showing much interest in exercise and turn imto exercise dependence (Miller, Mesagno, 2014). In another previous study, it was reported that narcissism contributed significantly to body satisfaction in the male participants attending a fitness center regularly (Brown, 2008). In a study made with 150 individuals attending a

fitness center regularly, the narcissism score of the high exercise dependence risk group was found higher (Bruno et al., 2014). High levels of narcissism can be explained as a driving force for exercise (Bruno et al., 2014). Again, in another previous study, which seems to support our study findings, it was concluded that narcissism might be one of the factors underlying exercise dependence (Cook et al., 2018). It can be an ideal method for exercise narcissists to accomplish their narcissistic goals and expectations (David, 1992).

The effect of personality role on exercise is evident. Increasing narcissism level might increase the possibility of a person's becoming exercise dependent. We expect that this study will draw attention to the personality factor, which might have an important effect on the motivation for going on exercising despite the factors of disability, family, etc.

When the descriptive statistics of the demographic characteristics of the sample group participating in the study were examined, it was observed that the male participants were more in number, which makes us consider that it resulted from the fact that, in our country, men prefer sports centers more than women.

*It was produced from Master Thesis

REFERENCES

Adams, J. M. (2009). Understanding Exercise Dependence. J Contemp Psychother.39:231-240.

Alperen, A. (2017). İnfertilite Tanısı Almış Erkeklerin Ruhsallıklarının Narsisizm Ekseninde Projektif Testler Aracılığıyla İncelenmesi (Master's thesis, Sosyal Bilimler Enstitüsü).

Amerikan Psikiyatri Birliği (1994). Dsm-Iv. Mental Bozuklukların Tanısal Ve Sayımsal El Kitabı-Iv. Çeviren: Köroğlu, E, Hekimler Yayın Birliği, Ankara.

Amerikan Psikiyatri Birliği (2013). Mental Bozuklukların Tanısal Ve Sayımsal El Kitabı, Beşinci Baskı (Dsm-V). (Çev. Ed.: E Köroğlu). Ankara, Hekimler Yayın Birliği, 2013.

Brown, J., & Graham, D. (2008). Body Satisfaction İn Gym-Active Males: An Exploration Of Sexuality, Gender, And Narcissism. Sex Roles, 59(1-2), 94-106.

Bruno, A., Quattrone, D., Scimeca, G., Cicciarelli, C., Romeo, V. M., Pandolfo, G., ... & Muscatello, M. R. A. (2014). Unraveling exercise addiction: the role of narcissism and self-esteem. Journal of Addiction, 2014.

Cook, R. H., Griffiths, M. D., & Pontes, H. M. (2018). Personality factors in exercise addiction: a pilot study exploring the role of narcissism, extraversion, and agreeableness. International Journal of Mental Health and Addiction, 1-14.

Davis, C. (1992). Body image, dieting behaviors, and personality factors: A study of high-performance female athletes. International Journal of Sport Psychology, 23(3), 179–192.
Dorland,W. A. Newman (1986), The American İllustrated Medical Dictionary, Press. Sounders Company, 22. Edition, Philadelphia.

Dogan, M., Elçi G., Gurbuz B. (2017) Conference: World Congress Of Sport Sciences Researches, Manisa, Turkey

Evren, C. (1997). Narsisizm. İstanbul: Çetin Matbaası.

Fromm, E. (2004). Sevme Sanatı. İzmir: İlya Yayınevi

Gençtan, E. (2003). Psikodinamik Psikiyatri Ve Normal Dışı Davranışlar. İstanbul: Metis Yayınları.

Gürbüz, B., & Aşçı, F. H. (2006). Egzersiz Bağımlılığı Ölçeği-21'in Egzersiz Katılımcıları İçin Psikometrik Özelliklerinin Değerlendirilmesi-Ön Çalışma. Gazi Beden Eğitimi Ve Spor Bilimleri Dergisi, 11(2), 3-10.

Hausenblas, H. A., & Downs, D. S. (2002a). How Much İs Too Much? The Development And Validation Of The Exercise Dependence Scale. Psychology And Health, 17(4), 387-404.

İlkay, E. (2002). Cerrahpaşa Psikiyatri. İstanbul Üniversitesi, Yayın No: 4326, İstanbul.

Hyman, Steven (1989), Acil Psikiyatri, Çev: İ. Doğaner, A. Ayan, Ege Üniversitesi Basımevi, Bornova, No:133, İzmir.

Karasar, Niyazi. (2005). Bilimsel araştırma yöntemi. Ankara: Nobel Yayın Dağıtım

Kernberg, O. F. (1975). A systems approach to priority setting of interventions in groups. International Journal of Group Psychotherapy, 25(3), 251-275.

Kohut, H.: 1977 Kendiliğin Yeniden Yapılanması, Çev. Oğuz Cebeci.

Miller, K. J., & Mesagno, C. (2014). Personality traits and exercise dependence: Exploring the role of narcissism and perfectionism. International Journal of Sport and Exercise Psychology, 12(4), 368-381.

Öztürk, M. O. (2004). Ruh Sağlığı ve Bozuklukları. Ankara: Nobel Tıp Kitapevleri

Rozenblatt, S. (2002). In Defence Of Self: The Relationship Of Self- Esteem And Narcissim To Aggressive Behavior Long Island University, Psychology, Yayınlanmış Doktora Tezi, Usa.

Salim, A. T. A. Y. (2009). Narsistik kişilik envanteri'nin Türkçe'ye standardizasyonu. Gazi Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 11(1)

Sachs, M.L., Pargman, D. (1979). Running Addiction: A Dept İnterview Examination, Journal Of Sport Behavior, 2,143-155.

Twenge, J. M., Campbell, W. K. (2010). Asrın Vebası Narsisizm İlleti (Ö. Korkmaz, Çev.) İstanbul: Kaknüs Yayınları.

Üzümcü, E. (2016). Büyüklenmeci ve kırılgan narsisistik kişilik özellikleri ile ilişkili faktörlerin Şema Terapi modeli çerçevesinde incelenmesi (Master's thesis, Sosyal Bilimler Enstitüsü).

Üzümcü, E. (2016). Büyüklenmeci ve kırılgan narsisistik kişilik özellikleri ile ilişkili faktörlerin Şema Terapi modeli çerçevesinde incelenmesi (Master's thesis, Sosyal Bilimler Enstitüsü).

Veale, D. (1995). Does Primary Exercise Dependence Really Exist? In J. Annett, B. Cripps, & H. Steinberg, Exercise Addiction: Motivation For Participation İn Sport And Exercise (Pp. 1–5). Leicester, Uk: British Psychological Society.

International Journal of Sport Culture and Science
June 2021 : 9(2)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS.2021.638

Investigation of Injury Anxiety in Amateur Football Players

Mustafa DEMİR[1]
[1]İstanbul Gelişim Üniversitesi, İstanbul, Türkiye
https://orcid.org/0000-0001-7625-9965

Email: mudemir@gelisim.edu.tr

Türü: Review Article (Alındı: 17.03.2021 - Kabul: 27.06.2021)

Abstract

The aim of this study is to examine the injury anxiety of football players in terms of demographic variables. In line with this purpose, A team of football players (n = 190) of football clubs (93 teams) in Istanbul province and operating in the Istanbul Super Amateur League in the 2019-2020 season participated in the study. In order to measure the injury anxiety of football players, "Sports Injury Anxiety Scale" was developed by Rex and Metzler (2016) and adapted into Turkish by Caz, Kayhan, and Bardakçı (2019), and a personal information form created by the researcher were applied. Kolmogorov-Smirnov and Shapiro Wilk's tests were used to test the conformity of variables to normal distribution. Team footballers (n = 190) of football clubs (93 teams) located in Istanbul province and operating in the Istanbul Super Amateur League during the 2019-2020 season participated in our study. As a result, 119 of 190 football players had previous sports injuries and 69 of them had surgical intervention. A significant difference was found in the total score of sports injury anxiety and the letting down ımportant others sub-dimension according to the injury status of football players. According to the results of sports injury anxiety, it was observed that the anxiety level of losing social support was high in the 21-25 age group where the participants were intense. It is observed that the anxiety levels of the injured football players are higher in the sports injury anxiety and disappointment sub-dimension compared to the non-injured players.

Anahtar Sözcükler: football, soccer, sports injury anxiety, sports anxiety, sports injury.

Introduction

Sports injuries become a serious problem with the spread of sports exercises in social life and the increase in the number of participations. Sports injuries are a very important life event, and they are quite common and undesirable (Williams & Andersen, 2007). Among the sports branches, football is a branch of sports that is played with great interest all over the world and where sports injuries are common (Uğur et al., 1999).

All health problems related to sports participation, which are used in the classification of the disabled by the World Health Organization (WHO) and based on the concept of impairment, are expressed as sports injuries (WHO, 2001). In other words, sports injuries are etiologically defined as the deviation of the structure caused by energy transfer or loss of body functions during sports participation (Timpka et al., 2014). Sports injuries include situations that occur when the endurance limits are exceeded as a result of the whole or a part of the body encountering more than normal force (Erol & Karahan, 2006).

Anxiety is a kind of feeling of fear, uneasiness felt by individuals in the face of events that individuals do not know the cause of but regard as dangerous and threatening (Özgül, 2003). Anxiety usually occurs when one or more of the excitements such as the feeling of failure, sadness, distress, fear, and tension come together. The symptoms of anxiety in behavior are in the form of changing from excessive excitement and activity to lethargy. Fear, irritability, excessive anger, disgust, fatigue, muscle aches, and mental complaints are the most common symptoms of anxiety (Akandere, 1997). On the other hand, anxiety in the sports environment indicates the negative psychological reaction to stress resulting from task performance performed under pressure (Cheng et al., 2009).

An athlete can be fully recovered physically, but their mental state says they are not ready to return, leading to negative assessments of their physical abilities (Maddison & Prapavessis, 2005). The new life that emerges due to the recovery of athletes after the treatments can cause the joy of recovering from sports injuries on the one hand, and the possibility of re-injury, on the other hand, the emergence of dual thoughts such as the possibility of re-injury (Mankad et al., 2009). Given the concern about physical recovery after injury, one of the biggest hurdles athletes have is the fear of re-injury. However, some athletes experience high levels of anxiety while others experience low levels of anxiety. Some researchers have stated that athletes with high anxiety levels experience more injuries (Ivarsson & Johnson, 2010).

An athlete who has sports injury anxiety; may be affected by the injury history, the severity of the previous injury, the amount of time passed after returning to sports, and various other injury-related factors (Smith & Smoll, 1990). Aydoğan (2014) stated in his study that the anxiety levels of athletes increased after injury and after treatment, and Özder (2010) stated in his study that athletes were most worried about losing their athletic abilities when they were injured.

In sports that involve physical contact, the majority of which are team sports, there may be anxiety about falling back in sportive competition due to being away from the team as well as injury (Kaçoğlu et al., 2018). Therefore, the study aims to examine the injury anxiety of football players in terms of demographic variables. The information obtained from this study reveals the results about the injury anxiety levels of football players according to socio-demographic variables.

Material and methods

The aim of this study is to examine the injury anxiety of football players in terms of demographic variables. In this direction, the causal comparison method, one of the quantitative research designs, was used. Data were collected using the questionnaire technique. In order to measure the injury concerns of football players, the "Sports Injury Anxiety Scale" developed by Rex and Metzler (2016) and adapted into Turkish by Caz, Kayhan, and Bardakçı (2019), and the personal information form created by the researcher were used. With this method; sports injury anxiety levels of amateur football players; it was analyzed comparatively in terms of age, training experience, position, injury experience variables.

The universe of the research; The A-team players of the football clubs (93 teams) located in the city of Istanbul and taking part in the Istanbul Super Amateur League in the 2019-2020 season. The sample of the study, on the other hand, consists of 190 football players determined by a simple random method. After the participants were informed about the study, participation in the study was conducted voluntarily. When the responses to the scales were examined, a total of 190 questionnaires were evaluated because there were no incomplete or incorrect questionnaires.

In line with the purpose of the study, the survey technique was used as a data collection method. Personal information form and sports injury anxiety scale were applied to the participants. After the participants were informed about the study, participation in the study was carried out voluntarily.

Sports Injury Anxiety Scale

As a data collection tool, the "Sports Injury Anxiety Scale" developed by Rex and Metzler (2016) and adapted into Turkish by Caz, Kayhan, and Bardakçı (2019), and the personal information form created by the researcher were used. This scale consists of six sub-dimensions and 19 items. These dimensions are ‘’loss of athleticism", ‘’being perceived as weak", "experiencing pain", "letting down ımportant others", ‘’loss of social support", "re-injury" 'is. There is no negative (reverse) item on the scale scored in the five-point Likert type (1: strongly disagree - 2: disagree - 3: undecided - 4: agree - 5: strongly agree).

The Cronbach α internal consistency coefficient for the Sports Injury Anxiety Scale is 0.870. According to this value, it is seen that the scale has high internal consistency and thus high reliability. Same way; The Cronbach's α coefficient was 0.876 for "letting down important others factor, 0.812 for loss of social support factor, 0.780 for experiencing pain factor, 0.724 for loss of athleticism factor, 0.645 for being perceived as a weak factor, and 0.608 for re-injury. As a result of the analysis, the model fit index values were $\chi 2$ / df = 1.909, (<3.0); GFI = 0.928 (> 0.90); IFI = 0.942 (> 0.90); CFI = 0.941 (<0.95) and RMSEA = 0.049 (<0.05).

Results

Tablo 1. Socio-Demographic Characteristics of the Participants

	Variables	Frequency	Percent
Age	16-20	55	28,9
	21-25	81	42,6
	26-30	34	17,9
	31 and over	20	10,5
Training Experience	1-5 years	15	7,9

	6-10 years	93	48,9
	11-15 years	55	28,9
	16-20 years	23	12,1
	21-25 years	4	2,1
Position	Goalkeeper	21	11,1
	Defense	66	34,7
	Midfield	77	40,5
	Attack	26	13,7
Injury Status	Yes	119	62,6
	No	71	37,4
	Total	**190**	**100,0**

According to the demographic characteristics of the participants, when Table 1 is examined, 28.9% of the volunteers are in the 16-20 age range, 42.6% in the 21-25 age range, 17.9% in the 26-30 age range, 10% 5 of them are 31 years old and over. According to their training experiences, 7.9% had training experiences of 1-5 years, 48.9% had training experiences of 6-10 years, 28.9% had training experiences of 11-15 years, 12.1% had training experiences of 16-20 years and 2.1% had a training experience of 21-25 years. According to the position, 11.1% are goalkeepers, 34.7% are defense, 40.5% are midfield and 13.7% are attacking players. While 62.6% of the participants had experienced an injury, 37.4% had not.

Tablo 2. Descriptive analysis of participants' responses to the sports injury anxiety scale

Sub-dimensions	N	Min	Max	Mean±Ss
Loss of Athleticism	190	1,00	5,00	2,18±1,01
Being Perceived as Weak	190	1,00	5,00	2,10±1,15
Experiencing Pain	190	1,00	5,00	3,13±1,03
Letting Down Important Others	190	1,00	5,00	2,66±1,13
Loss of Social Support	190	1,00	5,00	2,21±1,11
Re-injury	190	1,00	5,00	3,07±1,04
Total	190	1,00	4,26	2,58±1,04

When Table 2 is examined, the average of the multidimensional Sports Injury Anxiety sub-dimension of the participants is 2,18 ± 1,01, the average of the being perceived as weak sub-dimension is 2,10 ± 1,15, the average of the experiencing pain sub-dimension is 3,13 ± 1,03, the average of the letting down important others sub-dimension was 2,66 ± 1,13, the average of the loss of social support mean 2,21 ± 1,11, the average of the re-injury sub-dimension mean was 3,07 ± 1,04 it has been determined.

Tablo 3. Evaluation of sports injury anxiety levels according to the age of the participants

	Age	N	Rank Avg.	sd	X^2	p	diff.
Loss of Athleticism	16-20[1]	55	96,35	3	1,346	,718	-
	21-25[2]	81	90,78				
	26-30[3]	34	102,21				
	31 and over[4]	20	100,88				
Being Perceived as Weak	16-20[1]	55	98,36		1,355	,716	-
	21-25[2]	81	90,35				
	26-30[3]	34	101,29				
	31 and over[4]	20	98,63				
Experiencing Pain	16-20[1]	55	99,25		5,974	,113	-

	21-25[2]	81	87,01			
	26-30[3]	34	95,75			
	31 and over[4]	20	119,15			
Letting Down Important Others	16-20[1]	55	84,52	4,681	197	-
	21-25[2]	81	95,22			
	26-30[3]	34	106,59			
	31 and over[4]	20	107,98			
Loss of Social Support	16-20[1]	55	81,14	6,146	105	-
	21-25[2]	81	100,34			
	26-30[3]	34	98,49			
	31 and over[4]	20	110,32			
Re-injury	16-20[1]	55	92,61	5,709	127	-
	21-25[2]	81	88,57			
	26-30[3]	34	114,74			
	31 and over[4]	20	98,83			
Total	16-20[1]	55	87,98	6,679	083	-
	21-25[2]	81	89,83			
	26-30[3]	34	109,65			
	31 and over[4]	20	115,07			

When the sports injury anxiety scale is examined according to the age variable of the participants in Table 3, there is no statistically significant difference between the mean scores of the sub-dimensions of loss of athleticism, being perceived as weak, experiencing pain, letting down important others, loss of social support, re-injury ($p > 0.05$). However, it was found that the total value of the sports injury anxiety scale was close to the difference (0.083). When the mean ranks are examined, it is seen that the sports injury anxiety increases as the age of the participants' increases.

Tablo 4. Evaluation of sports injury anxiety levels according to the training experience of the participants

	Training Experience	**N**	**Rank Avg.**	**sd**	**X^2**	**p**	**diff.**
Loss of Athleticism	1-5 years	15	77,50	4	5,448	,244	-
	6-10 years	93	92,18				
	11-15 years	55	97,79				
	16-20 years	23	108,46				
	21-25 years	4	134,13				
Being Perceived as Weak	1-5 years	15	74,13		6,154	,188	-
	6-10 years	93	97,04				
	11-15 years	55	94,48				
	16-20 years	23	111,63				
	21-25 years	4	61,00				
Experiencing Pain	1-5 years	15	111,07		2,532	,639	-
	6-10 years	93	94,06				
	11-15 years	55	89,66				
	16-20 years	23	104,15				
	21-25 years	4	101,00				
Letting Down Important Others	1-5 years	15	99,33		3,932	,415	-
	6-10 years	93	89,05				
	11-15 years	55	97,45				
	16-20 years	23	113,20				
	21-25 years	4	102,63				
Loss of Social Support	1-5 years	15	70,63		9,422	,051	-
	6-10 years	93	88,31				

	11-15 years	55	108,12			
	16-20 years	23	109,46			
	21-25 years	4	102,25			
Re-injury	1-5 years	15	75,67	5,090	,278	-
	6-10 years	93	95,01			
	11-15 years	55	97,12			
	16-20 years	23	111,54			
	21-25 years	4	66,75			
Total	1-5 years	15	78,40	7,778	,100	-
	6-10 years	93	90,49			
	11-15 years	55	97,39			
	16-20 years	23	122,35			
	21-25 years	4	95,75			

In Table 4, when the sports injury anxiety scale is examined according to the training experience variable of the participants, there is no statistically significant difference between the mean scores of sub-dimensions of loss of athleticism, being perceived as weak, experiencing pain, letting down important others, loss of social support, re-injury (p>0,05). On the other hand, in the loss of social support sub-dimension, there is a relationship close to a significant difference (0.051). As the training experience increases, the loss of social support increases, except for those who are 21-25 years old.

Tablo 5. Evaluation of sports injury anxiety levels according to player positions of the participants

	Position	**N**	**Rank Avg.**	**sd**	**X^2**	**p**	**diff.**
Loss of Athleticism	Goalkeeper	21	106,45	3	1,487	,685	-
	Defense	66	97,35				
	Midfield	77	90,91				
	Attack	26	95,56				
Being Perceived as Weak	Goalkeeper	21	111,10		3,147	,370	-
	Defense	66	94,55				
	Midfield	77	89,64				
	Attack	26	102,65				
Experiencing Pain	Goalkeeper	21	115,83		6,767	,080	-
	Defense	66	83,54				
	Midfield	77	97,45				
	Attack	26	103,67				
Letting Down Important Others	Goalkeeper	21	120,40		7,908	,058	-
	Defense	66	84,49				
	Midfield	77	94,84				
	Attack	26	105,27				
Loss of Social Support	Goalkeeper	21	94,38		,614	,893	-
	Defense	66	95,46				
	Midfield	77	93,35				
	Attack	26	102,87				
Re-injury	Goalkeeper	21	106,81		2,583	,461	-
	Defense	66	87,51				
	Midfield	77	97,95				
	Attack	26	99,40				
Total	Goalkeeper	21	113,48		5,412	,144	-
	Defense	66	86,58				
	Midfield	77	93,98				
	Attack	26	108,12				

In Table 5, when the sports injury anxiety levels of the participants are evaluated according to the positions of the participants, there no statistically significant difference was found (P <0.05). On the other hand, a correlation close to a significant difference is observed in the letting down important others (0.058) and experiencing pain (0,080) sub-dimensions. In both sub-dimensions, it was determined that the anxiety level average of goalkeepers and attackers was higher than defense and midfield players.

Tablo 6. Evaluating the sports injury anxiety levels according to the injury status of the participants

	Injury Status	N	Rank Avg.	Rank Sum	U	p
Loss of Athleticism	Yes	119	96,18	11446,00	4143,00	,822
	No	71	94,35	6699,00		
Being Perceived as Weak	Yes	119	98,68	11742,50	3846,50	,293
	No	71	90,18	6402,50		
Experiencing Pain	Yes	119	97,99	11660,50	3928,50	,416
	No	71	91,33	6484,50		
Letting Down Important Others	Yes	119	101,74	12107,50	3481,50	**,041***
	No	71	85,04	6037,50		
Loss of Social Support	Yes	119	96,97	11539,00	4050,00	,628
	No	71	93,04	6606,00		
Re-injury	Yes	119	101,41	12068,00	3521,00	,054
	No	71	85,59	6077,00		
Total	Yes	119	101,97	12134,50	3454,50	**,036***
	No	71	84,65	6010,50		

In Table 6, when the sports injury anxiety scale was examined according to the injury status variable of the participants, it was found that there was a significant difference in the sports injury anxiety total scores and the letting down important others sub-dimension (p <0.05). It is seen that those with injuries have higher levels of sports injury anxiety and letting down important others compared to those who do not. In addition, in the re-injury (0.054) sub-dimension, there is a relationship close to a significant difference. In this sub-dimension, it was determined that those who had injury had higher scores than those who did not. There was no statistically significant difference in the sub-dimensions of loss of athleticism, being perceived as weak, experiencing pain, loss of social support, and re-injury (p> 0.05).

Discussion and Conclusion

Athletes who suffer from sports injuries have psychological conditions that cause anxiety such as re-injury, failure to perform the desired performance, and loss of social support. In this study, the sub-dimensions of sports injury anxiety were examined in line with the variables we identified.

When the sports injury anxiety sub-dimension scores were compared by age, no statistically significant difference was found between the sub-dimensions average scores. However, the total value of the sports injury anxiety scale was found to be close to the difference. When the mean of ranks is examined, it is seen that injury anxiety increases as the age of the participants' increases. Çetindemir & Cihan (2019) could not find a significant relationship when they examined the age variable of athletes in terms of injury anxiety. Although the

relationship between age and injury anxiety was examined in another study dealing with this issue, no risk factor was found (Egermann et al., 2003).According to Karabulut and Sevde (2019), the level of state anxiety decreases as the biological age increases. Another study shows that as the age increases, the anxiety of letting down important others increases (Yalçınkaya et al., 2020).

Although there is no significant difference between the training experience sports injury anxiety sub-dimensions, there is a relationship close to the significant difference in the loss of social support sub-dimension. loss of social support increases as the training experience increases (except those for 21-25 years). We can say that the reason for the low anxiety level in those with 21-25 years of training experience is that the athletes are at the end of their sports life and do not have anxiety for the future. Some studies found that the training experience of athletes in different branches does not affect their anxiety levels (Bingöl vd., 2012; Atasoy et al., 2018). In contrast to this study, Budak et al. (2020) found that, in terms of the duration of the training experience of athletes, those who did sports for 9 years had higher anxiety of re-injury than those who did sports for 3-4 and 5-6 years. Besides, Kayhan et al. (2019), according to the training experience variable of the participants, it was determined that the average of being perceived as weak sub-dimensions of those who do sports for 4 to 6 years is higher than those who do sports for 10 years or more.

When the sub-dimensions of sports injury anxiety were examined according to the positions of the football players, close to a significant differences relationship was observed in the letting down important others and experiencing pain sub-dimensions. In both sub-dimensions, it was determined that the anxiety level average of goalkeepers and attackers was higher than defense and midfield players. Çetindemir & Cihan (2019) stated that there was no significant difference between the scores obtained by the athletes according to the position variable they played when they examined the scores they got from the injury anxiety scale. In this sense, Yıldız (2009), on the other hand, could not detect a significant difference in the statistical evaluation of the groups formed according to the positions played by the players and the status of injury.

It is observed that the players who experienced injuries had higher levels of sports injury anxiety and anxiety of letting down important others than those who did not. In addition, in the re-injury (0.054) sub-dimension, there is a close relationship with a significant difference. In this sub-dimension, it was determined that those who had injuries had higher scores than those who did not. In their studies supporting our study, Tanyeri (2019) and Aksoy (2019) stated that athletes who had previous sports injuries experienced re-injury anxiety. Unver et al., (2020) stated that athletes who did not experience sports injuries have high being perceived as weak and loss of athleticism, while those who have sports injuries have high experienced pain. Also, another study states that athletes who suffered injuries before the 1992 Winter Olympics continue to be concerned about whether they will be able to regain their former performance despite being well-trained (Petitpas & Danish, 1995).

As a result, when we examine the findings, it is seen that the anxiety of injury increases as the age of the athletes' increases, while the increase in the loss of social support as the training experience increases (except those for 21-25 years) draws attention. We can say that the reason for the low anxiety level in those with 21-25 years of training experience is that the athletes are at the end of their sports lives and do not have anxiety for the future. According to the results obtained according to the positions, it was determined that the letting down

important others and experiencing the pain of the goalkeeper and attackers was higher than that of the defense and midfield players. One of the striking results is that football players with injuries have higher levels of sports injury anxiety, letting down important others, and re-injury anxiety compared to those who do not.

All these results show that injuries and psychological factors negatively affect the performance of athletes. Therefore, sports clubs should get support from sports psychologists to increase the performance of athletes.

REFERENCES

Akandere M., 1997. Effect of sports in elimination of anxiety observed in the university youth, Unpublished doctoral thesis, Marmara University, Health Sciences Institute, İstanbul.

Aksoy D., 2019. Examining the state and trait anxiety levels after treatment in sports injuries, Journal of Physical Education and Sport Sciences, 21(2), 89-96.

Atasoy M., Karabulut E. O., & Var L., 2018. The research on the negative evaluation anxiety of taekwondo players by different variables, Turkish Journal of Sport and Exercise, 20(3), 158-162.

Aydoğan Z., 2014. Psychological changes in athletes during injury and after treatment, Master's thesis, Ankara University, Health Sciences Institute, Ankara.

Bingöl H., Çoban B., Bingöl Ş., & Gündoğdu C., 2012. Determine the anxiety level of national team taekwondo athletes before matches who studied at universities, Selçuk University Journal of Physical Education and Sport Science, 14 (1),121–125.

Budak H., Sanioğlu A., Keretli Ö., Durak A., & Barış Ö. Z., 2020. The effects of sports injury on anxiety, Kilis 7 Aralık University Journal of Physical Education and Sport Sciences, 4(1), 38-47.

Caz Ç., Kayhan R. F., & Bardakçı S., 2019. Adaptation of the sports injury anxiety scale to Turkish: validity and reliability study, Turkish Journal of Sports Medicine, 54(1), 52-63.

Cheng WK., Hardy L., & Markland D., 2009. Toward a three-dimensional conceptualization of performance anxiety: Rationale and initial measurement development, Psychology of Sport and Exercise, 10(2), 271-278.

Çetindemir A., & Cihan H., 2019. Examination of young footballers injury anxieties according to their team status (Amateur-Professional) and Positions, Journal of Sports Education, 3(2), 52-57.

Egermann M., Brocai D., Lill C. A. & Schmitt H., 2003. Analysis of injuries in long-distance triathletes, international journal of sports medicine, 24(04), 271-276.

Erol B., & Karahan M., 2006. Sports injuries in children, Türkiye Klinikleri J Pediatr Sci, 2(4), 89-97.

Ivarsson A., & Johnson U., 2010. Psychological factors as predictors of injuries among senior soccer players. A prospective study, Journal of Sports Science and Medicine, 9(2), 347.

Kaçoğlu C., Atalay E., & Turhan B., 2018. Assessing the kinesiophobia and depression status at return to sport following sport-related injuries in contact and non-contact sports, Turkish Journal of Sports Medicine, 53(2), 067-075.

Karabulut E. O., & Sevde, M. V., 2019. Competition performance of state and trait anxiety of taekwondo players and its relationship with injury status, The Journal of Turkish Sport Sciences, 2(1), 47-54.

Kayhan R. F., Yapıcı A., & Üstun Ü. D., 2019. Investigation of the injury anxiety of female athletes according to various variables, Sportif Bakış: Spor ve Eğitim Bilimleri Dergisi, 6(1), 276-287.

Maddison R., & Prapavessis H. A., 2005. Psychological approach to the prediction and prevention of athletic injury, Journal Sports Exerc Psychol, 27(3), 289-310.

Mankad A., Gordon S., & Wallman K., 2009. Perceptions of emotional climate among injured athletes, Journal of Clinical Sport Psychology, 3(1), 1-14.

Özder R., 2010. Examination of injury and the association between injury and injury anxiety among male pentathletes participated in world military pentathlon championship, Master's thesis, Gazi University, Health Sciences Institute, Ankara.

Özgül F., 2003. State and trait anxiety of the students in Cumhuriyet University School of Physical Training and Sports, Master's thesis, Cumhuriyet University, Health Sciences Institute, Sivas.

Petitpas A., & Danish S. J., In S. M., Murphy (Ed.), 1995, Caring for Injured Athletes, Sport Psychology Interventions (s. 253- 306). Champain III: Human Kinetics.

Rex C. C., & Metzler J. N., 2016. Development of the sports injury anxiety scale. Measurement in Physical Education and Exercise Science, 20(3), 146-158.

Smith R.E., & Smoll F.L., 1990. Sports performance anxiety: handbook of social and evaluation anxiety, New York, 417-454.

Tanyeri L., 2019. Investigation of injury anxiety in different branches athletes, OPUS International Journal of Society Researches, 13(19), 577-591.

Timpka T., Jacobsson J., Bickenbach J., Finch C. F., Ekberg J., & Nordenfelt L., 2014. What is A Sports Injury?, Sports Medicine, 44(4), 423-428.

Uğur M., Can S., & Şenel K., 1999. The effect of the muscle power and the hand preference on injurıes in various sport branches. Journal of Physical Education and Sport Sciences, 1(1), 1-4.

Ünver Ş., Şimşek E., İslamoğlu İ., & Arslan H. 2020. Investıgatıon of injury anxiety levels of athletes in university teams, Journal of Physical Education and Sport Sciences, 14(3), 400-410.

Williams J. M., Andersen M. B., 2007. Psychosocial antecedents of sports injury and interventions for risk reduction, In G. Tennebaum and R.C. Eklund (Eds.), Handbook of sport psychology (3rd ed., pp. 279-403), Hoboken, NJ: Wiley.

World Health Organization, 2001. International classification of functioning, Disability and Health (ICF), 28-66, Geneva: World Health Organization.

Yalçınkaya A., Demirci M., ve Kızılyar N. G., 2020. Investigation of anxiety levels in sports injuries of physical education and sports school students, Bozok International Journal of Sport Science, 1(1), 43-51.

Yıldız M, 2009. Investigating/making a study about frequency of getting injured and causes at the sportsmen at the amateur sporting clubs in Afyonkarahisar, Master's thesis, Afyon Kocatepe University, Health Sciences Institute, Afyonkarahisar.

International Journal of Sport Culture and Science
June 2021 : 9(2)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS.2021.639

Physical Activity and Healthy Food Preference in Turkish Preschool Children

Fatma İlker KERKEZ[1], Derya SAKALLI[2]
[1]Muğla Sıtkı Koçman Üniversitesi, Muğla, Türkiye
https://orcid.org/0000-0002-5485-1834
[2] Muğla Sıtkı Koçman Üniversitesi, Muğla, Türkiye
https://orcid.org/0000-0001-9039-9905

Email: fatmakerkez@mu.edu.tr, deryasakallii@gmail.com

Type: Research Article (Received:11.01.2021– Accepted:26.06.2021)

Abstract

Increased inactivity and unhealthy eating habits in children are worrying. It is important to determine food preferences to help children gain healthy eating habits and physical activity preferences to keep them away from inactivity. This study aimed to investigate physical activity and healthy food preferences of 48-60 months old Turkish children by age, gender, and BMI. In this study, a cross-sectional survey method was used. A total of 177 Turkish children (95 boys-82 girls) from three different preschools in Muğla city centre participated in the study. After measuring height and weight of the children, BMI values were calculated. Activity cards containing 12 pictures of energetic and sedentary activities were used to determine the children's physical activity preferences. To determine healthy food preference, different food cards were prepared for breakfast and dinner. Each card contains 20 images of healthy and unhealthy foods. Data were collected through face-to-face interviews. During these interviews, these cards were shown to the children and asked to choose four different foods for breakfast and dinner separately. Data were analysed with descriptive statistics, Kruskal-Wallis and Mann Whitney-U Test. To BMI values, it was found that 5.1% of children were underweight, 67.8% were healthy, 14.7% were overweight, 12.4% were obese. When food preferences were examined, no statistically significant difference was found between healthy food preferences and gender (U:38323.000; p:0.850), BMI (X^2: 1.843; p:0.606), and age (U:2882.000; p:0.850). More research is needed on how children's food preferences are shaped and the factors affecting these preferences.

Keywords: preschool, food, child, preference, health

Introduction

Nutrition is an essential requirement for humans to reach their growth and development potentials, to be protected from diseases, and to lead a high-quality life (Arlı et al., 2017). It is seen as the most important factor affecting growth in the first five years of people's life (Karaağaoğlu & Samur, 2017). Nutritional patterns and food preferences are determined in these years (Black & Hurley, 2007). Children learn what, when, and how much food to eat by experiencing food directly and observing the eating behaviours of others (Birch, Savage & Ventura, 2007).

According to the literature, biological tendencies influence children's food preferences and aversions but they are also alterable (Ventura & Worobey, 2013). Repeated exposure to a certain food facilitate the acceptance of that food. Babies who taste various foods accept new nutrients more easily than those who are fed uniformly. This shows the importance of providing a variety of foods starting from the early period of one's life (Kabaran, 2017).

Food intake above or below normally required levels leads to many problems. One of these problems is obesity. According to the Global Burden of Disease [GBD] report, a total of 107,7 million children were found to be obese in 2015 (GBD, 2017). Mavrovouniotis (2012) states that children today spend 400% less energy than their peers 40 years ago and they are 40% less active compared to children 30 years ago. There is a lot of evidence that obesity and overweight among children are established at an early age and are associated with adverse health consequences (Lindholm, 2019). Therefore, tackling obesity during this period of their lives is very important to reduce life-long risks and to protect health (Lanigan, Tee & Brandreth, 2019). But, even today, only a few countries use standard treatment to prevent overweight and obesity in the preschool years (Ek et al., 2019) and there is need for strategies to reduce obesity in preschool children (Ball, Savu & Kaul, 2019). Another problem seen in this period is malnutrition (Mother Child Education Foundation [ACEV], 2017). It is one of the main causes of death and disability worldwide and it leads to developmental problems (such as being short for their age or weak for their height) in children. Apart from obesity and malnutrition, some of the eating disorders observed in children are picky eating, neophobia, dislike of certain food groups, and not eating enough (Cooke, Higgins & McCrann, 2017). Picky eating behaviours have the potential to have an adverse effect on nutrient consumption, diet quality, normal growth, and future health outcomes in children (Kermen & Aktaç, 2018).

Food preference, which is the main determinant of eating behaviours in children (Guthrie, Rapoport & Wardle, 2000) plays an important role in determining the eating patterns, eating habits, and diet quality that can continue during adulthood (Faith, 2010). Getting a child to adopt healthy eating habits in preschool period can provide the right and balanced nutrition throughout the life of that child (Arlı et al., 2017). Healthy eating during this period reduces the risks of obesity, cardiovascular diseases, cancer, and other chronic diseases, and also helps the children gain healthy eating habits (Karaağaoğlu & Samur, 2017). Children should receive nutritional education in order to correct their wrong eating habits like skipping breakfast and to choose healthy foods for meals (Kabaran & Mercanlıgil, 2013). Learning prevention is more important than coping with the consequences of epidemics and prevention depends on the implementation of health education programs and healthy habits in life (Minossi & Pellanda, 2015). A nutrition education program increases nutritional knowledge scores of preschool children and positively changes their food preferences (Başkale & Bahar, 2011). Sigman-Grant et al., (2014) state that after education, three to five-year-old preschool children have increased level of recognition of healthy foods and their food preferences change. For this reason, healthy eating education should start during the preschool period as behaviours

form during this period. Children who receive proper nutrition education with right methods in this period will later become healthier adults (Akder, Meseri & Çakıroğlu, 2018).

In addition to the increasingly sedentary and screen-oriented lifestyle, unhealthy eating habits in children are worrying. Given that weight gain happens when the energy consumption exceeds its use, it is vital to understand the source of food preferences in order to contribute to weight control (Benton, 2004). It is necessary to determine children's food choices to prevent obesity and to bring healthy eating habits (Kabaran & Mercanlıgil, 2013). Furthermore, factors that determine nutritional behaviour should be understood to promote healthy nutrition (Brug et al., 2008). According to Holub and Musher-Eizenman (2010), although eating behaviour begins to develop in early childhood, there is little information on nutritional traits of preschool children and studies on food intake among preschool children are relatively rare (Parizkova, 2009). Therefore, this study aims to investigate the healthy food preferences of Turkish preschool (48 to 60-month-old) children.

Method

Research design: This study used cross-sectional survey method, one of the descriptive research methods. Descriptive research methods are studies made to collect data to determine specific characteristics of a group (Büyüköztürk et al., 2016). Cross-sectional studies take place at a time point or in a short period of time. These studies provide a 'snapshot' of the result and its associated properties at a given time (Levin, 2006).

Research Sample: The population of the study consists of 4 to 5- years-old children attending preschool in Muğla city centre. Convenience sampling method was used in the study. The purpose of this method is to include everyone who wants to sample. The participant discovery process continues until the specified sample size is reached (Ural & Kılıç, 2006). Families of children were sent parents informed consent form and only children whose parents gave consent were included in the study. A total of 177 Turkish children (95 boys, 82 girls) aged between 48 to 60-months (56.14±5.6 months) from three different preschools in Muğla city centre participated in the study after their parents' permission obtained. Information about the research sample is given in Table 1.

Table 1. Characteristics of the Participants

School	Month		Total	Gender	
	48	60		Boy	Girl
A	18	31	49	23	26
B	4	26	30	17	13
C	35	63	98	55	43
Total	57	120	177	95	82

Research Instruments and Procedures

Height – Weight – BMI measurements: Researchers measured children's height and weight one by one under the supervision of a teacher in an area designated by the school principal. During the measurements, children were brought to a normal anatomical position. For measuring height and weight, researchers used a standard measuring rod and a portable scale. Weight measurement was done in light clothing and without shoes. For height measurement, researchers asked the children to rest their back and heels against a wall. Body mass index (BMI) was calculated using the formula (kg) / (m^2). For calculating children's BMI weight categories, z score cut-off values (underweight: < -2SD, overweight :> + 1SD, fat (obese): > + 2SD) were used for each age according to the World Health Organization (WHO, 2007). BMI weight categories of children are presented in Table 2.

Table 2. BMI Weight Categories

	Underweight		Healthy		Overweight		Obese		Total
	Girl	Boy	Girl	Boy	Girl	Boy	Girl	Boy	
N (%)	3 (1.7)	6 (3.4)	57 (32.2)	63 (35.6)	13 (7.3)	13 (7.3)	9 (5.1)	13 (7.3)	177
Total	9 (5.1)		120 (67.8)		26 (14.7)		22 (12.4)		%100

Activity Card: The activity preferences of the children were determined through the activity card, which was inspired by the pictures used in the study of Yörüsün et al., (2017). There are 8 energetic (to play ball, ride a bicycle, jump rope, dance, swim, run, do sport, go to park) and 4 inactive (to read book, play computer games, sleep, watch TV) activity pictures on the card.

Food Preference Cards: To determine healthy food preferences of children, researchers prepared food cards, each with 20 pictures of healthy and unhealthy foods for breakfast and dinner. The researchers were inspired by the visuals used in the study of Yörüsün et al. (2017). This method is used by some studies on nutritional knowledge and preferences of children in national (Kerkez, 2018; Yörüsün et al., 2017) and international literature (Zeinstra et al., 2007; Slaughter & Ting, 2010; Carraway-Stage et al., 2014; Sigman- Grant et al., 2014). Healthy and unhealthy foods for breakfast and dinner are presented in Table 3.

Table 3. Healthy and Unhealthy Food for Breakfast and Dinner

Breakfast		**Dinner**	
Healthy	**Unhealthy**	**Healthy**	**Unhealthy**
Sausage egg skillet	Cornflakes	Fish	Hamburger
Boiled egg	Turkish bagels	Ayran	Spaghetti
Cucumber	Tea	Grilled chicken	Fried potatoes
Orange juice	French fries	Green beans	Pizza
Cheese	Bread with chocolate	Yoghurt	Baklava
Olives	Turkish pancake	Soup	Rice pilaf
Honey	Bread	Grilled meatballs	Cola
Milk	Pastry	Chickpeas with meat	Bulgur pilaf
Butter	Turkish fried bread	Fruit	Stuffed green pepper
Tomato	Cake	Kebab	Split aubergines with meat filling

For breakfast, if a child chose the healthy foods (egg, milk, cucumber, olives, etc.) 10 points were given for each food that they chose; but if they chose unhealthy foods (bread with chocolate, cake, Turkish fried bread) they would get no points. For dinner, if they chose healthy foods (buttermilk, fish, vegetable dish, yoghurt etc.) 10 points were given for each food; but if they chose unhealthy ones (hamburger, baklava, pizza, etc.) no point was given. The total score obtained from the breakfast or dinner food cards ranges between 0 and 40 points. The healthy food preference score is obtained from the sum of the scores from the breakfast and dinner cards. Healthy food preference score ranges from 0 to 80 points.

After the approval of the Ethics Committee and the District National Education Directorate, the researchers followed the below procedures in order. First, they visited preschools and met their principals to provide information about the research. After that, they sent informed consent forms for parents and descriptive forms to the families through classroom teachers in these preschools. Then, they initiated the data collection phase.

The researchers measured height and weight of each student participating the research. After that, they showed the breakfast and the dinner food cards to the children in order and asked them to choose four foods that they wanted to eat. During the selection, the children were asked to tell what the food was and whether or not they knew that food. If the children misunderstood what the food was, they would be told what the food actually was, and that

they were allowed to make another choice if they wanted to. Interviews with each child lasted an average of 10 minutes.

For data analysis, due to the non-normal distribution of data researchers used descriptive statistics tests, Kruskal Wallis Test, and Mann-Whitney U Test.

Results

When the physical activity preferences of children were examined, it was determined that their first preference was energetic activities with 83.1%. It was found that the most preferred energetic physical activities were swimming (32.2%) and cycling (15.8%). On the other hand, the most preferred sedentary activities were found to be sleeping (5.6%) and watching TV (4.5%).

Table 4. U-Test Results of Healthy Food Preference Scores According to Gender Variable

Gender	n	Mean (sd)	Mean Rank	Sum of Ranks	U	p
Boys	95	42.52 (15.5)	88.34	8392.00	38323.000	0.850
Girls	82	42.56 (14.3)	89.77	7361.00		

As can be seen in the Table 4, as a result of the non-parametric Mann Whitney-U test performed to determine the significance of the difference between gender and healthy food preference scores, there was no significant difference between gender and healthy food preference (U: 38323.000, p>0.05).

Table 5. Healthy Food Preference Score Difference According to BMI Weight Categories

Variable	BMI Groups	n	Mean (sd)	Mean Rank	X^2	sd	p
Healthy Food Preference Score	Underweight	9	36.60 (13.2)	70.50	1.843	3	0.606
	Healthy	120	43.41 (14.9)	91.66			
	Owerweight	26	41.92 (15.2)	87.83			
	Obese	22	40.90 (15.4)	83.43			

Table 5 includes the results of Non-Parametric Kruskal Wallis-H Test, which was applied to define the significance of the difference whether healthy food preference scores and BMI weight categories. According to this, a significant difference is not found between healthy food preference scores and BMI weight categories (X^2: 1.843, sd:3, p>0.05).

Table 6. U-Test Results of Healthy Food Preference Scores According to Age Variable

Age	n	Mean (sd)	Mean Rank	Sum of Ranks	U	p
48 months	57	40.0 (15.0)	79.56	4535.00	2882.000	0.850
60 months	120	43.7 (14.8)	93.48	11218.00		

The nonparametric Mann Whitney-U test was used to determine the significance of the difference between healthy food preference scores and age. To Table 6, there is no significant difference between healthy food preference scores and age (U: 2882.000, p>0,05).

Discussion and Conclusion

The purpose of the study was to investigate the physical activity and healthy food preferences of 48 to 60 month old Turkish children and to determine the difference of food preferences according to age, gender, and BMI.

Studies examining the relationship between gender and healthy food preference have found different results. Lytle et al. (2000) found that trends in food consumption and eating habits over time were extremely consistent between boys and girls. Perez-Rodrigo et al. (2003) reported that boys and girls had a similar nutritional pattern in their study, which examined fruit and vegetable preference score by gender in children and young people. De Lira-García,

Bacardí-Gascón, and Jiménez-Cruz (2012) observed no difference in food preferences according to gender. Similarly, Wardle et al. (2001) stated that four to five-year-old girls liked vegetables more than boys, but there was no gender difference in the meat and fish, dessert, or fruit groups. As stated in Table 4, this study found no statistically significant difference in healthy food preferences by gender ($p > 0.05$). Contrary to these findings, Cooke and Wardle (2005) revealed that boys preferred fatty and sugary foods, meat, processed meat products, and eggs, whereas girls preferred fruits and vegetables. In other words, they found that compared to boys, girls prefer healthier foods. Also, Hare-Bruun et al. (2011) found that 8 to 10 year-old boys generally prefer less healthy foods than girls in this age group. In another study, Aslam and Durrani, (2018) revealed that both adolescent boys and girls prefer fast food compared to different food groups. In addition they found a statistically significant difference in favor of men in terms of fast food preferences. Caine-Bish and Scheule (2009) reported that food preferences differed between genders. According to them, girls preferred fruits and vegetables whereas boys preferred meat, fish, and poultry dishes. A study conducted with children aged 6 to 12 by Kimura et al., (2014) found significant gender differences. The indices reflecting food interest or fat preference were significantly higher in boys than girls. In their study with adolescents, Kabaran and Mercanlıgil (2013) determined that girls gave higher scores to vegetables than boys who gave higher scores to sausage, pastrami, doner/iskender kebab, lahmacun, soda drinks, and energy drinks than girls.

As seen in Table 5, this study found no statistically significant difference between the healthy food preference scores of children according to BMI weight categories ($p > 0.05$). According to Worobey et al. (2005), the recommended daily amount of energy for a four-year old girl with low activity is 1310 calories; for an active five-year-old boy it is 1658 calories. In this case, overweight and obese children in the sample consume more energy than they need. The lack of difference in food preferences according to BMI weight categories shows that children can distinguish between healthy and unhealthy foods. Studies examining the relationship between BMI and healthy food preference and between gender and healthy food preference reveal different results. Similarly, to this study, a study conducted by Gregory, Paxton, and Brozovic (2010) found no correlation between a child's BMI and eating behaviour. A study conducted with children aged two to five found no significant relationship between BMI and total energy intake from beverages (LaRowe, Moeller & Adams, 2007). Also, Byrne et al., (2018) found no correlation between food intake and BMI z score. On the other hand, intelligent selection of food and nutrient components and appropriate food intake patterns are said to be important for the prevention of childhood obesity. To this, vitamin B and drinks sweetened with sugar increase the risk of obesity (Huang & Qi, 2015). Guerrero et al., (2016) emphasized that consumption of more soda and fast food was associated with higher average BMI growth. LaRowe et al., (2007) found that dietary quality was different in terms of the beverage drinking habits of children aged between two and five and 6 and 11, but that BMI was significantly associated with beverage drinking habits of children aged between 6 and 11. Another study found eating behaviours of children to be related to BMI z score (Vollmer et al., 2015). De Lira-García et al., (2012) found that children at high risk of overweight and obesity preferred foods high in sugar and fat as well as energy-dense foods. These differences among the findings obtained from various studies are thought to be due to the characteristics of the groups whose data are collected. In this study, the administrators of the schools that participated in the research stated that children in their schools were constantly informed about healthy nutrition. This nutrition education could be the reason why there is no statistically significant difference between genders and BMI weight categories in healthy food preference.

To table 6, the study found no statistically significant result in healthy food preferences according to age groups ($p > 0.05$). Zarnowiecki et al., (2011) reported that five to six-year-old children know healthy food correctly and that this could be measured. Holub and Musher Eizenman (2010) reported that there was a positive relationship between the age of children and the number of correct answers they gave to food groups in the study, which they conducted on nutritional information according to age and gender in three to six-year-old children. Similarly, Author (2018) noted that nutritional recognition levels were generally high in 4 to 5-years old children and the nutritional recognition score increased with age. Similar to the results of current study, Kimura et al., (2014) stated that there was no difference between food preference and age in seven to nine and 10 to 12-years-old age groups of children. However, unlike these findings another study found that fast food and sweet consumption (sweetened beverages, fast foods, salty snacks, and sweets) was positively associated with the age of children (Nasreddine et al., 2019). Cooke and Wardle (2005) reported that there were age-related differences for food preferences in the fatty/sugary, fruit, fish, and dairy categories. eat. The lack of a statistically significant difference in this study may be due to the fact that the children were asked which food they preferred to eat, not because the children did not know whether the food was healthy or not.

The study has some limitations as it has not examined the relationship of children's healthy food preferences with factors such as parents' nutritional habits or infant feeding methods. There is need for further studies to determine the factors affecting children's food preferences. Also, more research involving family and preschool institutions should be conducted to shape the nutritional habits of preschool children in a healthy way. It is very important to provide education on healthy eating habits to families and preschool institutions in preschool period. The administrators of the schools participating this research stated that children were constantly given information about healthy nutrition. However, since children in this age group cannot easily reach food on their own, whether overweight and obese children consume excess energy at home or at school can be checked.

*This article is orally presented at the II. World Congress of Sport Sciences Researches (WCSSR-2019)

REFERENCES

Akder RN, Meseri R, Çakıroğlu FP (2018). Nutrition education for school-aged children. Journal of Ankara Health Sciences 7(2): 1-10.

Arlı M, Şanlıer N, Küçükkömürler S, Yaman M (2017). Anne ve çocuk beslenmesi: Pegem Atıf İndeksi.

Aslam I, Durrani AM (2018). A cross sectional study on food preferences among adolescents in schools of Aligarh city. International Journal of Applied Home Science 5(4): 805-810.

Ball GD, Savu A, Kaul P (2019). Changes in the prevalence of overweight, obesity, and severe obesity between 2010 and 2017 in preschoolers: A population -based study. Pediatric Obesity 14(11): e12561.

Başkale H, Bahar Z (2011). Outcomes of nutrition knowledge and healthy food choices in 5- to 6-year-old children who received a nutrition intervention based on Piaget's theory. Journal for Specialists in Pediatric Nursing: JSPN 16(4): 263-279.

Benton D (2004). Role of parents in the determination of the food preferences of children and the development of obesity. International Journal of Obesity 28(7): 858-869.

Birch L, Savage JS, Ventura A (2007). Influences on the development of children's eating behaviours: from infancy to adolescence. Can J Diet Pract Res 68: S1-S56.

Black MM, Hurley KM (2007). Helping children develop healthy eating habits. In: Tremblay RE, Barr RG, Peters RDeV and Boivin M (eds) Encyclopedia on Early Childhood Development. Montreal, Quebec: Centre of Excellence for Early Childhood Development; pp.1-10

Brug J, Kremers SP, Van Lenthe F, Ball K, Crawford D (2008). Environmental determinants of healthy eating: in need of theory and evidence. Proceedings of the Nutrition Society 67(3): 307-316.

Büyüköztürk Ş, Çakmak EK, Akgün ÖE, Karadeniz Ş, Demirel F (2016). Bilimsel araştırma yöntemleri: Pegem Akademi.

Byrne R, Zhou Y, Perry R, Mauch C, Magarey A (2018). Beverage intake of Australian children and relationship with intake of fruit, vegetables, milk and body weight at 2, 3.7 and 5 years of age. Nutrition & Dietetics 75(2): 159-166.

Caine-Bish NL, Scheule B (2009). Gender differences in food preferences of school -aged children and adolescents. Journal of School Health 79(11): 532-540.

Carraway-Stage V, Spangler H, Borges M, Goodell LS (2014). Evaluation of a pictorial method to assess liking of familiar fruits and vegetables among preschool children. Appetite 75: 11-20.

Cooke L, Higgins C, McCrann Ú (2017). Managing common feeding difficulties in toddlers and pre-school children. Paediatrics and Child Health 27(8): 366-370.

Cooke LJ, Wardle J (2005). Age and gender differences in children's food preferences. British Journal of Nutrition 93(5): 741-746.

De Lira-García C, Bacardí-Gascón M, Jiménez-Cruz A (2012). Preferences of healthy and unhealthy foods among 3 to 4 year old children in Mexico. Asia Pacific Journal of Clinical Nutrition 21(1): 57-63.

Ek A, Nyström CD, Chirita-Emandi A, Tur JA, Nordin K, Bouzas C ..., Saez M (2019). A randomized controlled trial for overweight and obesity in preschoolers: the More and Less Europe study-an intervention within the STOP project. BMC Public Health 19(1): 945.

Faith M (2010). Development of child taste and food preferences. The role of exposure. In Agras WS (eds) The Oxford Handbook of Eating Disorders. Oxford University Press, pp.137-147.

Global Burden of Disease (GBD). 2015 Obesity Collaborators (2017) Health effects of overweight and obesity in 195 countries over 25 years. New England Journal of Medicine 377(1): 13-27.

Gregory JE, Paxton SJ, Brozovic AM (2010). Maternal feeding practices, child eating behaviour and body mass index in preschool-aged children: a prospective analysis. International Journal of Behavioral Nutrition and Physical Activity 7(1): 55.

Guerrero AD, Mao C, Fuller B, Bridges M, Franke T, Kuo AA (2016). Racial and ethnic disparities in early childhood obesity: growth trajectories in body mass index. Journal of Racial and Ethnic Health Disparities 3(1): 129-137.

Guthrie CA, Rapoport L, Wardle J (2000). Young children's food preferences: a comparison of three modalities of food stimuli. Appetite 35(1): 73-77.

Hare-Bruun H, Nielsen BM, Kristensen PL, Møller NC, Togo P, Heitmann BL (2011). Television viewing, food preferences, and food habits among children: a prospective epidemiological study. BMC Public Health 11(1): 311.

Huang JY, Qi SJ (2015). Childhood obesity and food intake. World Journal of Pediatrics 11(2): 101-107.

Kabaran S (2017). How can Early Life Flavor Experiences Affect Food Preferences? Journal of Current Pediatrics 15(1): 38-46.

Kabaran S, Mercanlıgil SM (2013). Assessment of the Children's Nutrition Habits, Food Preferences and Obesity Status. Journal of Nutrition and Dietetics 41(2): 115-123.

Karaağaoğlu N, Samur GE (2017). Anne ve çocuk beslenmesi: Pegem Atıf İndeksi.

Kerkez, Fİ (2018). 4-5 Yaş Çocukların Sağlıklı Besin Bilgisinin İncelenmesi. e-Uluslararası Eğitim Araştırmaları Dergisi, 9(3), 47-59.

Kermen S, Aktaç Ş (2018). Picky Eating and Risk Factors in Children. The Journal of Current Pediatrics16(3): 85-102.

Kimura S, Endo Y, Minamimae K, Kanzaki S, Hanaki K (2014). Gender differences in childhood food preference: evaluation using a subjective picture choice method. Pediatrics International 56(3): 389-394.

Lanigan J, Tee L, Brandreth R (2019). Childhood obesity. Medicine 47(3): 190-194.

LaRowe TL, Moeller SM, Adams AK (2007). Beverage patterns, diet quality, and body mass index of US preschool and school-aged children. Journal of the American Dietetic Association 107(7): 1124-1133.

Levin KA (2006). Study design III: Cross-sectional studies. Evidence-Based Dentistry 7(1): 24- 25.

Lindholm A (2019). Overweight and Obesity in Preschool Children: Early Risk Factors and Early Identification PhD Thesis. Halmstad University, Halmstad.

Lytle LA, Seifert S, Greenstein J, McGovern P (2000). How do children's eating patterns and food choices change over time? Results from a cohort study. American Journal of Health Promotion 14(4): 222-228.

Mavrovouniotis F (2012). Inactivity in childhood and adolescence: a modern lifestyle associated with adverse health consequences. Sport Science Review 21(3-4): 75-99.

Minossi V, Pellanda LC (2015). The "Happy Heart" educational program for changes in health habits in children and their families: protocol for a randomized clinical trial. BMC Pediatrics 15(1): 1-10.

Mother Child Education Foundation (ACEV) (2017). Status of children aged 0-6 in Turkey, Retrieved from https://acev.org/wp-content/uploads/2017/11/Ilk6YilBilgiNotu.pdf

Nasreddine L, Shatila H, Itani L, Hwalla N, Jomaa L, Naja F (2019). A traditional dietary pattern is associated with lower odds of overweight and obesity among preschool children in Lebanon: A cross-sectional study. European Journal of Nutrition 58(1): 91-102.

Parizkova J (2009). Nutrition, physical activity, and health in early life. CRC Press.

Perez-Rodrigo C, Ribas L, Serra-Majem LL, Aranceta J (2003). Food preferences of Spanish children and young people: the enKid study. European Journal of Clinical Nutrition 57(1): 45-48.

Shin NY, Shin MS (2008). Body dissatisfaction, self-esteem, and depression in obese Korean children. The Journal of Pediatrics 152(4): 502-506.

Sigman-Grant M, Byington TA, Lindsay AR, Lu M, Mobley AR, Fitzgerald N, Hildebrand D (2014). Preschoolers can distinguish between healthy and unhealthy foods: the all 4 kids study. Journal of Nutrition Education and Behavior 46(2): 121-127.

Slaughter V, Ting C (2010). Development of ideas about food and nutrition from preschool to university. Appetite 55(3): 556-564.

Ural A, Kılıç İ (2006). Bilimsel araştırma süreci ve SPSS ile veri analizi: SPSS 10.0-12.0 for windows. Detay yayıncılık, Ankara.

Ventura AK, Worobey J (2013). Early influences on the development of food preferences. Current Biology 23(9): 401-408.

Vollmer RL, Adamsons K, Foster JS, Mobley AR (2015). Association of fathers' feeding practices and feeding style on preschool age children's diet quality, eating behavior and body mass index. Appetite 89: 274-281.

Wardle J, Sanderson S, Gibson EL, Rapoport L (2001). Factor-analytic structure of food preferences in four-year-old children in the UK. Appetite 37(3): 217-223.

World Health Organization (WHO) (2007). Global Database on Body Mass Index. http://www.who.int/growthref/who2007_bmi_for_age/en/

Worobey J, Worobey HS, Adler AL (2005). Diet, activity and BMI in preschool-aged children: differences across settings. Ecology of Food and Nutrition 44(6): 455-466.

Yörüsün TÖ, Koçyiğit E, İçer MA, Bozkurt O, Köksal E (2017). Healthy food and activity choice of preschool children and body weight. Journal of Gazi University Health Sciences Institute 4(3): 19-26.

Zarnowiecki D, Dollman J, Sinn N (2011). A tool for assessing healthy food knowledge in 5–6-year-old Australian children. Public Health Nutrition 14(7): 1177-1183.

Zeinstra GG, Koelen MA, Kok FJ, Dae Graaf C (2007). Cognitive development and children's perceptions of fruit and vegetables; a qualitative study. International Journal of Behavioral Nutrition and Physical Activity 4(1): 30.

International Journal of Sport Culture and Science
June 2021 : 9(2)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS.2021.640

Reliability of Biomechanical Balance Platform Device Measurements

Ertuğrul ÇAKIR[1], Z. İnci KARADENİZLİ [2]
[1]Düzce Üniversitesi, Düzce, Türkiye
https://orcid.org/ 0000-0002-4332-453781
[2] Düzce Üniversitesi, Düzce, Türkiye
https://orcid.org/ 0000-0002-9159-999X

Email: ertugrulcakir@duzce.edu.tr, incikaradenizli@duzce.edu.com.tr

Type: Research Article (Received:22.06.2021– Accepted: 06.07.2021)

Abstract

Background: Ankle inversion injures are frequently encountered in Sport and most time players go back to sport with some residual deficits in ankle joint like instability and inefficient motor control of the ankle segment. For prevention some balance tests and digital balance devices are used to improve motor control ankle segment and balance skill. But in these approaches, balance tests are not effective and digital devices are not affordable in general usage. Biomechanical Balance Platform Device (BBPD) is designed to measure reaction time of motions of the ankle segment during dynamic balance performance to monitor motor control of ankle segment. The aim of the study is to assess internal consistency of the measurements obtained from BBPD to determine reliability of the device.

Participants: Twenty athletes (19,2 ± 1,1 years) participated the study. Three measurement sessions were organized two days apart. It was told to the participants not to perform exercise with high intensity (non-tiring activity) until measurements complete.

Results: In statistical analyzing the interclass correlation coefficient (ICC) was used for estimating internal consistency of the measurements of tree trials. In determining best result of reaction time score, the Cronbach's Alpha (CA) was 0,89 value, in number of reaction movements the CA was 0,92 value. So the reliability of the device determined as highly reliable.

Discussions: The aim of the study was to determine level of the reliability of the BBPD. In the light of the results BBPD can be used as a rehabilitation or training device to rehabilitate injured athletes and to get athletes improve motor control in order not to encounter ankle injuries.

Keywords: Reaction Time, Ankle, Inversion Injuries.

Introduction

Lateral ankle ligament sprains (inversion injuries) are in the most common injuries seen in sport (Gribble, et al., 2010; Waterman, et al., 2010). After injury most symptoms like edema, proprioceptive deficit and muscle weakness are rehabilitated but frequently ankle instability called as functional ankle instability which results in secondary injuries for athletes remains (Lentell, Katzmann, & Walters, 1990; Hertel, 2008; Mackenzie, Herzog, Kerr, & Marshall, 2019; Fousekis, Tsepis, & Vagenas, 2012; Katzmann & Walters, 1990). Instant motor control loss of the ankle joint during physical activity is the main factor in the pathomechanics of the injury. So the studies have been designed to improve motor control of the ankle segment to prevent the injury (Konradsen, 2002a; Martin, et al., 2021; Bertrand-Charette, Dambreville, Bouyer, & Roy, 2020).

Motor control means to elicit proper muscle contractions after sensorial inputs. If any deficit occurs in muscle strength, biomechanics alignment of a joint, gait mechanics or reaction time parameters, inefficient motor control let the joint structures exposed to high stresses and injury occurs during physical activity (Milgrom, Shlamkovitch, & Finestone, 1991; Tyler, McHugh, Mirabella, Mullaney, & Nicholas, 2006; Chomiak, Junge, Peterson, & Dvorak, 2000). In the pathomechanics of the inversion injury, during landing on the ground after jumping or running on the playground, motor control is lost instantly and ankle joint remains in the position of plantar flexion and inversion. In that position, ground reaction forces aren't met by muscles and lateral ankle ligaments are damaged. In this situation, ankle dorsal flexion and eversion elicited in time are needed muscular actions to avoid this type of injuries (Baumhauer, Alosa, Renström, Trevino, & Beynnon, 1995; Beynnon, Renström, Alosa, Baumhauer, & Vacek, 2001).

Many balance tests and devices are used in sport and rehabilitation process to prevent inversion injuries or to determine risk factors (Filipa, Byrnes, Paterno, Myer, & Hewett, 2010; Hartley, Hoch, & Boling, 2018; Namazi, Zarei, Hovanloo, & Abbasi, 2019). The main purpose of these approaches is to evaluate and improve balance skill and motor control of the athletes (Gabbe, Finch, Wajswelner, & Bennell, 2004). But these methods are time-consuming or expensive. In this regard, the aim of the BBPD is to measure the reaction time of the ankle muscles practically, to evaluate specifically motor control of the ankle segment under dynamic balance performance and to present a low cost way for motor control test or training device to be used in specific fields regarding sport. In the study the reliability of the device was assessed and the content of the device was discussed.

Material and Methods

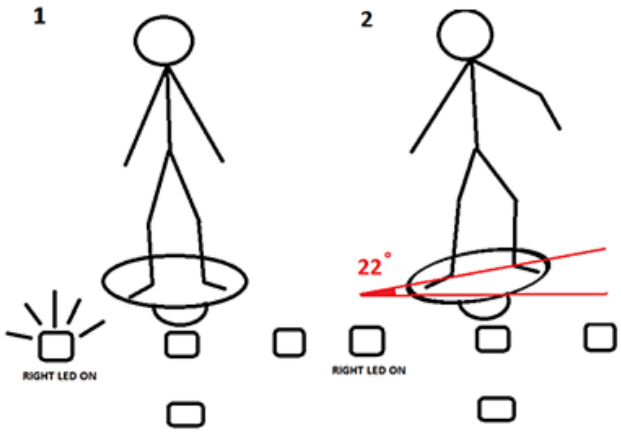
Participants

Twenty female (n: 10) and male (n: 10) amateur soccer players that have been studying in Duzce University participated in the study voluntarily. The exclusion criterion of the study is

to have a lower extremity injury, vestibular or visual problems in the 6 months before the study. All information about the scope of the study was given to the participants before the study. It was told that they shouldn't use any alcohol, make high intensity physical activity during the process of the study (4 days) and get any food intake in 2 hours before test application. The measurements of the study were conducted test in Duzce University Biomechanics Laboratory. The study was approved by Ethics Committee of Duzce University with the number of 2021/10 permission.

Procedure

Tanita SC-330 device was used for body composition and Seca brand stadiometre for height measurements. (Barbosa, Barros, Post, Waitzberg, & Heymsfield, 2003). BBPD consists of five components; a wooden balance board with 42 cm diameter -10 cm height, a MPU-6050 3 Axis Gyro Sensor Module which is sending signals about slope of the board, an Arduino Uno microcontroller board with ATmega328P chip between the balance board and computer, 4 led stand indicators having a arrow mark and a computer program. The guideline of the device is to measure ankle reaction times of an athlete standing on the balance board up in 30 seconds. Every led stand indicates four directions; back, front, right and left. The led stands are placed in front of the balance board and there is one meter and 70 degrees between right and left led stand from the pivot point of balance board, one-meter distance between back and front led stands. An athlete is placed over balance board. After set time starts, randomly selected led gets on. If led stand indicates back, the athlete makes dorsal flexion with ankle and gets the board sloped 22 degree rearwards or if a led stand indicates right, the athlete gets the board sloped 22 degrees toward right making ankle plantar flexion and inversion. When the board reaches intended slope, the led is off and the micro controller measures time between led on and off. For a new indicator to be on, the athlete should get the board 0 degree with the ground. After 30 seconds the test is over and the computer program monitors how many leds are on during the test and which is the best result.



Picture 1. A sectional view from measurement

Statistical Analysis

The recorded data were evaluated using IBM SPSS version 22 computer program. The reliability of the device was assessed using intraclass correlation coefficient calculated between the scores of three measurement sessions.The p significance value was determined as below 0.05.

Findings

Table 1. Demographic characteristics of the participants

	Body Weight (Kg, ± Std)	Body Height (Cm, ± Std)	Age (Years ± Std)
n=20	71±11,7	176,40±6,3	19,2±1,1

Std: Standard Deviation

Table 2. Mean reaction time scores of the three different tests

	n	Minumum	Maximum	Mean (second)	Std.	CA value	Sig. value
First Test	20	0,96	3,21	1,43	0,4		
Second Test	20	0,99	2,13	1,4	0,2	0,89	0,00*
Third Test	20	0,97	3,00	1,3	0,4		

Std: Standard Deviation, CA: Cronbach's Alpha, * : Significant level

Table 3. Mean number of reaction movements of the three different tests

	n	Minumum	Maximum	Mean (number)	Std.	CA value	Sig. value
First Test	20	17	30	20	3		
Second Test	20	15	29	20	3	0,92	0,00*
Third Test	20	17	29	22	3		

Std: Standard Deviation, CA: Cronbach's Alpha, * : Significant

In table 2 and 3, the scores of Biomechanic Balance Platform Device mesurements on reaction time and number of reaction movements between tests seems consistent according Cronbach-alpha coefficient values.

Discussion and Conclusion

Ankle injuries especially inversion injuries change normal biomechanics of the subthalar joint due to damaged ligaments which are passive stabilizers of the joints not to exceed normal range of motion. As a normal parameter subthalar joint tilt doesn't range to 23 degrees (Rubin, & Witten, 1960; Cox, & Hewes, 1979). After treatment the mechanical instability of the subthalar joint remains as a residual symptom (Hertel, Denegar, Monroe, & Stokes, 1999). During rehabilitation process disc training computerized or manual is the commonly-used methods for injured athlete to overcome mechanical instability and improve motor control of the ankle segment (Fusco, 2020; Verhagen, Van der Beek, Twisk, Bouter, Bahr, & Van Mechelen, 2004). Thus the muscles controlling ankle segment gains efficient motor reaction skill in perturbations of the segment during physical activities (Osborn, 2001). Balance deficit is seen as a risk factor for ankle injuries and for prevention some approaches are used to improve balance skill (McHugh, Tyler, Tetro, Mullaney, & Nicholas, 2006; Trojian, &

McKeag, 2006; McGuine, & Keene, 2006). Especially the balance board usage is highly popular and effective in training and rehabilitation field (Verhagen, 2004; Söderman, Werner, Pietilä, Engström, & Alfredson, 2000). Biodex Stability System is another option for measurement of balance skill and training but it is expensive and not affordable for many sport clubs and rehabilitation units (Arnold, & Schmitz, 1998; Testerman, & Griend, 1999). In the light of all these informations, the BBPD was designed to measure dynamic balance and motor control of ankle segment in a practical and low-cost way. The components of the BBPD are at an affordable price and the software is open-source. The measurement time was determined as 30 seconds due to performing movements with high velocity on a balance board requires fast energy consumption way and creates fatigue (Westerblad, Bruton, & Katz, 2010). So it is not intended for an athlete to get tired during measurement. To measure reaction time is prominent characteristic of the device. For example when a led stand is on for an intended inversion movement, participant should have to tilt the board in the slope of 22 degree as fast as possible. 22 degree is determined because it is the last degree of the subthalar joint in normal biomechanical range. How many a participant elicit reaction movements in 30 seconds or reacted the light stimulus as much as quick are parameters of the evaluation concept. Near that if the BBPD can be used in training for motor control of the segment, to train athlete for a fast neuromuscular reaction in a safe range of motion. In 30 seconds to get the leds off as much as quick is an indicator of the dynamic balance skill. So the BBPD is used for a balance training to keep athletes away from ankle injuries monitoring their balance skill with numbers. The aim of the study is to assess the reliability of BBPD evaluating the consistent of the scores obtained after three measurements. Value of the cronbach alpha coefficient determined as good. So BBPD is an option for people working in sport and rehabilitation field as a reliable device to measure and improve motor control of an athlete.

Conflict of Interest

There is no conflict of interest intellectually or financially.

Funding

No funding to declare.

*The study was derived from the PhD thesis of A Digitial Biomechanic Test and Training Platform for Prevention and Rehabilitation of Ankle Injuries in Athletes.

REFERENCES

Arnold, B. L., & Schmitz, R. J. (1998). Examination of balance measures produced by the Biodex Stability System. *Journal of Athletic Training*, 33(4), 323-327.

Barbosa-Silva, M. C., Barros, A. J., Post, C. L., Waitzberg, D. L., & Heymsfield, S. B. (2003). Can bioelectrical impedance analysis identify malnutrition in preoperative nutrition assessment? *Nutrition*, 19(5), 422-426.

Baumhauer, J. F., Alosa, D. M., Renström, F. H., Trevino, S., & Beynnon, B. (1995). A prospective study of ankle injury risk factors. *The American Journal of Sports Medicine*, 23(5), 564–570.

Beynnon, B. D., Renström, P. A., Alosa D. M., Baumhauer, J. F., & Vacek, P. M. (2001). Ankle ligament injury risk factors: a prospective study of college athletes. *Journal of Orthopaedic Research*, 19(2), 213–220.

Bertrand-Charette, M., Dambreville, C., Bouyer, L. J., Roy, J. S. (2020). Systematic review of motor control and somatosensation assessment tests for the ankle. *BMJ Open Sport and Exercise Medicine*, 6(1), 1- 15.

Chomiak, J., Junge, A., Peterson, L., & Dvorak, J. (2000). Severe injuries in football players: influencing factors. *The American Journal of Sports Medicine*, 28(5 Suppl), 58-68.

Cox, J. S., & Hewes, T. F. (1979). "Normal" talar tilt angle. *Clinical Orthopaedics and Related Research*, May(140), 37-41.

Filipa, A., Byrnes, R., Paterno, M. V., Myer, G. D., & Hewett, T. E. (2010). Neuromuscular training improves performance on the Star Excursion Balance Test in young female athletes. *Journal of Orthopaedic & Sports Physical Therapy*, 40(9), 551-558.

Fousekis, K., Tsepis, E., & Vagenas, G. (2012). Intrinsic risk factors of noncontact ankle sprains in soccer: a prospective study on 100 professional players. *The American Journal of Sports Medicine*, 40(8), 1842-1845.

Fusco, A., Giancotti, G. F., Fuchs, P. X., Wagner, H., Varalda, C., Capranica, L., & Cortis, C. (2020). Dynamic Balance Evaluation: Reliability and Validity of a Computerized Wobble Board. *Journal of Strength and Conditioning Research*, 34(6), 1709-1715.

Gabbe, B. J., Finch, C. F., Wajswelner, H., Bennell, K. L. (2004). Predictors of lower extremity injuries at the community level of Australian football. *Clinical Journal of Sport Medicine*, 14(2), 56-63.

Gribble, P. A., Bleakley, C. M., Caulfield, B. M., Docherty, C. L, Fourchet, F., Fong, D. T., Hertel, J., Hiller, C. E, Kaminski, T. W., McKeon, P. O., Refshauge, K. M., Verhagen, E. A., Vicenzino, B. T., Wikstrom, E. A., & Delahunt, E. (2016). Evidence review for the 2016 International Ankle Consortium consensus statement on the prevalence, impact and long-term consequences of lateral ankle sprains. *British Journal of Sports Medicine*, 50(24), 1496-1505.

Hartley, E. M., Hoch, M. C., Boling, M. C. (2018). Y-Balance Test performance and BMI are associated with ankle sprain injury in collegiate male athletes, Journal of Science and *Medicine in Sport*, 21(7), 676-680.

Hertel, J., Denegar, C. R., Monroe, M. M., & Stokes, W. L. (1999). Talocrural and subtalar joint instability after lateral ankle sprain. *Medicine and Science in Sports and Exercise*, 31(11):1501-1508.

Hertel, J. (2008). Sensorimotor Deficits with Ankle Sprains and Chronic Ankle Instability. *Clinics in Sports Medicine*, 17(3), 353-370.

Konradsen, L. (2002a). Sensori-motor control of the uninjured and injured human ankle. *Journal of Electromyography and Kinesiology*, 12(3), 199-203.

Konradsen, L. (2002b). Factors contributing to chronic ankle instability: kinaesthesia and joint position sense. *Journal of Athletic Training*, 37(4), 381-385.

Lentell, G., Katzmann, L. L., & Walters MR. (1990). The relationship between muscle function and ankle stability. *Journal of Orthopaedic & Sports Physical Therapy*, 11(12), 605-611.

Mackenzie, M., Herzog, Z. Y., Kerr, S. W., & Marshall, E. A. (2019). Wikstrom; Epidemiology of Ankle Sprains and Chronic Ankle Instability. *Journal of Athletic Training*, 54 (6), 603-610.

McGuine, T. A., & Keene, J. S. (2006). The effect of a balance training program on the risk of ankle sprains in high school athletes. *The American Journal of Sports Medicine*, 34(7),1103-1111.

McHugh, M. P., Tyler, T. F., Tetro, D. T., Mullaney, M. J., & Nicholas, S. J. (2006). Risk Factors for Noncontact Ankle Sprains in High School Athletes: The Role of Hip Strength and Balance Ability. *The American Journal of Sports Medicine*, 34(3), 464-470.

Milgrom, C., Shlamkovitch, N, & Finestone, A. (1991). Risk factors for lateral ankle sprain: a prospective study among military recruits. *Foot Ankle*, 12(1), 26-30.

Namazi, P., Zarei, M., Hovanloo, F., & Abbasi, H. (2019). The association between the isokinetic muscle strength and lower extremity injuries in young male football players. *Physical Therapy in Sport*, 39(Sept.), 76-81.

Martin, R. L., Davenport, T. E., Fraser, J. J., Sawdon-Bea, J., Carcia, C. R., Carroll, L. A., Kivlan, B. R., Carreira, D. (2021). Ankle Stability and Movement Coordination Impairments: Lateral Ankle Ligament Sprains Revision. *Journal of Orthopaedic & Sports Physical Therapy*, 51(4), 155-195.

Rubin, G., & Witten, M. (1960). The Talar-Tilt Angle and the Fibular Collateral Ligaments. *Journal of Bone and Joint Surgery, American Volume*, 42, 311-326.

Osborne, M. D., Chou, L.S., Laskowski, E. R., Smith, J., & Kaufman, K. R. (2001). The effect of ankle disk training on muscle reaction time in subjects with a history of ankle sprain. *The American Journal of Sports Medicine*, 29(5), 627-632.

Söderman, K., Werner, S., Pietilä, T., Engström, B., & Alfredson, H. (2000). Balance board training: prevention of traumatic injuries of the lower extremities in female soccer players? A prospective randomized intervention study. *Knee Surgery, Sports Traumatology, Arthroscopy*, 8(6), 356-363.

Testerman, C., & Griend, R. V. (1999). Evaluation of Ankle Instability Using the Biodex Stability System. *Journal of Management*, 20(5), 874-900.

Trojian, T. H, & McKeag, D. B. (2006). Single leg balance test to identify risk of ankle sprains. *British Journal of Sports Medicine*, 40(7), 610-613.

Tyler, T. F., McHugh, M. P., Mirabella, M. R, Mullaney, M. J., & Nicholas, S. J. (2006). Risk factors for noncontact ankle sprains in high school football players: the role of previous ankle sprains and body mass index. *The American Journal of Sports Medicine*, 34(3), 471-475.

Verhagen, E., Van der Beek, A., Twisk, J., Bouter, L., Bahr, R., & Van Mechelen, W. (2004). The Effect of a Proprioceptive Balance Board Training Program for the Prevention of Ankle Sprains: A Prospective Controlled Trial. *The American Journal of Sports Medicine*, 32(6), 1385-1393.

Waterman, B. R., Owens, B. D., Davey, S., Zacchilli, M. A., Belmont, P. J. Jr. (2010). The epidemiology of ankle sprains in the United States. *The Journal of Bone and Joint Surgery*, 92(13), 2279-2284.

Westerblad, H., Bruton, J. D., & Katz, A. (2010). Skeletal muscle: energy metabolism, fiber types, fatigue and adaptability. *Experimental Cell Research*, 16(18), 3093-3099.

Waterman, B. R., Owens, B. D., Davey, S., Zacchilli, M. A., & Belmont, P. J. (2010). The epidemiology of ankle sprains in the United States. *The Journal of Bone and Joint Surgery*, 92(13), 2279-2284.

International Journal of Sport Culture and Science
June 2021 : 9(2)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS.2021.641

Social Media Addiction in the Least Developed Countries: a quantitative study among university students in Afghanistan

Rahmatullah HAAND[1 3], Ahmad Zia ELHAM[2 3]
[1.] School of Journalism and Communication, Hebei University, Baoding, China
https://orcid.org/0000-0002-1578-0279
[2.] School of Journalism and Communication, Communication University of China, Beijing, China
https://orcid.org/0000-0003-0249-7738
[3.] School of Journalism and Public Relations, Shaikh Zayed University, Khost, Afghanistan

Email: rh.haand@szu.edu.af; zia.elham@szu.edu.af

Type: Review Article (Received:06.05.2021– Accepted: 02.07.2021)

Abstract

This study examines social media addiction phenomenon and their application among universities students. Uses and gratifications and media systems dependency theories were used as a theoretical framework. A same dataset that was firstly collected and developed for 'The relationship between social media addiction and depression: a quantitative study among university students in Khost, Afghanistan' was used. Probability-stratified sampling method was used, and a 35-items questionnaire was distributed to replicate Kimberly Young's Internet Addiction Test (IAT). Three hundred eighty-four students from three universities of Afghanistan participated. The study found that social media addiction existed at various levels among the respondents. Findings confirmed both theories regardless of the sociopolitical environment such as political stability, low literacy level, a weak economy, and conflict in the least developed countries like Afghanistan. Besides that, the result showed that Facebook was the leading, regularly used social media platform among other online platforms. Facebook was used for social purposes and mostly for obtaining news and maintaining relationships. These findings mainly confirm the main argument of the Media Systems Dependency theory.

Keywords: Social Media Addiction, The least developed countries, Uses and Gratifications, Media System Dependency, Khost, Afghanistan

Introduction

The rapid growth and popularity of the internet and social media have attracted people of all ages worldwide (Murat KIRIK, 2015). Internet and social media users are continuously increasing every day. According to Hootsuite's digital yearbook in January 2020 more than half of the world's population (59%) or 4.54 billion people were using the internet and 3.80 billion people were actively using social media, while these number in 2019, and 2017 were 4.338 billion (internet users), 3.484 billion (social media users) and 3.773, 2.789 billion users respectively (KEMP, 2017, 2019b, 2020).

Although social media has turned into a commonly used platform on the internet and remained as one of the important communication and interaction tools among individuals (Kırcaburun, 2016), concerns have been rising due to its addictive usage. The term "addiction" generally refers to those psychological or physical inabilities to stop an activity or something else, causing many psychological and physical harms, such as over usage of drugs, alcohols, internet, social media, smartphone, and videogames (Saripalli, 2018). Although there is no exclusive definition for internet addiction, addicted people are generally explained, "who have trouble filling personal and professional obligations because of their online activities, and their use of the internet causes strain on relationships with family and friends. They experience negative emotions or withdrawal symptoms when their internet access is restricted" (abridge version) (Mental Health America, 2019). Social media addiction can also be defined exactly similar to internet addiction as it is a type of internet addiction.

Since the emergence of social media, scholars mainly focused on the opportunities provided by social media, whereas, over the last decade scholars' attention have been turning into the dark sides of social media such as fake news, cyberbullying, trolling, privacy abuse and its problematic usage (Baccarella et al., 2018). The excessive or addictive use of social media is one of the dark sides of social media that gained scholars' attention across the globe. Earlier studies reported that young adults are more vulnerable due to their excessive interest in using social media (Andreassen et al., 2017). Some other studies revealed that this excessive interests of adolescents in using social media have adverse effects on their behavior, interpersonal relationships, social-behavioral values, academic performance and other psychological disorders (J. Al-Menayes, 2015; JEPNGETICH, 2016; Joo & Teng, 2017; Murat KIRIK, 2015; Rahman, 2014). So, the excessive or addictive use of internet-social media has harmful consequences, especially among the young generation.

Though considerable research has been devoted to internet/social media addiction and its adverse effects on users in developed or in developing countries (Gazi et al., 2017; J. Al-Menayes, 2015; Kirik et al., 2015; Kırcaburun, 2016; Wang et al., 2018), somewhat less attention has been paid to investigate this phenomenon in the least developed countries such as Afghanistan. Therefore, this study attempts to investigate university students stationed in Khost Province of Afghanistan to identify whether they are addicted to social media and to what extent. The study also examines, which social media platforms students use the most regularly and to identify the students' gratifications of using these social media platforms. Importantly we attempt to determine whether media systems dependency and uses and gratification theories in developed and least developed countries are equally applicable or not.

Material and Method

The dataset used here was mainly developed for the article 'The relationship between social media addiction and depression: a quantitative study among university students in Khost, Afghanistan' publish in T & F journal International Journal of Adolescence and Youth, 25(1), pp. 780-786 (Haand & Shuwang, 2020), which was focusing and investigating the relation and correlation between social media addiction and depression. However, this paper studies the existence and level of social media addiction mainly in the least developed countries. It is because the addiction phenomenon in developed countries has attracted greater scholarship. This study, however, is an attempt to bridge the gap between developed and the least developed countries regarding the existence and level of social media addictions.

Theoretical Framework

Numerous theories interpret the use of social media and the consequences due to its usage. Nevertheless, the two theories naming Uses and Gratification and Media Systems and Dependency, are directly relevant to the nature of this study. This research is based on these two theories, and they together indicate that the users of the media relied upon to fulfill their particular needs and desired gratifications. These theories can help to examine and conceptualize social media addiction and its usage. Each of them is explained in detail below.

Uses and Gratifications Theory

The theory, Uses and Gratifications, has a long history in mass communication studies. The main purpose of this theory is to understand how, why, and what media people use in their daily lives, and most importantly, the reasons behind their use of a particular media or media content. At the beginning of communication studies, scholars developed an approach for understanding the gratifications of mass media users that divert their attention to a particular media and contents as well as their own needs (Weiyan, 2015). Uses and Gratifications theory is one of these theories framed by Elihu Katz, Jay Blumler, and Michael Gurevitch in the 1970s (Littlejohn & Foss, 2009).

This theory is an audience-centered approach that focuses on what people do with media (Katz et al., 1974, cited in Quan-Haase & Young, 2010) in opposing what media do to the people (e.g., hypodermic needle/ bullet theory). Some scholars explained Uses and Gratification as "Use means selectively using media expected to satisfy users' needs and Gratification refers to the degree of satisfaction acquired in the process of using media" (Chung, Koo, & Park, 2012, cited in Warwimbo, 2015). At the beginning of proposing this theory, the approach was focused on conventional media such as radio, newspaper, and television. A drastic advancement in communication technology, mainly internet and social media, this theory got new momentum and significance, especially since the last decade with a drastic advancement of social media (Tanta et al., 2014). Therefore, Uses and Gratification Theory was chosen for this study to examine the gratification of using social media platforms among the public and private university students of Shaikh Zayed, Ahmad Shah Abdali, and Pamir universities in Khost province.

Media Systems Dependency Theory

This theory fundamentally proposes that the audience uses mass media purposively, and media consumers mostly care about their particular needs to satisfy them from whatever the media they prefer. Now, with the dramatic development of Internet-based new media, in terms of audience number, the market for media is much competitive. Since the consumers of both mass and Internet media are not limited to a single form of media they have the choice to

select freely their preferred one according to their personal needs (John William & Hitoshi, 2016). This theory was developed by Sandra BallRokeach and Melvin Defleur in 1976 (Luo, 2018) and explains that the more an audience depends on a particular media to meet his/her specific goals, the more he/she uses the medium and will become significant to him/her. Therefore, this theory can predict that the popularity of social media platforms can project the dependency of social media users on the medium (Ha et al., 2013). To understand students' dependency on social media, Media Systems Dependency, or simply Dependency Theory is chosen for this research.

Participants and Sampling

The participants were undergraduate students of Shaikh Zayed (public), Ahmad Shah Abdali, and Pamir (private) universities in Khost province of Afghanistan. A sample of 384 students were participated in the study, and a 100% response rate was achieved. Yamane's formula was used for calculating sample size [see (Singh & Masuku, 2014)]. The probability sampling method was used, after which stratified random sampling was applied to select the participants in the survey. The majority of the respondents were male students, while only 6% of them were female. Nearly all the respondents were aged between 18-25 years old (mean, 21.73; SD, 2.05). See Table 1 for the details.

Table 1. Demographical statistics of the participants.

Variables		Frequencies (N)	Percentages (%)
Gender	Male	361	94
	Female	23	6
Age	18-25	374	97.4
	26-35	10	2.6
Marital Status	Single	293	76.3
	Married	91	23.7
University	Public	322	83.9
	Private	62	16.1
Year of Education	Freshmen	83	21.6
	Sophomore	106	27.6
	Junior	100	26
	Senior	95	24.7
Do you use social media?	Yes	375	97.7
	No	9	2.3
What device do you use for social media?	Smartphone	362	94.3
	Computer or other	13	3.4
Where do you live?	Remote rural areas	139	36.2
	Hostel/urban areas	245	63.8
Student type	Full-time student	259	67.4
	Part-time student	125	32.6

Instruments

A self-administered questionnaire was the main instrument in the study. Firstly, the questionnaire was translated into the local language Pashto and then translated into English by an expert in English language literature to establish the comparability and to resolve any discrepancies. Secondly, before distributing the questionnaire to the target sample size, both pre-test and a pilot test were used to validate the instrument. Ten active social media users were involved in the pre-test, who was asked to comment on the structure and wording of the questionnaire's items and to adjust the length of time they would be spending on responding to the questionnaire. The pilot test was conducted on a sample of 42 self-selected students. Based on their feedback at both tests, the questionnaire was then modified to make it more transparent and comprehensible. Both the questionnaire and measurement were proven reliable (Cronbach's alpha above 0.80).

Measures

Social Media Use

Along with the participants' personal information, some questions were asked to identify how the respondents use social media. The respondents were asked about whether they use social media or not, which social media platform they subscribed to, the gratifications they used social media for, and how much time they spent online or how often they visited the relevant social media platforms daily.

Social Media Addiction

Kimberly Young`s Internet Addiction Test (IAT) was used for measuring social media addiction. Even though IAT is specially designed for measuring Internet addiction, we replicated this test for measuring social media addiction. Using social media is also an Internet-based online activity which can still be said it is a type of Internet addiction. IAT has 20-items, and all these items were answered on a five-point Likert scale (0 = Not Applicable, 5 = Always). IAT covers the degree to which their internet use affects their daily routine, social life, productivity, sleeping pattern, and feelings. The minimum score is 30, and the maximum is 100. The higher the score, the greater the addiction level (Young, 1998).

Data Analysis

A quantitative approach was utilized in the data analysis, and to draw a conclusion descriptive statistical analysis, T-Test, and One-Way ANOVA were applied on the data. SPSS 21 was used for all data analyses.

Findings

Social Media Use

The findings indicated that nearly all the students were subscribed to at least one social media platform. Facebook was found as the dominant and regularly used social media platform among the respondents. The participants were used social media for obtaining news and maintaining relationships. Table 2 presents all these findings in detail.

Table 2. Social media use

	Variables	Frequency (n)	Percent (%)
What accounts do you have?	Facebook	364	97.1
	Twitter	93	24.8
	Instagram	91	24.3
	Facebook Messenger	311	82.9
	WhatsApp	195	50.8
	IMO	111	28.9
Which of those social media platforms do you use regularly?	Facebook	358	95.5
	Twitter	61	16.3
	Instagram	40	10.7
	Facebook Messenger	275	73.3
	WhatsApp	135	36
	IMO	57	15.2
What do you use social media for?	News	305	81.3
	Entertainment	239	63.7
	Meeting new people	161	42.9
	Maintain Relationships	248	66.1
	Social Events	190	50.7
	Express and Share Opinion	190	50.7
	Social Interaction	166	44.3

Social Media Addiction

Out of the total sampled students, 370 students responded to the IAT while the remaining 14 students did not respond, and they were excluded. Overall a mild level of social media addiction was found among the participants. Since the mean score on addiction was found (mean, 38.12; SD, 17.36), according to the IAT scale, the score in a range of 31-49 is recognized as the mild category of addiction. From the other angle, the majority of the participants were found at a mild level, less than a quarter of other were moderately addicted to social media, while more than a quarter of other respondents were recognized as ordinary social media user. The moderate category scored between 50 to 79 points, where the normal category did not cross the score for any addiction level. The remaining (5.7%) students obtained score was 80 or more than and identified as severely addicted students. Furthermore, it was found that the respondents spent an average (mean = 3.9, SD = 1.189) hours online on social media daily, and they visit or use the relevant social media platform several times in a day. Table 3 reveals this result in detail.

Table 3. Social media addiction

Variables		Frequency(N)	Percent (%)	Mean	SD
On average, how much time do you spend on social media daily?	Less than one hour	31	8.3	3.9	1.189
	One hour	88	23.5		
	Two hour	133	35.5		
	Three hour	69	18.4		
	Four hour	47	12.5		
	Five or more than	7	1.9		
On average, how often do you visit or use social media daily?	Several times a day	219	58.4	1.81	1.245
	About once a day	85	22.7		
	A few days a week	30	8.0		
	Every few weeks	5	1.3		
	Less often	36	9.6		
Level of Addiction	Mild	154	40.1	38.12	17.36
	Moderate	63	16.4		
	Normal	131	34.1		
	Severe	22	5.7		

T-Test (T-test) was applied to study social media addiction among married and unmarried students and the result showed that there was not a significant difference among both categories of students conditions; t (368) = -.195, p = .845. As p>0.05. Furthermore, the t-test result revealed that the students from both public and private universities are mildly addicted to social media and there is not a significant difference; t (368) = -2.192, p = .29. Likewise, there was not any difference between full-time and part-time students in terms of social media addiction, conditions; t (368) = -1.74; p = .082. In addition, the T-Test result showed that students from both urban and rural areas are equally addicted to social media and the residential areas do not make the difference; conditions, t (368) = -1.46; p = .143. Table 4 shows the results for t-tests.

Table 4. T-test results of the difference between the total score in addiction and other grouping variables marital status, university, full/part-time student, and residential areas.

Variables		N	Mean	SD	df	t	Sig
Score on Addiction	Single	281	38.02	17.35	368	-.195	.845
	Married	89	38.43	17.47	147.01	-.195	.846
Score on Addiction	Public University	311	37.26	16.91	368	-2.192	.29
	Private University	59	42.64	19.05	76.32	-2.022	.47
Score on Addiction	Full-time student	248	37.02	17.34	368	-1.74	.082
	Part-time student	122	40.36	17.24	242.06	-1.74	.082
Score on Addiction	Urban	234	37.11	16.35	368	-1.46	.143
	Rural	136	39.86	18.90	250.52	-1.41	.159

Moreover, the One-Way ANOVA test showed [F (3, 366) = 1.183; p = .316] that there is no statistically significant difference between the four categories of students (freshmen, sophomore, junior, senior) in terms of social media addiction score. Unsurprisingly, as it was

expected, the findings showed that those students who spend much time online on social media [F (5, 364) = 22.685; p = .000] or visit social media more frequently [F (4, 365) = 4.813; p = .001] are more addicted than those who spend less time online or visit relevant social media platform less often. Those respondents who spent five or more than five hours on social media, their mean addiction score was (mean = 78.57), which is higher than those who spent one or less than one hour on social media (mean = 31.25). On the other hand, an average score of the respondents who visited social media several times a day was (mean = 41.18) in the addiction test, while those who visited social media less often scored (mean = 30.8). Table 5 presents the results for ANOVA, and Figure 1 shows the difference between social media addiction scores and the time students spent online.

Table 5. One Way ANOVA test results for the difference between the dependent variable (score on addiction) and independent variables.

Score on addiction

Independent variables		Sum of Squares	df	Mean Square	F	Sig.
Year of Education (freshmen, sophomore, junior, and senior	Between Groups	1068.151	3	356.050	1.183	.316
	Within Groups	110150.130	366	300.957		
	Total	111218.281	369			
The amount of time you spend online on social media daily.	Between Groups	26423.196	5	5284.639	22.685	.000
	Within Groups	84795.085	364	232.954		
	Total	111218.281	369			
How often you visit social media.	Between Groups	5572.328	4	1393.082	4.813	.001
	Within Groups	105645.954	365	289.441		
	Total	111218.281	369			

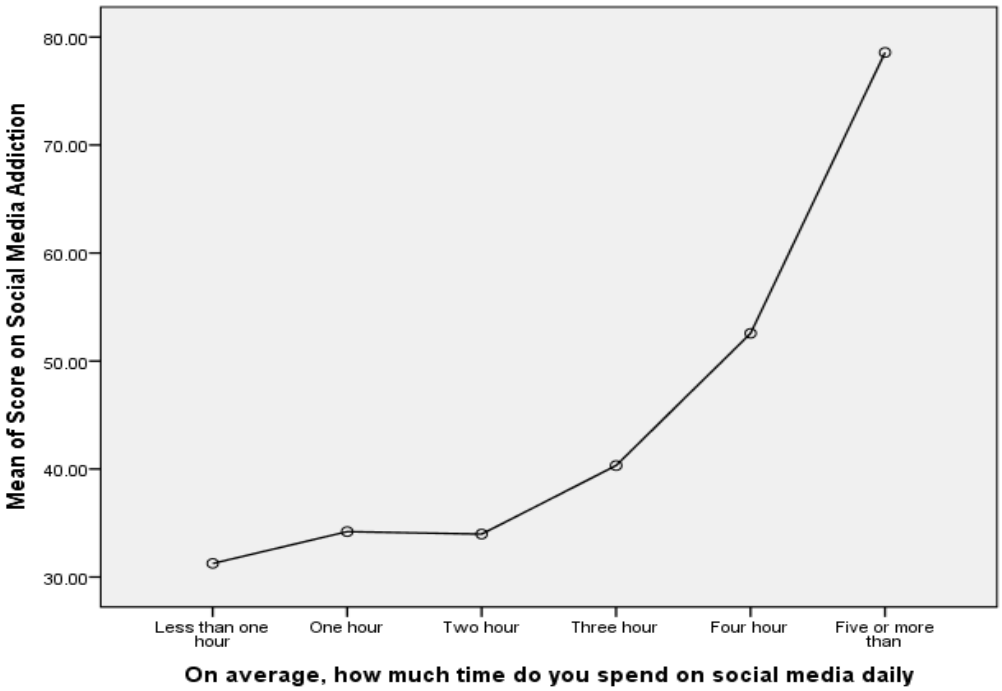


Figure 1: The difference between social media addiction scores and the time students spend online.

Discussion and Conclusion

The majority of the respondents were male students, while only 6% of them were female. That was almost the exact reflection of the current students' population of the selected public (SZU) and private (PMU & ASAU) universities' students in terms of gender. According to Afghanistan Statistical Yearbook in 2018/2019, the number of female students was quite less than male in the target population (female n = 349 & male n = 9001) (Afghanistan Statistical Yearbook, 2018). Therefore, gender was not considered in the study due to the presence of quite less number of female students in the target population.

The main objective of the study was to examine the existence of social media addiction among university students, whether they are addicted or not, and to what extent they are addicted. In general, the findings confirmed the existence of social media addiction at various levels among the participants. The majority of the respondents were found as mildly addicted to social media. The mild level of addicted users refers to those who overuse social media but have control over it and may not cause any significant problem. Less than a quarter of the respondents were found at a moderate level of addiction, and this category of students may occasionally experience problems in their daily lives. At the severe level of social media addiction, we found 5.95% of respondents were experienced severe addiction, and it may usually cause significant problems in their everyday lives. The remaining more than a quarter of the participants were not addicted to social media.

In terms of social media addiction, the findings demonstrated that there is no significant difference among students' marital status; year of education; full-time or part-time student; residential region, and the universities where they study. It might be because the target population was more homogenous than heterogeneous. The homogeneity of the population was namely: 1- all of them were undergraduate students 2- the vast majority of the respondents were at similar age 3- nearly all of them were using smartphones for social media 4- most of the students were unmarried, lived in a hostel or urban areas, and were full-time students.

Unsurprisingly, the study found that the more the respondent spends time online or frequently visits social media, the higher the person is addicted to social media, and the less the respondent spends time online or less often visits social media, the lesser the respondent is addicted to social media. This result confirms the findings of J. J. Al-Menayes 8, A. M. Kirik, A. Arslan 13 studies; Kirik's study found that visiting social media more frequently increases the addiction level whereas J.Al-Menayes's study reported 'spending more time online' as a dimension of social media addiction.

All these findings mainly confirm the main argument of the Media Systems Dependency theory. The theory focuses on media consumers' dependency on a particular media or content to satisfy their own needs. This study mainly found the existence of social media addiction at various levels, but overall, it was not at a harmful level to be treated. So, it can be said that the respondents are mostly dependent on a particular social media platform (Facebook) or other alternatives to meet their needs (mostly obtaining news and maintaining relationships) while using a particular platform.

Theoretical Implication

The Uses and Gratifications theory is an audience-center approach which that mainly focuses on what the people do with media channels in opposing what the media do to the people. This theory argues that media consumers selectively use media channels to meet their needs and expect to satisfy pleasure. On the other hand, the theory Media Systems Dependency focuses on the dependency of the audience on a particular media and argues that the more an audience depends on a particular media to meet his/her specific goals, the more he/she uses the medium and will become significant to him/her. These theories are tested in many studies related to communication in various countries; however highly likely, these theories are not tested in the least developed countries like Afghanistan.

Afghanistan is one of the less developed countries in South Asia. According to World Bank GDP per capita, Afghanistan was estimated 520.9$ in 2018, and in Human Capital Index (HCI), the country was ranked 0.39 from the scale 0-1(World Bank, 2018). Overall the literacy level is approximately 32% of the total population (KEMP, 2019a). In terms of insecurity and political stability, Afghanistan witnessed a high number of casualties. To date, 1366 civilians were killed in 2019 and 2446 other wounded in conflicts among government, the Taliban, Islamic State of Iraq and Syria (ISIS), and foreign troops (UNAMA, 2019). Since the last quarter of the 20th century to the very first years of the 21st century, the country has experienced civil war and political instability. Although the country has a relatively stable political system, in pursuit of power, Afghanistan has been intermittently interrupted by armed opponents' security incidents since the collapse of the Taliban in late 2001.

Against this backdrop, our research findings confirm that the Uses and Gratifications and Media Systems Dependency theories are equally applicable regardless of political stability, low literacy level, weak economy, and conflict. In other words, people use media for the same reasons and are dependent on media systems similarly in developed and least developed countries.

*This paper is a part of thesis research project.

REFERENCES

Afghanistan Statistical Yearbook. (2018). Afghanistan Statistical Yearbook 2017-18 (Annual Report No. 39).

Andreassen, C. S. et al., (2017). The relationship between addictive use of social media, narcissism, and self-esteem: Findings from a large national survey. Addictive Behaviors, 64, 287–293. https://doi.org/10.1016/j.addbeh.2016.03.006

Baccarella, C. V. et al., (2018). Social media? It's serious! Understanding the dark side of social media. European Management Journal, 36(4), 431–438. https://doi.org/10.1016/j.emj.2018.07.002

Boyd, Danah M., & Ellison, N. B. (2007). Social Network Sites: Definition, History, and Scholarship. Journal of Computer-Mediated Communication, 13(1), 210–230. https://doi.org/10.1111/j.1083-6101.2007.00393.

Chak, K., & Leung, D. L. (2004). Shyness and Locus of Control as Predictors of Internet Addiction and Internet Use. 7(5), 12.

Gazi, M. A.et al. (2017). The research of the level of social media addiction of university students. International Journal of Social Sciences and Education Research, 3(2), 549–549. https://doi.org/10.24289/ijsser.279705

Ginige, P. (2017). Internet Addiction Disorder. In M. H. Maurer (Ed.), Child and Adolescent Mental Health. InTech. https://doi.org/10.5772/66966

Griffiths,et all. (2014). Social Networking Addiction. In Behavioral Addictions (pp. 119–141). Elsevier. https://doi.org/10.1016/B978-0-12-407724-9.00006-9

Ha, L. et al. (2013). Consumption and Dependency of Social Network Sites as a News Medium: A Comparison between College Students and General Population. Media and Communications Faculty Publications, 11, 15. https://scholarworks.bgsu.edu/smc_pub/11

Haand, R.,et al. (2020). The relationship between social media addiction and depression: A quantitative study among university students in Khost, Afghanistan. International Journal of Adolescence and Youth, 25(1), 780–786. https://doi.org/10.1080/02673843.2020.1741407

J. Al-Menayes,et al. (2015). Dimensions of Social Media Addiction among University Students in Kuwait. Psychology and Behavioral Sciences, 4(1), 23. https://doi.org/10.11648/j.pbs.20150401.14

JEPNGETICH, et al. (2016). Influence Of Social Media On Face To Face Communication Among College Students: A Study Of Selected Colleges In Eldoret.

John William, C.et al. (2016). Media Dependency, Usage and Trust in a Time of Crisis – A Case Study of the Great East Japan Earthquake. Institute of Asia-Pacific Studies, Waseda University, 18.

Joo, et al (2017). Impacts of Social Media (Facebook) on Human Communication and Relationships: A View on Behavioral Change and Social Unity. Technology Vol., 24.

KEMP, S. (2017). 2017 DIGITAL YEARBOOK INTERNET, SOCIAL MEDIA, AND MOBILE DATA FOR 239 COUNTRIES AROUND THE WORLD (p. 6) [Annual Report]. https://wearesocial.com/special-reports/digital-in-2017-global-overview

KEMP, S. (2019a). DIGITAL 2019 AFGHANISTAN ALL THE DATA AND TRENDS

YOU NEED TO UNDERSTAND INTERNET, SOCIAL MEDIA, MOBILE, AND E-COMMERCE BEHAVIOURS IN 2019 (p. 15) [Annual Report]. https://www.slideshare.net/DataReportal/digital-2019-afghanistan-january-2019-v01

KEMP, S. (2019b). DIGITAL 2019: ESSENTIAL INSIGHTS INTO HOW PEOPLE AROUND THE WORLD USE THE INTERNET, MOBILE DEVICES, SOCIAL MEDIA, AND E-COMMERCE (p. 7) [Annual Report]. https://wearesocial.com/global-digital-report-2019

KEMP, S. (2020). DIGITAL 2020: GLOBAL DIGITAL OVERVIEW (We Are Social Hootsuite, p. 247) [Annual Report]. https://wearesocial.com/blog/2020/01/digital-2020-3-8-billion-people-use-social-media

Kirik, A. M., et al. (2015). A Quantitative Research on the Level of Social Media Addiction among Young People in Turkey. 16.

Kırcaburun, K. (2016). Self-Esteem, Daily Internet Use and Social Media Addiction as Predictors of Depression among Turkish Adolescents. Journal of Education and Practice, 9.

Kuss, D. J. et al , M. D. (2011). Online Social Networking and Addiction—A Review of the Psychological Literature. International Journal of Environmental Research and Public Health, 8(9), 3528–3552. https://doi.org/10.3390/ijerph8093528

Littlejohn, S. W.et al. (2009). Encyclopedia of communication theory. Sage.

Luo, M. M. (2018). INTERNET USE IN CAMBODIA: A MEDIA DEPENDENCY THEORY PERSPECTIVE. International Journal of Management and Applied Science, 4(3), 4. http://iraj.in

Mental Health America. (2019). Risky Business: Internet Addiction [Medical]. Mental Health America. https://www.mentalhealthamerica.net/conditions/risky-business-internet-addiction

Murat KIRIK, A. (2015). Türkiyedeki Gençlerin Sosyal Medya Bağımlılık Düzeylerine Yönelik Nicel Bir Araştırma. International Journal of Science Culture and Sport, 3(13), 108–108. https://doi.org/10.14486/IntJSCS444

Nalwa, K.,et al. (2003). Internet Addiction in Students: A Cause of Concern. CyberPsychology & Behavior, 6(6), 653–656. https://doi.org/10.1089/109493103322725441

Quan-Haase, A.,et al. (2010). Uses and Gratifications of Social Media: A Comparison of Facebook and Instant Messaging. Bulletin of Science, Technology & Society, 30(5), 350–361. https://doi.org/10.1177/0270467610380009

Rahman, S. H. A. (2014). Can't Live without my FB, LoL: The Influence of Social Networking Sites on the Communication Skills of TESL Students. Procedia - Social and Behavioral Sciences, 134, 213–219. https://doi.org/10.1016/j.sbspro.2014.04.241

Saripalli, V. (2018, October 25). What is addiction? [Medical]. Mediacal NewsToday. https://www.medicalnewstoday.com/articles/323465.php

Shaw, M., et al. (2008). Internet Addiction: Definition, Assessment, Epidemiology and Clinical Management. CNS Drugs, 22(5), 353–365. https://doi.org/10.2165/00023210-200822050-00001

Singh, A. S., e (2014). SAMPLING TECHNIQUES & DETERMINATION OF SAMPLE SIZE IN APPLIED STATISTICS RESEARCH: AN OVERVIE, United Kingdom. International Journal of Economics, Commerce and Management, 2(11). http://ijecm.co.uk/

Steinfield, C., Ellison, N. B., & Lampe, C. (2008). Social capital, self-esteem, and use of

online social network sites: A longitudinal analysis. Journal of Applied Developmental Psychology, 29(6), 434–445. https://doi.org/10.1016/j.appdev.2008.07.002

Tanta, I., Mihovilović, M., & Sablić, Z. (2014). Uses and Gratification Theory – Why Adolescents Use Facebook? IZVORNI ZNANSTVENI RA, 26.

UNAMA. (2019). Afghanistan Protection of Civilians in Armed Conflict Midyear Update—2019. https://unama.unmissions.org/sites/default/files/unama_poc_midyear_update_2019_-_30_july_english.pdf

Wang, P. et al. (2018). Social networking sites addiction and adolescent depression: A moderated mediation model of rumination and self-esteem. Personality and Individual Differences, 127, 162–167. https://doi.org/10.1016/j.paid.2018.02.008

Warwimbo, J. K. (2015). THE GRATIFICATIONS SOUGHT FROM SOCIAL MEDIA BY KENYAN USERS AND LEVERAGES FOR LOCAL ICTS DEVELOPMENT. University of Nairobi.

Weiyan, L. (2015). A Historical Overview of Uses and Gratifications Theory. Cross-Cultural Communication (CSCanada, 11(1923–6700), 71–78. https://doi.org/10.3968/7415

World Bank. (2018). GDP per capita (current US$). https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?end=2018&name_desc=false&start=1960&view=chart

Young, K. S. (1998). Internet Addiction Test (IAT) Manual. http://cyberpsy.ru/wp-content/uploads/2018/02/iat-manual.pdf

International Journal of Sport Culture and Science
June 2021 : 9(2)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS.2021.642

Sport And Social Capital And Ethnicity: Case Study of Tabriz's Tractor Football Club In Iran

Hedayat EYDI TARAKAMEH[1]
[1] Selcuk University, Konya, Turkey
https://orcid.org/0000-0001-8378-440X

Email: h.eydihet@gmail.com

Type: Research Article (Received:26.04.2021– Accepted: 05.07.2021)

Abstract

Social capital appeared as a new concept in sociology. This study is based on the social capital approaches, which have been considered as a topic. For shaping the social capital, the social relationship is essential. This is why in this study, the relationship between sport and social capital has been considered. Associated with the topic, the Tractor Tabriz as a football club has been chosen as a case study. The Tractor Tabriz football club is representing the Azeri Turks in the Iranian Super League. As a result, this football club as a sport activate could make social networks among the Azeri Turks ethnic group in Iranian society. Also, the Tractor football club gathered individuals at the same point. Afterward, which provided social capital and social solidarity among the Azeri Turks ethnic group. Therefore, the Tractor Tabriz football club has played an impressive role to be a mass movement of the ethnic and identity demands of the Azeri Turks.

Keywords: Sport, Social capital, Ethnicity, Tractor Tabriz, Iranian Azeri Turks

Introduction

The concept of social capital recently has been appeared as a social phenomenon and one of the most interesting and discussing concepts in social science. In fact, the concept of social capital has been advanced as a scientific resolution for removing social issues which have come out in today's societies. In other words, less social capital in society is one of the reasons for social issues (Echtahadi, 2007: 415). Today's industrialized countries, while developing in economics and industry, have been faced with some social issues and crises. In these societies, the concept of social capital has been conceptualized for resolving social issues and crises. The concept of social capital is found out in the studies of Tocqueville, Durkheim, Weber, Marx, and Tönies (Kemal et al., 2011: 90).

Therefore Lyda Judson Hanifan is known as the first social scientist who used the concept of social capital. Hanifan in an investigation studied social capital and its contribution to USA society in 1916. According to Hanifan the concept of social capital has not to the dimension of economic benefits, but it has conturbation over economic. In addition to that Hanifan used the concept of social capital to demonstrate the affections of social capital in making of social solidarity, social comminution between individual and family, the daily life of people, and in a friendly position (Woolcock et al., 2000:159).

To form social capital, the significance of relationships and having a relationship with others are two essential things. Also keeping up that relationship is significant. In fact, individuals who could not achieve something alone could achieve them together. Individuals by making a social network, become unity with each other by having one or more common worths. In other words, this network is a source for individuals, which could be made capital for them. According to the social approach, individuals by how many people know, via which could have a common opinion and worth with each other, afterward, the social capital could come out as a result for them. According to Putnam, the concept of social capital is defined as among individuals relationship, social network and interactions are bringing up a social trustful situation. Social capital could have some significant social functions in society and human groups such as social trust, social solidarity, or another example the solidarity among an ethnic group. Therefore the social capital could provide common benefit for members f of a group, then organize them to obtain a common purpose in the society (Field, 2006: 6-49). According to the purpose of this study, the society of Iran contains multi-ethnic groups. One of the largest ethnic groups in Iran is the Azeri Turks. Also, they have a better status in Iranıan society. The Azeri Turks people mostly are located in north-eastern Iran. According to Iranıan officials, Turks ethnic groups totally cantain %40 percent of the population of the country (http://shoaresal.ir/fa/news). Recently a representing football club of the Azeri Turks has appeared in Iran. In the Persian language, its official name is Tractor Tabriz. From a point of sociology, this football club representing whole Turks ethnic groups, which has become a cultural and identity symbolic for them. In this context, in every match of this football club, about 50 thousand the Azeri Turks fans follow the club from the stadium. In this study, the becoming of the club as social capital for the Azeri Turks are considered as a topic. This study, based on the social capital approach and tries to respond to the questions such as; how could the football club be a social capital for the Azeri Turks people? How does the football club provide social solidarity and relationship among the Azeri Turks people?

The method of the investigation

In this study regard to the topic of this study and, the combination method of the library study and field study has been selected for presenting exact results. So in this study, the indirectly participant observation has been selected as one of the field studies. To collect the related data the researcher has taken part in the matches of the Tractor club in Tehran and Tabriz. Afterward, the matches and the fans of the Tractor football club several times have been observed by the researcher. So during the observation in the field study, the social behaviors of the fans of the Tractor club particularly their slogans have been observed in the stadium.

Findings

According to both methods theoretically and observation in the field the finding of this study as conceptually categorized such as below:

Social capital and sport and ethnicity

Today's obviously the sport particularly sport like football is a social event. A sport such as a football has millions of followers or admirations across the world. Also, and football club ownerships invest molars dollars annually over the club. This is why within a sociological perspective would be a statement that football is not only a sport. Which includes economic, political, cultural, and representing an identity across the world. The significant point about football as a social sport and a social event is behind it there are a lot of people as fans. The football club is representing them. Somehow the fans belong themselves to the particular club, with particular color and flag and symbol. The fans take part as the viewer in stadiums to watch its match every week. This is why today's football sport and its all matches are more significant for its fans and ownerships across the world. In this study, the relationship between social capital and sport and ethnicity has been considered from a sociological perspective. The concept of ethnicity is considered a social concept in sociology. The concept of ethnicity includes groups of humans which are determined with a shared culture and history and language also, it can have a determined geographic region (Giddens, 2006: 487).

The concept of ethnicity has been appeared after the nation-state and making national identity across the world. Somehow a group of humans with the facility as mentioned above remained out of national identity, the group defined as ethnic groups. Afterward, ethnic groups regard to social transformation across the world, ethnic demands have risen in some countries. Therefore, in some regions of the world, ethnic groups are determined to approve their identity. In this context, ethnic groups used different ways such as media, applications, and sport to approve their rights. Over the past years, the ethnic movement has expanded to sport fields such as football in some points of the region. For example, FC Barcelona and its fans in Spain is a famous example in this case. The fans of the Barcelona football club named their club an army. Also, the club is "more than a club" for the fans of the Barcelona football club (Garcia, 2012:1). Recently the Tractor Tabriz football club has played a role like Barcelona in Iran. According to all materials above, today's sport and particularly a football club can be played an effective role and has more contributions to approve ethnic demands such as the situation of Barcelona. The situation can be happened particularly in multi-ethnic societies, while a football club represents an ethnic group in the society. As the club can assemble its fans with the same ethnic features to fight and demand their whole right from the society, which the ethnic groups inhabited and are a citizen. The is why Kuper describes this situation as "the football against the enemy" (Kuper,1994: 27).

As the fans of a football club such as an ethnic group would use the football against its rival in the field. The fans of a football club by assembling around the football club, along time

common social behavior shapes among fans. Also, this case could happen among an ethnic group. As the club gathers members of the ethnic groups around the club. Afterward, the club could be the ethnic representation and an ethnic symbol for the fans of the club. In fact, during the time-shared social identity, shared social and cultural demand appearance among the fans, then they could come out the issues as demands such as ethnic and identity demands. Eventually, through the club, the social capital develops among the fans of the club. After that as mentioned social trust and social solidarity increase among the fans. Finally, the fans through the club insist on their social right such as ethnicity, identity, etc. The mission of this study is to demonstrate the development of the social capital among the fans of the football club in the case study of Tractor Tabriz football club in Iran. Therefore, it seems that Tractor Tabriz football club could gather many fans with a common language, a common culture, and ethnicity at the same point. This is why in this study the situation has been considered as a sociological phenomenon.

Sport and social capital

In this part of the investigation, the relationship between sport and social capital has been described. Sport is a social concept, this is why it has functions of social, cultural, and health. In this case, there are different studies over functions of sport in social science and psychology. Having health function in a sport is a significant contribution to having a good society. Also, the health effects of it have been determined for individuals.

In addition to it, out of the health function of sport, which has also social function, cultural function, political function, identity function, etc. About having a relationship between sport and social capital, which has already been determined. For example, according to Hall, the sport could be provided social capital for those who are interested in the sport. In other words, sports activities, sports clubs, which could provide social capital to members and sport participation (Hall, 1999: 61). In another investigation, according to Tonts, who has investigated sport in one of the rural of Australia. Found out that, the result of this investigation has demonstrated that sport is one of the significant parts of the lifestyle in this rural. Also according to this investigation, having the relationship between sport and social capital has been determined (Tonts, 2005: 137).

Keaney and Delaney in their research demonstrated the role of sport over social capital between sports activists and sport participation in Britain (Delaney et al., 2005: 1). Therefore, common emotion, common social worth developing among fans of a football club along time. In point of sociology, abundantly generally sports and especially football is considered as a social phenomenon. Fans of a football club assemble under common points. This is why afterward, social solidarity, social relationship, and social identity could be developed among the fans of the football clubs.

Tabriz Tractor football club

Tabriz Tractor was established by the workers of a Tractor factory in Tabriz city, East Azarbaijan province in 1970. The club has been grown over time. The Tractor football club played until 2000-2001 in the Iranian Super League, afterward which dropped down to second division league. But the club tried to come back to super League again. Eventually, the club has been successful to enter the Iranian super League in 2009 year. Tractor after entering to super Liga had successful results. As for the first time, which entered to Asian Champions League in the 2012 season. The significance of this club is having about its lots of fans. Therefore Tractor Tabriz became the first in Asia in having lots of fans. Also, it has been

listed in multi funs club in the world. The whole of Iranıan the Azeri Turks follows the Tractor football club. Also out of Tractor club in the Azeri Turks region, another Iranian football club has rare fans. Fans of Tractor is known as passionate fans in Iran. In this case, Lewis Mia Benfica FC of former player and coach about fans of Tractor said that I have never seen fans of Tractor in my whole life. Tractor has been named as red wolfs by its fans. The fans throw out slogans whole matches such as "yel yatar tufan yatar yatmaz Tractor bayragi". which means the wind sleeps, the storm sleeps but never sleeps the flag of Tractor and "yaşasın Azarbaijan". Which means long live Azerbaijan (http://www.yjc.ir/fa/news).

Recently, especially since 2000, it seems that attention for ethnic identity has been increased in the Iranian Azeri region. Also, they are serious for demand their ethnic rights. This movement and demonstrations of Tractor fans in the stadium evaluated as separation group or Panturkism movement in the region (http://www.jahannews.com).

Being popular of Tractor club between the Azeri Turks and other Turks ethnic groups, this sport phenomenon created this question, for what reason the Tractor club is very popular in the Turk communities of Iran? in the mind of sports experts and politicians, and social science researchers. Absolutely having lots fans for the Tractor Club which was not only for sport or football. According to experts, fans of Tractor by assembling freely and without any cost in the stadium, express their Turk ethnic identity and ethnic rights. This is why the Tractor football club is not merely a sports event for the Azeri Turks community. Thus the Tractor has become a social movement for fans of the Tractor in the Iranian Azeri region. In other words, it seems that the club carries out the Turks ethnic nationalism movement in the region for the fans of the Tractor (http://zamaaneh.com/humanrights). According to Gol sport, the fans of Tractor insist on their ethnic identity. For example the fans of Tractor in all matches, they no pay attention to the results of the match, instead filling the stadium only insists on their ethnic identity. In another word, the fans of Tractor compare themself with Spain's Catalonia region and their FC Barcelona club (http://www.goal.com/iran/news). In this case, Sadr, an Iranian football expert says that we are witness that the fans of Tabriz's Tractor have a common emotion about their homeland. Hence having the same language and ethnicity features among the fans, which developed solidarity and friendship among the fans of Tractor (http://www.hamshahrimags.com).

Some experts evaluate the matches of the Tractor football club is as the scene of a protest for the Azeri Turks people (http://zamaaneh.com/humanrights). Afterward, this event had political reflections and sensitivities, for Iranian officials (http://www.dw-world.de/dw/article).

Tractor football club and social capital

The Tractor Club out of Tabriz particularly in other ethnic Turks groups regions has many fans. Generally, it seems that out of the Tractor other football clubs have no fans in those ethnic Turks regions. These days, using of sports fields particularly football stadiums as a vehicle from some movements such as nationalism and ethnic nationalist discourse has been determined. As the fans can not express their rights and demand in normal conditions, this is why stadiums are a better place for the fans to emphasize their right such as ethnic rights. In this context, demands such as ethnic identity and ethnicity nationalism are usually demanded by the fans of Tractor in stadiums. In whole matches of Tractor, its fans emphasize their ethnic Turks identity and demonstrate it by writing on the banner in the stadium, whenever

Tractor carries out its match in stadium (http://www.dw-world.de/dw/article). As early mentioned, the demonstrations of the fans in the stadium by the Tractor fans had left some political sensitivity in Iranian society (http://www.dw-world.de/dw/article).

According to the purpose of this study and based on the relationship between sport and social capital, since the Pahlavi regime so far, the Azeri Turks' ethnic demands their ethnicity, identity, and cultural rights the Azeri Turks ethnic groups challenge those demands in Iranıan society. But the fans of the Tractor club used it as a tool, eventually, the club became a symbol for them in their region. According to social capital approaches, it could be discussed that the Tractor provides one kind of social capital among the Azeri Turks ethnic group. From Putnam's point of view, social capital comes out as a result of relationships among individuals, which eventually contributed to achieving common benefits among groups or individuals in society. In this context, according to Woolcock, the social capital could be made a powerful continuity among members of a group such as a member of a family or member of an ethnic group existing the social capital into clubs, parties and companies are examples of being social capital at the level of society. Which already has determined (Pir Ahari, 2009: 111-112).

Therefore, based on the topic of this study the significant point is that the Tractor club could gather Turks ethnic group under common value and at the same point, and this was a significant success for the fans of the Tractor. The club by providing relationship among the Azeri Turks, somehow this sport event has become as a social capital among the fans of the Tractor Club. As debated above, social relationships could bring social capital for people who are in a social relationship with each other. In addition to that, the Tractor club contributed to express and exhibit the Azeri Turks' ethnic groups of some ethnic rights such as identity, social, and culture in the Iranian society. This event was calculated as a social opportunity for the Azeri Turks ethnic group in Iran to introduce themself. This is why social trust has been increased among the fans of the Tractor Club over time. In fact, to increase social capital, social trust is an essential step. In other words, the sporting event has become a mass and social movement to approve the Azeri Turks' ethnic identity in Iran. And the Tractor has played a role to approve the Azeri Turks' social, cultural, and ethnic identity in Iranian society. Afterward, it seems that common emotion, common values, common demands social solidarity, and social trust recently have increased among the Azeri Turks people in Iran.

Discussion and Conclusion

In this study, The Tractor Tabriz as a football club has been considered as social capital for Iranian Turks ethnic groups as the fans of this club. Therefore based on the social capital approaches, the relationship between sports particularly football and, social capital has been studied. Turks ethnic groups particularly the Azeri Turks are the largest ethnic groups after Parsian in Iranian demography. Iranian Turks ethnic groups have a long history and are known as one of the native ethnic groups in this region. Since collapsing of the Qajar dynasty and then the rising of the Pahlavi regime, Turks' identity and cultural rights were ignored by the Pahlavi regime in Iran. This is why the Azeri Turks' ethnic groups reacted to the policy of the Pahlavi regime. This ethnic reaction to the Pahlavi policy converted to social movement over past years in Iran. Nowadays this movement is going on under ethnic nationalism in Iranian society. In addition to it, the movement and ethnic rights, due to social and cultural reasons since 2005 became massive like social movement in the Azeri Turks region. One of the significant demands of the Azeri Turks is being officially their mother tongue in Their region. To approve this demand, they attempt to civil movement during the time. In this

context, Tabriz Tractor as a football club entered to Iranian super league again as representation for Tabriz city in the 2009 year. The club is known as a multi- fans club in Iran and Asia. This case is one of the important advantages for the Tractor Club. This is why the Tractor Club owns a good position in Iranian sport. Therefore the club has been determined as Iranian Turks' identity representation and symbol. The Tractor Club has provided social relationships to whole the Azeri Turks in Iran. The Tractor club assembled the whole of the Azeri Turks at the same point and oriented them. Indeed it seems that the Tractor club has an effective contribution to make social solidarity among the Azeri Turks. For example, it has been determined that, in some sensitive matches of the Tractor, more than one hundred fifty thousand fans come to the stadium to watch the match of the Tractor in Tabriz as host. In addition to it, out of Tabriz as host, particularly in Azadi stadium in Tehran the fans of the Tractor full at least half of the stadium. Therefore according to the social capital perspectives, the Tractor eventually could raise the social capital among the Azeri Turks, people.

Briefly, the Tractor club has gathered whole the Azeri Turks at the common point. Afterward, the Tractor has provided social relationships, social trust, and social solidarity among whole Turk ethnic groups particularly the Azeri Turks. Somehow the Tractor has an effective role in obtaining and express the Azeri Turks some social rights such as ethnic rights identity in Iranian society. Eventually, it seems that those demands via the Tractor club have recently been like a massive movement among the Azeri Turks people.

REFERENCES

Ejtehadi, M. (2007). Social Capital. Human Sciences, No. 53, Spring. 2007, 405 – 416.

Woolcock M, Narayan D (2000). Social Capital: Implications for Development Theory Research, and Policy. The World Bank Research Observer, vol 15, no. 2, 225-249. https://doi.org/10.1093/wbro/15.2.225.

Field, J. (2008). Social Capital. London and New York: Routledge.
Kuper, S. (1994). Football Against The Enemy. GB: Orion.

Kemal Şan M, Şimşek R (2011). Sosyal Sermayenin Kavramı Tarihsel- Sosyolojik arkaplanı. Akademik İncelemeler Dergisi, Cilt. 6, Sayı. 1, 88-110.

Pir Ahari, N. (2009). Sermaeheh Echtemadi dar Nazariat Cadid. Journal of social sciences, Vol.3, No.3, 109-131.

Tonts, M. (2005). Competitive Sport and Social Capital in Rural Australia. Journal of Rural Studies, 21,137-149. https://doi.org/10.1016/j.jrurstud.2005.03.001

Hall, P. (1999). Social capital in Britain. British Journal of Political Science, 29 (3), 417-461. DOI: https://doi.org/10.1017/S0007123499000204

Giddens, A. (2006). Sociology, Cambridge UK: Polity Press.

Garcia, G. (2012). Nationalism, Identity, and Fan Relationship Building in Barcelona Football Club. International Journal of Sport Communication, vol. 5(1), 1-15. DOI:10.1123/ijsc.5.1.1

Delaney L, Keaney E (2005). Sport and Social Capital in the United Kingdom: Statistical Evidence from National and International Survey Data. Commissioned by the Department of Culture, Media and Sport,1-42.

Yjc (2013). Ashenai Ba Basheghah Fotbal Traktor Sazi Tabriz, http://www.yjc.ir/fa/news/4321898/ (Accessed 24/04/2021).
Sadr, H. (2010). Barselonai Tabriz, Hamshahri Mosbat, http://www.hamshahrimags.com/NSite/FullStory/Print/?Id=333. (Accessed 18/11/2010).

Gol Sport (2010).Ghozaresh Darbareh Padideh Sal, Tractor Sazi ve Havadaranash, http://www.goal.com/iran/news/1825/,(Accessed 10/05/2011).

Roozbeh, O (2009). Gozarishi Dar Bareh Tractor Sazi Tabriz, Radyo Zamaneh, http://zamaaneh.com/humanrights/2010/02/post_525.html, (Accsessed 20/04/2021) .

Bamanesh B, Farid A (2009). Bazdashteh Taraftaran Tractor Sazi dar Bazi Moghabeleh Sabai Ghom, http://www.dw-world.de/dw/article/0,4990718,00.html, (Accessed 13/04/2020).

Ghahhari K, Malak M (2010). Dost Daram Mardomeh Azarbaijan Ra Shad Bebinam, http://www.dw-world.de/dw/article/0,5349610,00.html, (Accsessed 20/10/2020).

Jahan News (2010). Parcheh Neveshtehhai Zed Irani dar Bazi Esteghlal Tehran va Teraktor Sazi Tabriz, http://www.jahannews.com, (Accsessed 21/01/ 2010).

Shoaresal (2017). Jamiat Torkahi Iran Cheghadr hast?, http://shoaresal.ir/fa/news/56511, (Accsessed 13/04/2021).

International Journal of Sport Culture and Science
June 2021 : 9(2)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS.2021.643

The Effects of Physical Activity on Disease and Mortality

Milan ZELENOVIĆ[1], Danijel BOŽIĆ[1], Nikola AKSOVIĆ[2], George Sebastian IACOB[3], Radica ALEMPIJEVIĆ[4], Bojan BJELICA[1]

[1]University of East Sarajevo, Faculty of Physical Education and Sport, Bosnia and Herzegovina
https://orcid.org/0000-0003-0435-2399
https://orcid.org/0000-0003-1745-5282
https://orcid.org/0000-0001-5539-8210
[2]University of Niš, Faculty of Sport and Physical Education, Serbia
https://orcid.org/0000-0002-5312-3456
[3]Alexandru Ioan Cuza" University of Iaşi, Faculty of Physical Education and Sport, Romania
https://orcid.org/0000-0003-3265-5063
[4]University of Belgrade, Faculty of Pharmacy, Serbia
https://orcid.org/0000-0002-7258-2113

Email: milanzeleni13@gmail.com, dachoni65@hotmail.com, kokir87np@gmail.com, gsiacob95@gmail.com, radicaalempijevic@hotmail.com, vipbjelica@gmail.com

Type: Review Article (Received: 11.06.2021 – Accepted: 02.07.2021)

Abstract

Physical activity (PA) provides great opportunities to improve and maintain health, including reducing the risk of developing and developing various non-communicable diseases, while physical inactivity (PI) is associated with early onset of non-communicable chronic diseases, leading to health problems and mortality from all causes, regardless of other risk factors. Relevant literature reviewed the problem was reviewed, where the goal was to see how phisycal activity affects certain noncommunicable diseases and whether it leads to symptom relief and reduced mortality. The effects of phisycal activity on coronary heart disease and myocardial infarction were positive if moderate aerobic phisycal activity was trained for 3 to 5 weeks for 30 minutes; to obesity, where higher fitness levels were associated with a lower risk of mortality; in type 2 diabetes mellitus, walking and cycling three times a week for 30 to 40 minutes shows little but significant progress in glucose control in diabetics, and the recommendation is to exercise aerobic activities amounting to 55% to 85% of maximum heart rate; and the effects of phisycal activity on cancer, where research has shown that moderate-intensity physical activities, ranging from 210 to 420 minutes per week, have great benefits in reducing the risk of some types of cancer and mortality, and that 150 minutes has shown no major health benefits.

Keywords: physical activity, benefits, diseases, mortality

Introduction

Physical activity (PA) is defined as any body movement caused by skeletal muscles, which results in energy consumption (Caspersen, Powell, & Christenson, 1985).

Non-communicable diseases (NCDs) represent a dominant global and global health interest. According to data published by the World Health Organization (WHO), NCDs, where the dominant role is played by diseases of the heart and blood vessels, carcinogens and diseases of the body, diabetes and chronic respiratory diseases account for 63% of the total number of deaths in children, with more than 14 million people dying between the ages of 30 and 70 (WHO, 2010). Such deaths are estimated to represent 1 in 10 deaths in a wide range of fetuses and are a major risk factor (Lee, Shiroma, Lobelo, Puska, Blair, et al. 2012).

The PA provides a lot of opportunities for development and health preservation, including reducing the risks of various diseases and the functional abilities of those with poor mental, physical and social health (Holtermann, Mortensen, Sogaard, Gyntelberg, & Suadicani, 2012; Arem, Moore, Patel, Hartge, de Gonzalez, et al. 2015; Martinez-Gomez, Guallar-Castillon, Mota, Lopez-Garcia, & Rodriguez-Artalejo, 2015; Hupin, Roche, Gremeaux, Chatard, Oriol, et al. 2015; Barengo, Antikainen, Borodulin, Harald, & Jousilahti, 2017; Higueras-Fresnillo, Guallar-Castillon, Cabanas-Sanchez, Banegas, Rodriguez-Artalejo, et al. 2017; de Oliveira, Oancea, Nucci, & Vogeltanz-Holm, 2018).

The Physical Activity Guidelines Advisory Committee (PAGAC, 2008) has found that scientific evidence indicates that PA decreases risks of premature death, heart stroke, coronary heart disease, hypertension, and type 2 diabetes, colorectal and breast cancer, brain stroke, and uremia, as scientific evidence has shown that PA maintains the functional abilities of older adults, helps prevent weight loss, reduces sleep quality, and reduces the risk of hip fracture and osteoporosis (Blair, Cheng, & Holder, 2001). Thus, 150-300 minutes per week, aerobic PA of moderate intensity is an important health benefit for the older population, a minimum of 150 minutes per week of aerobic PA or 75 minutes per week of aerobic activity of moderate intensity or an equivalent combination of aerobic activity and moderate intensity (WHO, 2010; Arem et al., 2015).

Physical activity and health benefits

Previous researches confirm that PA positively affects health (Boreham & Roddoch, 2001; Pori, M., Pori, P., Pistotnik, Dolenec, Tomažin, et al. 2013). The health benefits of exercise are partially related to the favorable modulations of cardiovascular risk factors observed with increased patterns of PA or structured exercise programs. (Mora, Cook, Buring, Ridker, & Lee, 2007). Thus, PA has positive effects on perception, concentration (Trudeau & Shephard, 2008; Centers for Disease Control and Prevention - CDCP, 2010), and self-respect (Weiss & Williams, 2004; Crocker, Sabiston, Kowalski, McDonough, & Kowalski, 2006; Moreno, Cervelló, & Moreno, 2008), whilst reduce anxiety and stress simultaneously (Flook, Repetti, & Ullman, 2005; Dolenc, 2015). It has preventive and therapeutic effects on several diseases and conditions and contributes to the quality of life in many ways (Physical Activity Guidelines for Americans - PAGA, 2008; Janssen & LeBlanc, 2010; WHO, 2010; Gill, Hammond, Reifsteck, Jehu, Williams, et al. 2013). PA is a key contributor to energy consumption and is also a key contributor to energy balance and weight control, as well as to good health (WHO, 2002; WHO, 2007).

According to Physical Activity Guidelines for Americans, the health benefits of practicing PA are as follows: regular PA reduces the risk of many adverse health outcomes; that any PAs are better than none; for most health outcomes, additional benefits arise as the amount of PA increases with greater intensity, higher frequency, and / or longer duration; most health benefits occur with at least 150 minutes per week of moderate PA, such as brisk walking and additional benefits occur with more PAs; aerobic (endurance) and PA for muscle strengthening (resistance) are useful; health benefits occur in children and adolescents, young and middle-aged people, older adults and people with disabilities; and the benefits of PA far outweigh the possibility of adverse outcomes (PAGA, 2008).

Physical inactivity

Physical inactivity (PI) can be described as a condition in which physical movement is minimal and energy expenditure is close to resting metablism (International Agency for Research on Cancer - IARC, 2002). It is associated with the early onset of non-communicable chronic diseases leading to health problems and death from all causes, regardless of other risk factors (Lee et al., 2012; Ekelund, Steene-Johannessen, Brown, Fagerland, Owen, et al. 2016; Kyu, Bachman, Alexander, Mumford, Afshin, et al. 2016) and it has been identified as the fourth leading factor of global mortality (6% of deaths worldwide). It is just behind high blood pressure (13%), tobacco use (9%), high blood glucose levels (6%), and overweight and obesity which are responsible for 5% of global mortality (WHO, 2009). People who are insufficiently active have a 20% to 30% higher risk of death compared to people who are physically active or practice the recommended amount of PA (WHO, 2010).

Also, PI is a variable risk factor of cardiovascular diseases and a number of other chronic diseases, such as obesity, hypertension, diabetes mellitus, cancer (colon and breast), depression, bone and joint diseases (osteoporosis and osteoarthritis). (Blair et al., 2001; Lee & Skerritt, 2001; Warburton, Gledhill, & Quinney, 2001; Taylor, Brown, Ebrahim, Jolliffe, Noorani, et al.2004). The high risk of developing the mentioned diseases, as well as other health problems, occurs due to the deterioration of physical health and due to insufficient PI. (Balboa-Castillo, Guallar Castillón, León-Muñoz, Graciani, López-García, et al. 2011; Cadore, Rodriguez-Manas,Sinclair, & Izquierdo, 2013).

Effects of PA on coronary disease, myocardial infarction and reduction of mortality

Myocardial infarction is an acute manifestation of coronary artery disease, which affects the heart and blood vessels, where there is a thickening of the inner wall of the arteries, which block or reduce blood flow to the heart, causing damage to the heart muscle (Lu, Liu, Sun, Zheng, & Zhang, 2015). This disease is considered to be one of the most well-known cardiovascular diseases (WHO, 2016) which can create major problems when it comes to the physical, mental and social aspects of life and is the leading cause when it comes to morbidity and mortality (Feitosa-Filho, Baracioli, Barbosa, Franci, Timerman, et al. 2015).

Current evidence suggests that regular FA has the greatest benefit for heart health (Nocon, Hiemann, Müller-Riemenschneider, Thalau, Roll, et al. 2008; PAGA, 2008; Warburton, Charlesworth, Ivey, Nettlefold, & Bredin, 2010) and that men who maintain an active lifestyle have 50% lower risk of death or disease (Myers, Kaykha, George, Abella, Zaheer, et al. 2004), and when it comes to women the risk reduction is between 30-40% (Manson, Greenland, LaCroix, Stefanick, Mouton, et al. 2002). By maintaining an active lifestyle and a moderate level of aerobic capacity, ie. general endurance, reduced mortality due to coronary heart disease is reduced. Regular walking leads to a reduction in the incidence of cardiovascular diseases (Sesso, Paffenberger, & Lee, 2000). Also, cycling to work (Andersen,

Schnohr, Schroll, & Hein, 2000) and four hours of recreational activities per week (Wannamathee, Shaper, & Alberti, 2000) are associated with a reduced risk of heart diseases. Consumption of minimum of 800 kcal (kilocalories) per week is associated with reduced risk of health problems,and a physically active lifestyle is useful in the rehabilitation of heart disease, with exercise-based recovery reducing the secondary mortality rate by about 27% (Jolliffe, Rees, Raylor, Thompson, Oldridge, et al. 2001).

Exercise alone is crucial in rehabilitation just after myocardial infarction. Aerobic endurance training, dynamic training, as well as training to improve coordination and flexibility are specific recommendations for PA as part of a rehabilitation program (Bjarnason-Wehrens, Held, Hoberg, Karoff, & Rauch, 2007). What is important before the implementation of the program is to define the current level of training, as well as the risk that may occur due to PA based on the results of initial testing, the exercise program is modified based on current exercise capacity risk factors, motivation and tolerance (Fletcher , Ballads, Amsterdam, Chaitman, Eckel, et al., 2001; Ozgun et al., 2017).

The protective effect of PA from the mentioned non-communicable diseases is associated approximately 750-2000 kcal per week of moderate-intensity exercise, ie walking or running about 12-32 kilometers per week (Dishman, Heath, & Washburn, 2004). Also, a significant reduction in mortality risk, from 20 to 30%, was associated with energy consumption of approximately 1000 kcal, which was confirmed based on a review of 44 epidemiological studies and that the risk of mortality decreases with increasing PA of moderate intensity (Lee, & Skerritt, 2001; Myers et al., 2004). Dosed, controlled, and continuous PA reduces mortality, and the risk of complications during PA is negligible, especially if walking is practiced. Patients with a lower clinical picture should exercise moderate aerobic PA 3 to 5 times per week for 30 minutes under supervision in order to reduce the risk of death (WHO, 2010).

Effects of PA on obesity and reduction of mortality

Obesity is defined as the accumulation of excess body fat, usually ≥25% of total body weight for males and ≥33% for females (WHO, 1998). Overweight and obesity are associated with a higher risk of hypertension, coronary heart disease, stroke, type 2 diabetes, some types of cancer (breast, prostate) (Flegal, Graubard, Williamson, & Gali, 2007; Renehan, Tyson, Egger, Heller, & Zwahlen, 2008). Obesity not only directly increases the risk of coronary heart disease, but also indirectly increases it through its negative effects on several identified risk factors, including insulin resistance and hypertension (Kokkinos, 2012).

The decline in PA levels in daily life is a significant factor in the dramatic increase in the prevalence of overweight and obesity in Europe, where there is evidence that those who maintain a physically active lifestyle gain less weight with age than inactive people (PAGAC, 2008). Several studies have shown that an active lifestyle and daily PA play a significant role in obesity prevention (Di Pietro, 1999; Fogelholm & Kukkonen-Harjula, 2000). PA itself has an effect on weight loss and subcutaneous adipose tissue in combination with a programmed diet, which is an ideal formula in the correction of body structure (Wing, 1999; Donnelly, Blair, Jakicic, Manore, Rankin, et al. 2009) and easier maintain or reduce body weight for a longer period of time than individuals who rely solely on a diet (Wing, 1999).

There is also an inverse dose-response relationship, where those with the highest FA levels have the least chance of becoming obese with age, which can be a health problem and cause other diseases that can affect mortality and will require higher PA levels than recommended. to prevent this (PAGA, 2008; Moholdt, Wisløff, Lydersen, & Nauman, 2014). Interventional

studies have shown relatively moderate weight loss achieved by structured PA programs. However, the findings of large epidemiological studies support the concept that reduced mortality occurs in more active individuals regardless of body weight (King, Fitzhugh, Bassett, McLaughlin, Strath, et al. 2001), and that higher fitness levels were associated with a lower risk of mortality in males with normal weight, overweight and obesity (Wei, Kampert, Barlow, Nichaman, Gibbons, et al. 1999).

Effects of PA on type 2 diabetes melitus and reduction of mortality

Type 2 diabetes mellitus (T2DM) is a set of metabolic changes with different etiologies characterized by chronic hyperglycemia associated with changes in glucose, lipid, and protein metabolism due to insulin deficiency (WHO, 2016). Risk factors for DMT2 development include obesity, physical inactivity, age, smoking (CDC, 2012) and are the result of a complex interaction of environmental and genetic components, where there is strong evidence that such modified risk factors as obesity and physical inactivity are major nongenetic determinants of disease. (Tuomilehto, Lindström, Eriksson, Valle, Hämäläinen, et al. 2001). Most people with T2DM do not practice any type of PA, so the daily values of energy expenditure are significantly lower compared to people without the presence of a patient (Morrato, Hill, Wyatt, Ghushchyan, & Sullivan, 2007; Fagour, Gonzalez, Pezzino, Florenty, Rosette-Narece, et al. 2013; Balducci, D'Errico, Haxhi, Sacchetti, Orlando, et al. 2019), and PA deficiency and sedentary lifestyle are separate factors for the development of cardiovascular disease and increased mortality from T2DM (Biswas, Oh, Faulkner, Bajaj, Silver, et al. 2015; Sortsoe, Green, Jensen, & Emneus, 2016).

PA is one of the most important therapeutic steps in the treatment of people with T2DM (Hamasaki, 2016; Advika, Idiculla, & Kumari, 2017; Mohamed, Mahfouz, & Badr, 2020) and one of the best means of nonpharmacological treatment (Colberg, 2015). Regular physical exercise is an effective means of improving glycemia, reducing insulin resistance and stimulating insulin secretion (Hamasaki, 2016). Epidemiological findings also support that increased PA is associated with a lower risk of mortality in people with T2DM and the risk of all-cause mortality for diabetics with poor condition is more than 2 times higher compared to physically fit diabetics in both sexes, regardless of physical weight (Wei, Gibbons, Kampert, Nichaman, & Blair, 2000; Hu, Stampfer, Solomon, Liu, Colditz, et al. 2001; Church, LaMonte, Barlow, & Blair, 2005).

It was found, in a study of almost 6,000 male subjects, that for every 500 calories consumed per week due to PA, the risk of developing T2DM was reduced by 6% (Helmrich, Ragland, Leung, & Paffenbarger, 1991) and that any level of PA , in a cohort study of over 34,000 female subjects, reduced the risk of T2DM compared with a sedentary lifestyle (Folsom, Kushi, & Hong, 2000). Studies in the program, which included walking and cycling three times a week for 30 to 40 minutes, showed small but significant advances in glucose control in diabetics (Venditti, 2007) and that the most effective intensity of aerobic activity depends on individual characteristic of a T2DM sufferer, but is recommended to be 55% to 85% of the maximum heart rate (Achten & Jeukendrup, 2004).

Effects of PA on cancer and reduction of mortality

After heart disease, cancer is the second leading cause of death in Europe and routine PA, whether occupational or leisure, is associated with a reduced incidence of overall risk of developing the disease (Thune & Furberg, 2001; Lee, 2003). Cancer, as well as coronary heart disease, can be prevented to some extent by several risk factors, such as poor diet, obesity, or

physical inactivity. By improving some of these factors, regular exercise can explain the benefits of cancer mortality (Warburton et al., 2010).

Evidence of preventive action gave the best results for colon and breast cancer, where physically active men and women showed a 30-40% reduction in the relative risk of developing colon cancer, and women 20-30% reduction in the relative risk of developing breast cancer, compared with inactivity (Lee, 2003). Also, moderate and high-intensity activities have the most positive effects on the occurrence of colon cancer, reducing the risk of its occurrence by 40-50% (Lund Nilsen & Vatten, 2001).

Mechanisms by which PA can contribute to reducing cancer formation may be reduced inflammation (reduction of long-term intestinal inflammation, which can help reduce colon cancer), improved immune function, which allows to fight cancer, improved hormone balance, which reduces the likelihood of cancer who use hormones for growth and spread, such as breast cancer (Warburton et al., 2010). PA also has a positive effect on reducing the risk of lung cancer, with a risk reduction of about 40% (Tardon, Lee, Delgado-Rodriguez, Dosemeci, Albanes, et al. 2005), while there is no effect on reducing the incidence of prostate and testicular cancer (Dumitrescu & Cotarla, 2005).

Studies have shown that PAs of moderate intensity, ranging from 210 to 420 minutes per week, have great benefits, in order to reduce the risk of some cancers, as well as mortality, and that 150 minutes has not shown great health benefits. Furthermore, people who have been diagnosed with cancer and are physically active have a better quality of life than those who do not practice PA (PAGA, 2008). Little attention has been paid to the impact of PA in the treatment of cancer patients, where there is no evidence that disease progression can be reduced by exercise, but research has shown that PA has a positive effect on quality of life, where psychological well-being, reduction of fatigue and nausea (Gotay, 2005).

Conclusıon

Physical activity (PA) plays a very important role in protecting and improving health. Research has shown that regular PA brings multiple health benefits and reduces mortality from non-communicable diseases associated with any cause. Involvement in activities of any type, from insufficient to recommended, can reduce mortality among adults who have not been active enough.

High levels of PA reduce the risk of mortality from all causes, ie by increasing from inactive or low levels, through moderate to high or strong, the percentage of deaths decreases, which clearly proves the health benefits of PA.The purpose and importance of the research must be stated at the end of the introduction.

REFERENCES

Achten, J., Jeukendrup, A.E. (2004). Optimizing fat oxidation through exercise and diet. Nutrition, 20(7-8): 716-727.

Advika, T. S., Idiculla, J., Kumari, S.J. (2017). Exercise in patients with Type 2 diabetes: Facilitators and barriers - A qualitative study. Journal of family medicine and primary care, 6(2): 288–292.

American College of Sports Medicine - ACSM's. (2010). Guidelines for Exercise Testing and Prescription. 8th ed. USA, Philadelphia: Lippincott Williams & Wilkins.

Andersen, L.B., Schnohr, P., Schroll, M., Hein, H.O. (2000). All-Cause Mortality Associated With Physical Activity During Leisure Time, Work, Sports, and Cycling to Work. Archives of Internal Medicine, 160: 1621-1628.

Arem, H., Moore, S.C., Patel, A., Hartge, P., de Gonzalez, A.B., Visvanathan, K., Campbell, P.T., Freedman, M.,Weiderpass, E., Adami, H.O., Linet, M.S., Lee, I-M., & Matthews, C.E. (2015). Leisure Time Physical Activity and Mortality: A Detailed Pooled Analysis of the Dose-Response Relationship. JAMA Internal Medicine, 175(6): 959-967.

Balboa-Castillo, T., Guallar-Castillón, P., León-Muñoz, L.M., Graciani, A., López-García, E., Rodríguez-Artalejo, F. (2011). Physical activity and mortality related to obesity and functional status in older adults in Spain. American Journal of Preventive Medicine, 40(1): 39-46.

Balducci, S., D'Errico, V., Haxhi, J., Sacchetti, M., Orlando, G., Cardelli, P., Vitale, M., Bollanti, L., Conti, F., Zanuso, S., Lucisano, G., Nicolucci, A., Pugliese, G. (2019). Effect of a behavioral intervention strategy on sustained change in physical activity and sedentary behavior in patients with type 2 diabetes: the IDES_2 randomized clinical trial. Journal of the American Medical Association, 321(9): 880–890.

Barengo, N.C., Antikainen, R., Borodulin, K., Harald, K., Jousilahti, P. (2017). Leisure-time physical activity reduces total and cardiovascular mortality and cardiovascular disease incidence in older adults. Journal of the American Geriatrics Society, 65(3): 504-510.

Biswas, A., Oh, P.I., Faulkner, G.E., Bajaj, R.R., Silver, M.A., Mitchell, M.S., & Alter, D.A. (2015). Sedentary time and its association with risk for disease incidence, mortality, and hospitalization in adults: a systematic review and meta-analysis. Annals of internal medicine, 162(2): 123-132.

Bjarnason-Wehrens, B., Held, K., Hoberg, E., Karoff, M., Rauch, B. (2007). Deutsche Leitlinie zur Rehabilitation von Patienten mit Herz-Kreislauferkrankungen (DLL-KardReha). Clinical research in cardiology supplements, 2(3): 1-54.

Bjelica, B., Milanović, Lj., Aksović, N., Zelenović, M., Božić, D. (2020). Effects physical activity to cardiorespiratory changes. Turkish Journal of Kinesiology, 6(4): 164-174.

Blair, S.N., Cheng, Y., & Holder, J.S. (2001). Is Physical Activity or Physical Fitness More Important in Defining Health Benefits? Medicine and Science in Sports and Exercise, 33: S379-S399.

Boreham, C., Riddoch, C. (2001). The physical activity, fitness and health of children. Journal of Sports Sciences, 19(12): 915–929.

Cadore, E.L., Rodriguez-Manas, L., Sinclair, A., Izquierdo, M. (2013). Effects of different exercise interventions on risk of falls, gait ability, and balance in physically frail older adults: A systematic review. Rejuvenation Research, 16(2): 105-114.

Caspersen, C.J., Powell, K.E., Christenson, G.M. (1985). Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. Public Health Reports, 100(2): 126-131.

Centers for Disease Control and Prevention - CDCP (2012). Increasing prevalence of diagnosed diabetes - United States and Puerto Rico, 1995-2010. Morbidity and mortality weekly report, 61(45): 918-921.

Church, T.S., LaMonte, M.J., Barlow, C.E., Blair, S.N. (2005). Cardiorespiratory fitness and body mass index as predictors of cardiovascular disease mortality among men with diabetes. Archives of Internal Medicine, 165(18): 2114–2120.

Colberg, S.R. (2015). Exercise as Medicine for Diabetes: Prescribing Appropriate Activities and Avoiding Potential Pitfalls: Preface. Diabetes Spectrum, 28(1): 10-13.

Crocker, P.R.E., Sabiston, C.M., Kowalski, K.C., McDonough, M.H., Kowalski N. (2006). Longitudinal assessment of the relationship between physical self-concept and health-related behavior and emotion in adolescent girls. Journal of Applied Sport Psychology, 18(3): 185–200.

de Oliveira, G.D., Oancea, S.C., Nucci, L.B., Vogeltanz-Holm, N. (2018). The association between physical activity and depression among individuals residing in Brazil. Social psychiatry and psychiatric epidemiology, 53(4): 373-383.

Di Pietro, L. (1999). Physical activity in the prevention of obesity: current evidence and research issues. Medicine & Science in Sports & Exercise, 31, S542-546.

Dishman, R., Heath, G., & Washburn, R. (2004). Physical activity epidemiology. Champaign, USA, Illinois: Human Kinetics.

Dolenc, P. (2015). Anxiety, self-esteem and coping with stress in secondary school students in relation to involvement in organized sports. Zdravstveno varstvo, 54(3): 222–229.

Donnelly, J.E., Blair, S.N., Jakicic, J.M., Manore, M.M., Rankin, J.W., Smith, B.K. (2009). Appropriate Physical Activity Intervention Strategies for Weight Loss and Prevention of Weight Regain for Adults. Medicine and Science in Sports and Exercise, 41(2): 459–471.

Dumitrescu, R.G., Cotarla, I. (2005). Understanding breast cancer risk - where do we stand in 2005? Journal of cellular and molecular medicine, 9(1): 208-221.

Ekelund, U., Steene-Johannessen, J., Brown, W.J., Fagerland, M.W., Owen, N., Powell, K.E., Bauman, A., Lee, I.M. (2016). Does physical activity attenuate, or even eliminate, the detrimental association of sitting time with mortality? A harmonised meta-analysis of data from more than 1 million men and women. The Lancet, 388(10051): 1302–1310.

Fagour, C., Gonzalez, C., Pezzino, S., Florenty, S., Rosette-Narece, M., Gin, H., Rigalleau, V. (2013). Low physical activity in patients with type 2 diabetes: the role of obesity. Diabetes and metabolism, 39(1): 85-87.

Feitosa-Filho, G.S., Baracioli, L.M., Barbosa, C.J.D.G., Franci, A., Timerman, A., Soares Piegas, L., Marin-Neto, J.A., Nicolau, J.C. (2015). SBC Guidelines on unstable angina

and non-ST-elevation myocardial infarction: executive summary. Arquivos brasileiros de cardiologia, 105(3): 214-227.

Flegal, K.M., Graubard, B.I., Williamson, D.F., Gali, M.H. (2007). Cause-Specific Excess Deaths Associated With Underweight, Overweight, and Obesity. JAMA, 298(17): 2028-2037.

Fletcher, G.F., Balady, G.J., Amsterdam, E.A., Chaitman, B., Eckel, R., Fleg, J., Froelicher, V.F., Leon, A.S., Piña, I.L., Rodney, R., Simons-Morton, D.A., Williams, M.A., Bazzarre, T. (2001). Exercise standards for testing and training: a statement for healthcare professionals from the American Heart Association. Circulation, 104(14): 1694-1740.

Flook, L., Repetti, R.L., Ullman, J.B. (2005). Classroom social experiences as predictors of academic performance. Developmental Psychology, 41(2): 319–327.

Fogelholm, M., Kukkonen-Harjula, K. (2000). Does physical activity prevent weight gain: A sistematic review. Obesity reviews: an official journal of the International Association for the Study of Obesity, 1(2): 95-111.

Folsom, A.R., Kushi, L.H., Hong, C.P. (2000). Physical activity and incident diabetes mellitus in postmenopausal women. American Journal of Public Health 90(1): 134-138.

Gill, D.J., Hammond, C.C., Reifsteck, E.J., Jehu, C.M., Williams, R.A., Adams, M.M., Lange, E.H., Becofsky, K., Rodriguez, E., Shang, Y-T. (2013). Physical activity and quality of life. Journal of Preventive Medicine and Public Health, 46(1): S28-34.

Gotay, C.C. (2005). Behavior and cancer prevention. Journal of clinical oncology: official journal of the American Society of Clinical Oncology, 23(2): 301-310.

Hamasaki H. (2016). Daily physical activity and type 2 diabetes: A review. World journal of diabetes, 7(12): 243–251.

Helmrich, S.P., Ragland, D.R., Leung, R.W., Paffenbarger, R.S. (1991). Physical activity and reduced occurrence of non-insulin-dependent diabetes mellitus. The New England journal of medicine, 325(3): 147-152.

Higueras-Fresnillo, S., Guallar-Castillon, P., Cabanas-Sanchez, V., Banegas, J.R., Rodriguez-Artalejo, F., Martinez-Gomez, D. (2017). Changes in physical activity and cardiovascular mortality in older adults. Journal of Geriatric Cardiology, 14(4): 280–281.

Holtermann, A., Mortensen, O.S., Sogaard, K., Gyntelberg, F., Suadicani, P. (2012). Risk factors for ischaemic heart disease mortality among men with different occupational physical demands. A 30-year prospective cohort study. BMJ Open, 2(1): e000279.

Hu, F.B., Stampfer, M.J., Solomon, C., Liu, S., Colditz, G.A., Speizer, F.E., Willett, W.C., Manson, J. E. (2001). Physical activity and risk for cardiovascular events in diabetic women. Annals of Internal Medicine, 134(2): 96–105.

Hupin, D., Roche, F., Gremeaux, V.,Chatard, J.C., Oriol, M., Gaspoz, J.M., Barthélémy, J.C., Edouard, P. (2015). Even a low-dose of moderate-to-vigorous physical activity reduces mortality by 22% in adults aged 60 years: a systematic review and metaanalysis. British journal of sports medicine, 49(19): 1262-1267.

IARC (International Agency for Research on Cancer) (2002). IARC Handbooks for Cancer Prevention, Volume 6: Weight Control and Physical Activity. IARC Press, France: Lyon.

Janssen, I., LeBlanc, A.G. (2010). Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. International Journal of Behavioural Nutrition and Physical Activity, 7: 40. doi: 10.1186/1479-5868-7-40.

Jolliffe, J.A., Rees, K., Raylor, R.S., Thompson, D., Oldridge, N., Ebrahim, S. (2001). Exercise-based rehabilitation for coronary heart disease. The Cochrane database of systematic reviews, 1: CD001800.

King, G.A., Fitzhugh, E.C., Bassett, D.R., McLaughlin, J.E., Strath, S.J., Swartz, A.M., Thompson, D.L. (2001). Relationship of leisure-time physical activity and occupational activity to the prevalence of obesity. International Journal of Obesity, 25(5): 606–612.

Kokkinos, P.F. (2012). Physical activity, health benefits, and mortality risk. ISRN Cardiology, 718789.

Kyu, H.H., Bachman, V.F., Alexander, L.T., Mumford, J.E., Afshin, A., Estep, K., Veerman, J.L., Delwiche, K., Iannarone, M.L., Moyer, M.L., Cercy, K., Vos, T., Murray, C.J., Forouzanfar, M.H. (2016). Physical activity and risk of breast cancer, colon cancer, diabetes, ischemic heart disease, and ischemic stroke events: systematic review and dose-response meta-analysis for the Global Burden of Disease Study 2013. BMJ, 354: i3857.

Lee, I.M., Skerritt, P.J. (2001). Physical activity and all-couse mortality: what is the dose-response relation? Medicine and Science in Sports and Exercise, 33(6): S459-S471.

Lee, I.M. (2003). Physical activity and cancer prevention - data from epidemiologic studies. Medicine and science in sports and exercise, 35(11): 1823-1827.

Lee, I.M., Shiroma, E.J., Lobelo, F., Puska, P., Blair, S.N., Katzmarzyk, P.T. (2012). Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. The Lancet, 380(9838): 219–229.

Lund Nilsen, T.I., Vatten, L.J. (2001). Prospective study of colorectal cancer risk and physical activity, diabetes, blood glucose, and BMI: exploring, the hyperinsulinemia hypothesis. British journal of cancer, 84(3): 417-422.

Lu, L., Liu, M., Sun, R.R., Zheng, Z., Zhang, P. (2015). Myocardial Infarction: Symptoms and Treatments. Cell biochemistry and biophysics, 72(3): 865-867.

Manson, J.E., Greenland, P., LaCroix, A.Z., Stefanick, M.L., Mouton, C.P., Oberman, A., Perri, M.G., Sheps, D.S., Pettinger, M.B., Siscovick, D. S. (2002). Walking compared with vigorous exercise for the prevention of cardiovascular events in women. The New England journal of medicine, 347(10): 716-725.

Martinez-Gomez, D., Guallar-Castillon, P., Mota, J., Lopez-Garcia, E., Rodriguez-Artalejo, F. (2015). Physical activity, sitting time and mortality in older adults with diabetes. International Journal of Sports Medicine, 36(14): 1206–1211.

Mohamed, B.A., Mahfouz, M.S., Badr, M.F. (2020). Physical activity and its associated factors in females with type 2 diabetes in Riyadh, Saudi Arabia. PLoS ONE, 15(10): e0239905.

Moholdt, T., Wisløff, U., Lydersen, S., Nauman, J. (2014). Current physical activity guidelines for health are insufficient to mitigate long-term weight gain: more data in the fitness versus fatness debate (The HUNT study, Norway). British journal of sports medicine, 48(20): 1489-1496.

Mora, S., Cook, N., Buring, J.E., Ridker, P.M., Lee, I.M. (2007). Physical activity and reduced risk of cardiovascular events: potential mediating mechanisms. Circulation, 116(19): 2110–2118.

Morrato, E.H., Hill, J.O., Wyatt, H.R., Ghushchyan, V., Sullivan, P.W. (2007). Physical activity in U.S. adults with diabetes and at risk for developing diabetes, 2003. Diabetes Care, 30(2): 203–209.

Moreno, J.A., Cervelló, E., Moreno, R. (2008). The importance of physical-sport prac-tice and gender in physical self-concept from 9 up to 23 years. International Journal of Clinical Health Psychology, 8(1): 171–183.

Myers, J., Kaykha, A., George, S., Abella, J., Zaheer, N., Lear, S., Yamazaki, T., Froelicher, V. (2004). Fitness versus physical activity patterns in predicting mortality in men. The American journal of medicine, 117(12): 912-918.

Nocon, M., Hiemann, T., Müller-Riemenschneider, F., Thalau, F., Roll, S., & Willich, S.N. (2008). Association of physical activity with all-cause and cardiovascular mortality: a systematic review and meta-analysis. European journal of cardiovascular prevention and rehabilitation, 15(3): 239-246.

Ozgun, A., Yasarturk, F., Ayhan, B. & Bozkus, T. (2017). Examination of handball players' levels of sports-specific achievement motivation and happiness. International Journal of Cultural and Social Studies (IntJCSS), 3, 83–94.

Pantelić, S., Ranđelović, N., Milanović, Z., Trajković, N., Sporiš, G., Kostić, R. (2012). Physical activity of elderly women in terms of age. FACTA UNIVERSITATIS, Series: Physical Education and Sport, 10(4): 289-296.

Physical Activity Guidelines Advisory Committee - PAGAC (2008). Physical Activity Guidelines Advisory Committee Report. Washington, DC: U.S. Department of Health and Human Services.

Physical Activity Guidelines for Americans - PAGA (2008). Be Active, Healthy, and Happy! Washington, DC: U.S. Department of Health and Human Services.

Pori, M., Pori, P., Pistotnik, B., Dolenec, A., Tomažin, K., Štirn, I., Marejič, M. (2013). Športna rekreacija [Sports recreation]. Ljubljana: Športna unija Slovenije.

Renehan, A.G., Tyson, M., Egger, M., Heller, R.F., Zwahlen, M. (2008). Body-mass Index and Incidence of Cancer: A Systematic Review and Meta-analysis of Prospective Observational Studies. The Lancet 371(9612): 569-578.

Sesso, H.D., Paffenberger, R.S.Jr., Lee, I.M. (2000). Physical activity and coronary hearth disease in men: The Harvard Alumni Health Study. Circulation, 102(9): 975-980.

Sortsoe, C., Green, A., Jensen, P.B., Emneus, M. (2016). Societal costs of diabetes mellitus in Denmark. Diabetic medicine: a journal of the British Diabetic Association, 33(7): 877–885.

Tardon, A., Lee, W.J., Delgado-Rodriguez, M., Dosemeci, M., Albanes, D., Hoover, R., Blair, A. (2005). Leisure-time physical activity and lung cancer: a meta-analysis. Cancer Causes and Control: CCC, 16(4): 389-397.

Taylor, R.S, Brown, A., Ebrahim, S., Jolliffe, J., Noorani, H., Rees, K., Skidmore, B., Stone, J.A., Thompson, D.R., Oldridge, N. (2004). Exercise-based rehabilitation for

patients with coronary heart disease: systematic review and meta-analysis of randomized controlled trials. The American journal of medicine, 116(10): 682-692.

Trudeau, F., Shephard, R.J. (2008). Physical education, school physical activity, school sports and academic performance. International Journal of Behavioral Nutrition and Physical Activity,5(1): 10.

Thune, I., Furberg, A.S. (2001). Physical activity and cancer risk: dose-response and cancer, all sites, and site-specific. Medicine and science in sport and exercise, 33(6), S530-550.

Tuomilehto, J., Lindström, J., Eriksson, J., Valle, T.T., Hämäläinen, H., Ilanne-Parikka, P., Keinänen-Kiukaanniemi, S., Laakso, M., Louheranta, A., Rastas, M., Salminen, V., Uusitupa, M. (2001). Prevention of type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. The New England journal of medicine, 344(18): 1343-1350.

Venditti, E.M. (2007). Efficacy of lifestyle behavior change programs in diabetes. Current diabetes reports, 7(2), 123-127.

Wannamathee, S. G., Shaper, A. G., & Alberti, K. G. (2000). Physical activity, metabolic factors and the incidence of coronary heart disease and type 2 diabetes. Archives of Internal Medicine, 160: 2108-2116.

Warburton, D.E., Gledhill, N., Quinney, A. (2001). Musculoskeletal fitness and health. Canadian journal of applied physiology, 26(2): 217-237.

Warburton, D.E., Charlesworth, S., Ivey, A., Nettlefold, L., Bredin, S.S. (2010). A systematic review of the evidence for Canada's Physical Activity Guidelines for Adults. The international journal of behavioral nutrition and physical activity, 7: 39. doi: 10.1186/1479-5868-7-39.

Wei, M., Kampert, J.B., Barlow, C.E., Nichaman, M.Z., Gibbons, L.W., Paffenbarger, R.S., Blair, S.N. (1999). Relationship between low cardiorespiratory fitness and mortality in normal-weight, overweight, and obese men. JAMA, 282(16): 1547–1553.

Wei, M., Gibbons, L.W., Kampert, J.B., Nichaman, M.Z., Blair, S.N. (2000). Low cardiorespiratory fitness and physical inactivity as predictors of mortality in men with type 2 diabetes. Annals of Internal Medicine, 132(8): 605–611.

Weiss, M.R., Williams, L. (2004). The why of youth sport involvement: a developmen-tal perspective on motivation processes. In M.R. Weiss (Ed.), Developmental sport and exercise psychology: A lifespan perspective (pp 223–268). Morgantown, WV: Fitness Information Technology.

Wing, R.R. (1999). Physical activity in the treatment of the adulthood overweight and obesity: current evidence and research issues. Medicine and Science in Sports and Exercise, 31: S547-552.

World Health Organization (1998). Obesity: Preventing and Managing the Global Epidemic. Geneva: Switzerland. World Health Organization.

World Health Organization (2002). World Health Report 2002: Reducing risks, promoting healthy life. Geneva: Switzerland. World Health Organization.

World Health Organization (2007). A guide for population-based approaches to increasing levels of physical activity: implementation of the WHO Global Strategy on Diet, Physical Activity and Health. Geneva: Switzerland. World Health Organization.

World Health Organization (2009). Global health risks: mortality and burden of disease attributable to selected major risks. Geneva: Switzerland. World Health Organization.

World Health Organization (2010). Global Recommendations on Physical Activity for Health. Geneva: Switzerland. World Health Organization.

World Health Organization (2016). Diet and physical activity: a public health priority. Geneva: Switzerland. World Health Organization.

International Journal of Sport Culture and Science
June 2021 : 9(2)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS.2021.644

The Effects of the Number of Foreign Players and Market Values of the Super League Clubs on the Sports Success of the Clubs

Hacı Şükrü TAŞTAN
Niğde Ömer Halisdemir University, Niğde, Turkey
https://orcid.org/0000-0001-5082-4698

Email: h.sukrutastan@ohu.edu.tr

Type: Research Article (Received:11.06.2021– Accepted: 02.07.2021)

Abstract

The aim of this article is to analyze the effect of the number of foreign players and market values of the Super League teams on the sportive success of the clubs. In this context, the number of foreign players and market values of football clubs competing in the Super League between 2015-2020 and their end-of-season league rankings are listed. With the obtained data, the effect of the number of foreign players of the clubs and the market values of the clubs on the sportive success of the clubs were investigated. In the research, mixed method research was preferred by using qualitative and quantitative research methods. The research is an exploratory mixed research in terms of its purpose. The population of the research consists of the Super League professional football teams that competed in all 5 seasons between 2015-2020. The data obtained from the transfermarket market values, the number of foreign players and the averages of the league success rankings of the football teams competing between the years 2015-2020 were classified and grouped. Then, correlation analysis was performed with SPSS analysis program. According to the research results; As the number of foreign players of the teams competing in the Super League between 2015-2020 increases, the market values of the teams increase, but the league rankings decrease. The decrease in the league rankings is interpreted as the teams rising to the top ranks and being more successful in terms of sports. In addition, according to the findings obtained from the results of the correlation analysis of nine successful teams that competed in the Super League for 5 years without a break, it is seen that the values of the teams affect the sportive success of the teams rather than the number of foreign players.

Keywords: Football clubs, Financial success, Sportive success.

Introduction

According to the report published by the Union of European Football Associations (UEFA) on the financial situation of European leagues and clubs, it is seen that Turkish football clubs are the most indebted football clubs in Europe. Turkish Super League clubs are in the last place in the financial position ranking of European clubs with a total loss of 263 million euros. In the report, in the ranking of the clubs with the most debt in Europe, Fenerbahçe Football Club (FC) in the list of 20 teams. 6th place, Beşiktaş FC 15th place, Galatasaray FC and is ranked 17th (UEFA, 2020). The three most profitable big leagues in Europe are England, Spain and Germany. In addition, it was stated that Beşiktaş FC made a financial violation due to the failure of the UEFA Club Financial Control Board (CFCB) judicial unit to pay on time with the decision made within the framework of Financial Fair Play (FFP), and that 15 percent of the income from UEFA participation in the 2021-2022 season will be confiscated. It is emphasized that if Football Club makes the payment, the penalty will be lifted (Fanatik, 2021).

Galatasaray, Fenerbahçe, Beşiktaş and Trabzonspor football clubs transferred a total of 120 football players in the 2014-2017 seasons by paying 195 million 445 thousand euros. It is emphasized that this may harm the Turkish football economy (Yüce et al., 2017). It is necessary for football clubs to train players from the infrastructure of the clubs instead of transferring foreign players, to increase the transfer of foreign players to levels that will not harm Turkish football, to use club infrastructures more effectively and efficiently, to provide the opportunity to play in professional football clubs in order to show and develop the skills of the players trained in the infrastructure. It is emphasized that instead of using the foreign player limitation as if there is a necessity in football clubs, the importance of acting by evaluating the financial status of the clubs is emphasized (Şahin et al., 2019).

The fact that clubs spend more than their income causes club expenses to become uncontrollable day by day. In addition, the addition of exchange rate difference and bank interest to the existing debts of the clubs increases the costs of the clubs' borrowing (Sevim & Bülbül, 2017).

There is no legal responsibility for the prevention of excessive borrowing of managers in the management of football clubs. Managers make unnecessary or high transfers for the sake of increasing their popularity or getting support from fan groups, and the failure to return expenditures as a result of financial and sporting failures causes clubs to become over-indebted. In order to prevent the clubs from over-indebtedness, it is considered to amend the draft law of the Clubs Law as “The Club President and the members of the board of directors shall be responsible together with the club for the debt incurred during their term” (Yurdakul, 2021).

Professional Football Clubs in Turkey are clubs established according to the law of associations and registered with the Turkish Football Federation. However, football clubs are incorporating in order to increase their sportive and financial gains and to ensure the sustainability of their assets (Eren & Çukacı, 2020). In Turkey and in the world, the number of clubs that are incorporating and performing commercial activities is increasing (Sunay, 2004). Day by day, football clubs tend to incorporate in order to increase the share they receive from the football industry, the number of fans, strengthen their infrastructure, and ensure sports success (Yurdakul, 2021). Incorporated football clubs are traded in Borsa Istanbul in order to share risks with their stakeholders and to grow more (Eren & Çukacı, 2020). Football clubs in Turkey operate in association status as they are exempt from many taxes. In order to continue to benefit from the advantages of continuing their existence as an

association, clubs must continue their activities both as associations and as companies, and in order to ensure their sustainability, they must go public by incorporating (Devecioğlu et al., 2012). In the globalizing and competitive football economy, the goals of clubs to achieve sportive and financial success push the clubs to incorporation and institutionalization (Eren & Çukacı, 2020). Incorporated football clubs can increase the income of the club through professional managers.

It is seen that professional football clubs neglect the income and expense balances for the sake of achieving sportive success. Wrong transfer policies, high-cost foreign player transfers, increased exchange rate difference in player payments, interest on unpaid debts make clubs much more risky financially (Terci, 2019). Despite the establishment of new high-capacity stadiums, the increase in spectator capacity, the increase in matchday revenues, ticket sales and broadcasting revenues of the clubs, it is noteworthy that the clubs seem to be in debt and in loss. In the statements made to the public by the club presidents, it is emphasized that the current income of the clubs is sufficient for the sustainability of the team, but that the clubs have debts from the past, that these debts have interest debts, and with the addition of exchange rate increases, they drag the clubs into debt swamp (Koç & Orman, 2018).

Teams are in a race to add world-famous star players to their squads every season. It is seen that world-famous star players generally prefer clubs with high popularity and popularity in the young and best positions of their careers. In addition, these clubs transfer football players by giving astronomical figures. Turkish clubs can transfer such popular players at the end of their careers and when they get older, by paying the desired transfer fee. This means taking damage while taking the player. Club managers can also make such transfers in order to meet the expectations of the fans and increase their popularity. If the club cannot achieve success in its own league and European cups that season, it cannot receive the return of its expenditures for the transfer. Over the years, this situation emerges as an unmanageable debt for clubs.

The financial fair play practice of UEFA, which foresees the negative economic consequences of this situation, appears. As a matter of fact, with the financial fair play supervision initiated by UEFA in 2014-2015, it has brought the rule that the clubs can spend as much as their income in order to prevent excessive borrowing and to protect the athletes by securing the receivables of the athletes. With this application, UEFA wants football clubs to make their economies sustainable so that they can survive. At the 2nd Football Summit, which was held in 2017 to solve the financial problems of sports clubs, the Association of Clubs together with UEFA emphasized that clubs should be able to spend as much as they have income within the scope of financial fair play. However, after UEFA's financial fair play inspections, it is seen that a period of attention is given to player transfers. It is considered that the financial fair play control will affect the financial performance of the clubs.

The physical and financial fitness of the clubs is audited by the Turkish Football Federation (TFF) Club License and Financial Fair Play Directorate (KLM). In financial fair play audit, it is required that there is no break account and no overdue debt. TFF is trying to ensure that clubs spend as much as their income, increase their financial resources with transparency, and ensure that the sustainability and financial fair play approach is embedded in the economic management of the clubs (TFF, 2017).

Nowadays, the underlying causes of the indebtedness of the wrong club transfers, high transfer fee given to foreign players, the lack of accountability of managers in financial expenses, lack of supervision by the TFF and said economic measures as inadequate. The foreign restriction of the Super League teams is often on the agenda.

Teams that will compete in the Super League every season report their rosters to the TFF. According to the application of the TFF foreign rule in the Super League for the 2020-2021 season, clubs can have a maximum of 14 foreign players in their 28 man squad, and a maximum of 12 foreign players in their 21 person match squad. While there is no limitation on the quota of domestic football players in the squads of football teams, clubs can have as many local players as they want in their squads (TFF, 2020).

Foreign players constitute an important expense for clubs. However, training local players and transferring them to European clubs seems to be a more profitable business. Clubs can benefit from the country's young population by investing in their infrastructure, opening football schools and academies. Many of the clubs competing in the Bundesliga have Turkish football players. If Germany can produce talented and successful football players from Turkish immigrants, it can do so in Turkey. It can train talented and successful football players in Turkey by making necessary infrastructure facilities with legal regulations and studies and by training infrastructure coaches or by transferring coaches from Germany at the beginning. In this way, clubs can obtain economic resources and the debts of the clubs can end. It is considered that in the football economy, it will cause the stakeholders and 3rd parties who benefit from the financial success of the teams at the micro level to win, and at the macro level, it will cause the state to make a profit and increase the gross national product. Raising local players is important in terms of benefiting the country's economy and football.

State officials at the ministerial level, TFF president, football club presidents and sports authorities in Turkey are now aware of the size of the football economy. It organizes football economy forms, sports economy congresses and football summits in order to get a bigger share of the world football economy cake and to get rid of the indebted economic situation and to have a profitable economic structure (UFEF, 2019).

What is the effect of the number of foreign players of the clubs and the market values of the clubs on the sportive success of the clubs? Is the number of foreign players that important for clubs? Even though they are in debt, they buy players from abroad by paying high transfer fees. How does the number of foreign players affect the sportive success of the clubs? The questions constitute the problem of the research.

In this context, the aim of the research is to analyze the effect of the number of foreign players in the squads of the professional football teams competing in the Super League between the years 2015-2020 on the sportive success of the club. The squads of the football clubs competing in the Super League between the 2015-2020 seasons were examined and the foreign numbers, transfermarket market values of the clubs and the league ranking scores at the end of the season were calculated. With the findings obtained here, the effect of the foreign numbers of the clubs and the team values on the sportive success of the team can be determined. The research is considered important in terms of revealing strategies for transferring foreign players in order to reduce the debts of the clubs.

Material and Method

In the research, qualitative and quantitative research methods and mixed research method were preferred. Quantitative research generally refers to the processes in which quantitative data are collected and a judgment is made through analysis, while qualitative research refers to the processes in which qualitative data are collected and a judgment is made through analysis (Sönmez & Alacapınar, 2014). Generally, data collection technique in qualitative research method; The data obtained through observations, interviews, documents and questionnaires are analyzed with the inductive approach and reported descriptively (Gürbüz &

Şahin, 2018). Qualitative research is the research conducted to reveal the events and perceptions in their natural environment in a realistic and holistic way by using qualitative data collection techniques such as document analysis (Yıldırım & Şimşek, 2006). The research is an exploratory mixed research in terms of its purpose. Qualitative and quantitative research techniques can be used together in exploratory research. In the mixed method, it can be designed both qualitatively and quantitatively as well as in an integrated (mixed) way to provide a better perspective on the research problem and research topic (Creswell, 2015).

Ethics committee decision has not been taken for this research, since it is not a clinical and experimental study on humans and animals. However, in the preparation of the article, Research and Publication Ethics was respected. It was also carried out in accordance with the Declaration of Helsinki.

Study Group

The universe of the research consists of the professional football teams of the Super League, which competed in 5 seasons between 2015-2020. The transfermarket values of the football teams competing between 2015-2020 were analyzed by taking the averages of the number of foreign players and league success rankings. There are 18 teams in the Super League each season between the years 2015-2020. Every year, 3 teams from the Super League are relegated to a lower league, while 3 teams from the 1st League are promoted to the Super League every year. In this context, a total of 26 teams from the competition in the Super League between the years 2015-2020 constitute the research group.

Data Collection

In the research, document (document) analysis and literature review were made as data collection technique. Document analysis includes the analysis of written materials containing information about the facts and cases that are aimed to be investigated (Yıldırım & Şimşek, 2006). The data in the research were obtained from the internet address of transfermarket (Transfermarket, 2020). The research data were obtained by using the official website of the Turkish Football Federation (TFF) (www.tff.org) and the internet site of the transfermarket (https://www.transfermarkt.com.tr). Data on the number of foreign players, transfermarket market values and league rankings at the end of the season of professional football clubs competing in the Super League between the years 2015-2020 were obtained from these official and private websites.

Data Analysis

The data were collected from the transfermarket and TFF official websites by taking the number of foreign players, market values and league rankings of the clubs between the years 2015-2020. The collected data were grouped in the Microsoft Office Excel table and averaged. Then, it was transferred to SPSS analysis program and correlation analysis was performed.

Correlation analysis is used to interpret the existence and severity of the mutual relationship between two variables. If the relationship between the variables is positive, the variables increase or decrease in direct proportion; being negative indicates that while one of the variables increases inversely, the other tends to decrease (Büyüköztürk, 2015). The correlation coefficient (r) gives us the strength and direction of the relationship. The correlation coefficient varies between +1 and -1 values. In the correlation analysis, if r is close to +1, there is a positive relationship, and if it is close to -1, there is a negative relationship. If the correlation coefficient takes values close to 0, it cannot be said that there is a relationship

between the variables. The correlation coefficient relationship evaluation is given in Table 1 (Gürbüz & Şahin, 2018).

Table 1. Evaluation of the correlation coefficient

Strong(-)	Medium(-)	Weak(-)	Weak(+)	Medium(+)	Strong(+)
$-1 \leq r < -0,7$	$-0,7 \leq r < -0,3$	$-0,3 \leq r < 0$	$0 < r \leq 0,3$	$0,3 < r \leq 0,7$	$0,7 < r \leq +1$

Source: Gürbüz & Şahin, 2018.

Within the scope of the research, correlation analysis was performed by taking the average of the data collected from the transfer market values, the number of foreign players and league success rankings of the football teams competing between the years 2015-2020. Correlation analysis results are interpreted in the findings section.

Findings

In this research, it is aimed to measure the effect of the number of foreign players and market values of professional football clubs competing in the Super League between the years 2015-2020 on the sportive success of the club. The research problem is that most of the teams competing in the Turkish Super League are in a indebted and losing position. This situation is also known by international organization institutions. According to the financial reports of the clubs, in the statement made on the official website of UEFA, it is seen that the Turkish Super League is in the last place in Europe with a total loss of 263 million Euros (Table 2).

Table 2. European clubs profit/loss statement

Row No.	Country	Profit / Loss Status
1	England	382 million euro kar
2	Spain	156 million euro kar
3	Germany	153 million euro kar
4	Ukraine	37 million euro kar
5	Netherlands	36 million euro kar
6	Hungary	33 million euro kar
7	Croatia	11 million euro kar
8	Other countries	18 million euro zarar
9	Bulgaria	10 million euro zarar
10	Romania	11 million euro zarar
11	Kazakhistan	12 million euro zarar
12	Belgium	19 million euro zarar
13	Portugal	21 million euro zarar
14	Israel	35 million euro zarar
15	Czech Republic	47 million euro zarar
16	Greece	49 million euro zarar
17	Russia	56 million euro zarar

18	Italy	195 million euro zarar
19	Turkey	263 million euro zarar

Source: Sözcü, 2020.

When Table 2 is examined, it is seen that the three most profitable countries in Europe are England, Spain and Germany, respectively, while the three most losing countries are Turkey, Italy and Russia, respectively.

Table 3: Number of foreign players of Turkish Super League teams by years

Super League Season	**Number of Foreign Players**	**Total Number of Players**	**Percent %**
2014-2015 Season	198	500	39,6
2015-2016 Season	253	500	50,6
2016-2017 Season	236	500	47,2
2017-2018 Season	247	500	49,4
2018-2019 Season	236	500	47,2
2019-2020 Season	225	500	45
2020-2021 Season	326	622	52,4

Source: Sözcü, 2020.

In Table 3, the number of foreign players of the Turkish Super League teams by years is given. With the removal of the foreign restriction in the Super League in the 2016-2017 season, the teams were able to increase the number of foreign player transfers during the transfer periods, have 14 foreign players in their squads, and can field 11 players as foreign players. After the removal of the foreign restriction, many foreign players came to the Super League and they continue to do so. While there were 198 foreign players in the league in 2014-2015, when there was a foreign player limit, this number increased to 253 in 2015-2016 after the rule change. In the 2016-2017 season, the number of foreign players was 236 in 18 teams. In Turkey, where there are close to 500 players in these years, the rate of foreign players was 47.2% in the 2016-2017 season (Sözcü, 2020). In the 2020-2021 season, this rate has increased to 49.1% (Transfermarket, 2020).

Table 4: 2020-2021 Season Super League professional football clubs player numbers

League Level	**Super League - Turkey**
Number of teams	21 teams
Number of players	611
Number of local players	311

Number of foreign players	300 players 49.1 (%)
Market value:	1.22 mil. €

Source: Transfermarket, 2020.

In Table 4, the player numbers of professional football clubs in the Super League 2020-2021 season are given.

Table 5: The average number of foreign players, market values and league rankings of the clubs competing in the Super League between 2015-2020

Row No.	Professional Football Clubs	Average		
		League Ranking	Number of Foreign Players	Approximate Market Value
1	Medipol Başakşehir FK	2,4	14,6	67.19 million euro
2	Beşiktaş A.Ş.	2,8	18	125.46 million euro
3	Galatasaray A.Ş.	3,2	17	119.38 million euro
4	Fenerbahçe A.Ş.	4	15	135.27 million euro
5	Trabzonspor A.Ş.	5,8	13,6	82.69 million euro
6	Fraport-TAV Antalyaspor	9	16	37.36 million euro
7	Kasımpaşa A.Ş.	10	14,8	33.52 million euro
8	İttifak Holding Konyaspor	10,4	16	30.15 million euro
9	Demir Grup Sivasspor	11,4	11,2	26.31 million euro
10	Aytemiz Alanyaspor	11,6	14	27.36 million euro
11	Akhisar Belediyespor	12,6	11,4	27.22 million euro
12	HES Kablo Kayserispor	13	15,2	31.72 million euro
13	Gençlerbirliği	13,2	13,4	24.96 million euro
14	Göztepe A.Ş.	13,4	9,4	17.84 million euro
15	BTC Türk Yeni Malatyaspor	13,4	8,8	14.66 million euro
16	Osmanlıspor	14,4	11	30.72 million euro
17	Bursaspor	14,6	12,8	28.63 million euro
18	Çaykur Rizespor A.Ş.	14,8	14	24.57 million euro
19	Gaziantep Futbol Kulübü A.Ş.	15,6	9,8	18.84 million euro
20	Karabükspor	17,2	8,2	12.21 million euro
21	MKE Ankaragücü	17,6	8	8.25 million euro
22	Yukatel Denizlispor	17,8	2,2	2.57 million euro
23	Eskişehirspor	18,6	3,8	9.73 million euro
24	Erzurumspor	18,6	3,6	3.63 million euro
25	Mersin İdmanyurdu	18,8	2,2	4.54 million euro
26	Adanaspor	18,8	2,8	4.00 million euro

In Table 5, the number of foreign players, team values and league ranking averages of the teams competing in the Super League between 2015-2020 are given. In the table given, it is seen that as the number of foreign players decreases, the rate of staying in the leagues decreases and they are in the last place in the league rankings. In addition, it is seen that the monetary values of the teams decrease as the number of foreign players decreases. Another point that draws attention in this table is that the team values of Fenerbahçe FC, Galatasaray FC, Beşiktaş FC, Trabzonspor FC, which are known as the Big Four in Turkey, are the highest among the team values in the Super League.

Table 6: Correlation analysis results between research variables.

Variables	Average	SD	1	2	3
1. League Rankings	12,42	5,22	-		
2. Number of Foreign Players	11,03	4,84	**-,82****	-	
3. Team Values	36,49	37,89	**-,90****	**,68****	-

***.p<0.05, **. p< 0.01, n=26.**

Table 6 shows the correlation relations and significance levels between the variables of the research. Accordingly, while there is a significant and negative high level ($-1 \leq r < -0.7$) relationship ($r=-.82$, $p<.01$) between the league rankings of the clubs and the number of foreign players, the league rankings of the teams and the team values There is a significant and negative high level ($-1 \leq r < -0.7$) relationship ($r=-.90$ $p<.01$). It is seen that there is a significant and positive ($0.3< r \leq 0.7$) moderate relationship between the number of foreign players of football clubs and the club market values ($r=.68$, $p<.01$). According to these results, as the number of foreign players of the teams and accordingly the club market values increase, the league rankings decrease. The decrease in league rankings is interpreted as the fact that the teams are at the top of the rankings and that they are more successful in terms of sports.

Table 7: The average number of foreign players, club market values and league rankings of the clubs that competed in the Super League for 5 years between 2015-2020 without a break

Row No.	Professional Football Clubs	Average		
		League Ranking	Number of Foreign Players	Approximate Market Value
1	Medipol Başakşehir FK	2,4	14,6	67.19 million euro
2	Beşiktaş A.Ş.	2,8	18	125.46 million euro
3	Galatasaray A.Ş.	3,2	17	119.38 million euro
4	Fenerbahçe A.Ş.	4	15	135.27 million euro
5	Trabzonspor A.Ş.	5,8	13,6	82.69 million euro
6	Fraport-TAV Antalyaspor	9	16	37.36 million euro
7	Kasımpaşa A.Ş.	10	14,8	33.52 million euro

8	İttifak Holding Konyaspor	10,4	16	30.15 million euro
9	HES Kablo Kayserispor	13	15,2	31.72 million euro

In Table 7, the average number of foreign players, club market values and league rankings of the clubs that competed in the Super League without a break between the years 2015-2020 are given. These teams are the ones that managed to stay in the league in a stable way. Accordingly, Medipol Başakşehir FC takes the first place on the basis of the averages of 5 years.

Table 8: The results of the correlation analysis between the research variables of the teams that remained in the Super League for 5 years without a break.

Variables	**Average**	**SD**	**1**	**2**	**3**
1. League Rankings	6,73	3,93	-		
2. Number of Foreign Players	15,58	1,33	-,22	-	
3. Team Values	73,64	43,69	**-,84****	,34	-

***.p<0.05, **. p< 0.01, n=9.**

In Table 8, the correlation relations and significance levels between the research variables of the teams that remained in the Super League for 5 years are given. Accordingly, it is seen that there is a significant and negative high level ($-1 \leq r < -0.7$) relationship between the league rankings of the teams and the club market values ($r=-.84$, $p<.01$). According to these results, as the market values of the clubs increase, their league rankings decrease. The decrease in the league rankings is interpreted as the fact that the teams are at the top of the rankings and that they are more successful in terms of sports. However, it is seen that there is no relationship between the league rankings of the teams and the number of foreign players. According to the findings obtained from the correlation analysis results of 9 successful teams that have been competing in the league for 5 years without a break, it is seen that the values of the teams affect the sportive success of the teams rather than the number of foreign players.

Discussion and Results

In this research, it is aimed to measure the effect of the number of foreign players in the staff of professional football clubs competing in the Super League between 2015-2020 and the club's market values on the sportive success of the club. The problem of the research is that the football teams competing in the Turkish Super League are in a indebted and losing economic situation. This situation is also known by international organization institutions. According to the financial reports of the clubs published on UEFA's official website, the Turkish Super League ranks last in Europe with a total loss of 263 million euros.

The number of foreign players, club market values and sportive achievements of the Turkish Super League teams by years were examined. As a result of the examination, it is seen that with the removal of the foreign restriction in the Super League in the 2016-2017 season, they increased the number of foreign players, they had 14 foreigners in their squads, and 11 football players were put on the field as foreigners, and the increase in the number of foreign players continued after this restriction was lifted. While there were 198 foreign players in the

2014-2015 season, when there was a foreign player limit, this number increased to 253 in 2015-2016 and to 236 in the 2016-2017 season after the rule change. In Turkey, where there were nearly 500 players in these years, the rate of foreign players was 47.2% in the 2016-2017 season (Sözcü, 2020). In the 2020-2021 season, this rate increased to 49.1% (Transfermarket, 2020).

In this context, there is a significant and negative high level ($-1 \leq r$) between the league rankings of the teams and the number of foreign players according to the correlation relations and significance levels between the number of foreign players, club market values and league ranking averages of the teams competing in the Super League between 2015-2020. While there is a relationship < -0.7 ($r=-.82$, $p<.01$), there is a significant and negative high level ($-1 \leq r < -0.7$) relationship between the league rankings of the clubs and the club market values. there is a relationship ($r=-.90$ $p<.01$). It is seen that there is a significant and positive ($0.3< r \leq 0.7$) moderate relationship between the number of foreign players of football teams and the club market values ($r=.68$, $p<.01$). According to these results, as the number of foreign players of the clubs and accordingly the club market values increase, the league rankings decrease. The decrease in the league rankings is interpreted as the fact that the teams are at the top of the rankings and that they are more successful in terms of sports. In addition, it is seen that as the number of foreign players decreases, the market values of the teams decrease and the rate of staying in the leagues decreases and they are in the last place in the league rankings. It is seen that the clubs with the highest market values in the Super League are Fenerbahçe FC, Galatasaray FC, Beşiktaş FC and Trabzonspor FC, which are known as the big four in Turkey.

Considering the correlation relations and significance levels between the research variables of the teams remaining in the super league for 5 years, there is a significant and negative high level ($-1 \leq r < -0.7$) relationship between the league rankings of the clubs and the club market values ($r=-.84$, $p<.01$). According to these results, as the market values of the clubs increase, their league rankings decrease. The decrease in the league rankings is interpreted as the fact that the clubs are at the top of the rankings and that they are successful in terms of sports. However, it is seen that there is no relationship between the league rankings of the teams and the number of foreign players. According to the findings obtained from the correlation analysis results of 9 successful clubs that have been competing in the league for 5 years without a break, it is considered that the market values of the clubs rather than the number of foreign players affect the sportive success of the teams.

Although it is desired to manage Turkish football effectively and efficiently both financially and sportively, it is understood from the stock market reports of the four big football clubs, the statements of the club managers and the results of the sports competitions that the clubs are in financially unsustainable debt and their sporting successes are not sufficient in the international arena. It shows that the sportive achievements of football teams have a positive effect on the financial statements of sports companies related to the football sector and increase the financial performance of the clubs (Ergül, 2017).

Football clubs, in accordance with the financial fair play rules implemented by UEFA and TFF, are required to maintain the balance of income and expenditure in club financial management (Soygüden, 2016). In addition, the importance of ensuring the income-expenditure balance of the clubs in the sports meetings held in Turkey is emphasized by the sports authorities (UFEF Aydın, 2019).

As a result, between the years 2015-2020, as the number of foreign players of the clubs competing in the Turkish Super League increases and accordingly, the market values of the

clubs increase, their league rankings decrease. The decrease in the league rankings is interpreted as the clubs rising to the top ranks and being more successful in terms of sports. In addition, according to the findings obtained from the results of the correlation analysis of 9 successful teams that competed in the Super League for 5 years without a break, it is seen that the club market values rather than the number of foreign players have a positive effect on the sportive success of the clubs.

As a result of this study, in which the number of foreign players of football clubs, the club market values and the effect of league rankings on the sportive success of the clubs, it is evaluated that the number of foreign players of the clubs has a positive effect on the sportive success of the football clubs.

It is considered important that clubs have a debt-free financial structure in order for their economy to be sustainable. In order to improve the financial situation of the clubs, a new structuring in laws and debts should be made with the support of the state, TFF, football clubs, association of clubs, financial institutions, fans, media and the entire public. The football industry is a growing economic sector. This economic sector also has an important place in the state economy. The expectation from football clubs in Turkey, which has a young population, is to contribute to the country's economy by becoming internationally followed clubs that produce and sell football players from the infrastructure in the football economy with high added value. For this reason, club managements should be transformed into organizations that are institutionalized, fully implement corporate governance principles, are kept under constant supervision, and gain sustainability by increasing their performance day by day.

In a study, it was determined that the number of foreign players in the Turkish Super League and the big leagues of Europe increased continuously between 1992-2020. With the agreements signed in Europe, it is seen that the African-origin players do not have foreign status, there are no foreign restrictions in the English and German leagues, these countries are at the top of the UEFA rankings, and the number of foreign players has positive effects on both the market value and sporting success of the clubs (Arslan, 2020). The results of this study and the research are similar. In addition, it has been determined that clubs with more foreign players have better results in the world rankings (Royuela & Gásquez, 2019).

By investing in the infrastructure of football clubs, talented players should be allowed to play in order to gain high performance. Rather than limiting the number of foreign players in clubs, conditions such as age, playing in the national team for a certain period of time, being an EU citizen should be introduced. It is thought that this will increase the quality of the foreign players to be transferred, while bringing the values of the domestic players demanding astronomical fees to normal levels. In addition, the attitudes and preferences of club managers and coaches to play foreign players are also important for the future of Turkish football. Transfer planning should be made long-term, not short-term (Yüce, 2013).

Today, it is known from the speeches in national and international congress forums and meetings that the state, TFF, football clubs and football public are aware of the economic situation of the clubs, all stakeholders are making efforts to get rid of this situation, and it is now known what the problems and solution proposals are. In this context, it is seen that there are measures taken by international institutions within the scope of financial fair play, as well as measures such as financial fair play and clubs law taken by TFF and clubs. After this process, it is now considered that it is time for all stakeholders to fulfill their responsibilities with determination. Future studies can be done to see whether there is an improvement in the resolution of the economic problems of the clubs.

REFERENCES

Arslan, K. (2020). Foreign football player status and success relationship: A research on Turkey and the 'big five' European football leagues. Master's thesis, Ege University, Institute of Health Sciences. İzmir.

Creswell, J. (2015). Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research. New York: Pearson.

Devecioğlu, S., Çoban, B., Karakaya, Y.E., Karataş, Ö. (2012). Evaluation of Incorporation Trends of Sports Clubs in Turkey, SPORMETRE Journal of Physical Education and Sport Sciences, 2012, X (2) 35-42.

Eren, M, Çukacı, Y. (2020). Valuation Processes in the Public Offering of Football Clubs in Turkey: Beşiktaş, Galatasaray ve Fenerbahçe Sample. Journal of Academic Approaches, 10 (2), 90-122.

Ergül, N. (2017). Testing the Relationship Between the Success of Sports Clubs in Football and the Financial Success of Sports Companies. Hacettepe University Faculty of Economics and Administrative Sciences Journal, 35 (3) , 43-71. DOI: 10.17065/huniibf.340696.

Fanatik. (2021). Shock Besiktas decision from UEFA! A portion of European revenues will be confiscated.https://www.fotomac.com.tr/besiktas/2021/03/24/son-dakika-spor-haberleri-uefadan-sok-besiktas-karari-avrupa-gelirlerinin-bir-kismina-el-konacak. Date of access: 25.03.2021.

Gürbüz, S., Şahin, F. (2018). Research Methods in Social Sciences (5th Edition). Ankara: Seçkin Publishing.

Koç, A., Orman, F. (2018). Capital Markets Board Congress (moderator: Düzen, E.). İstanbul. https://www.youtube.com/watch?v=DzmeinJUO4E. Date of access: 03.07.2020.

Royuela, V., Gásquez, R. (2019). On the Influence of Foreign Players on the Success of Football Clubs. Journal of Sports Economics, 20(5), (s.718-741).

Sevim, A, Bülbül, S. (2017). UEFA Financial Fair Play (FFP) The Importance of Financial Reporting in Turkish Football and the Necessity of a System within the Scope of Criteria. Military Academy Science Journal, 27(2), 187-212.

Sönmez, V., Alacapınar, G.F. (2014). Exemplified Scientific Research Methods, (3.Baskı), Ankara: Anı Publishing.

Soygüden, A. (2016). Investigation of Income Sources of Professional Football Clubs. Journal of Ömer Halisdemir University Faculty of Economics and Administrative Sciences, 9(4) 21-35.

Sözcü. (2016). The number of foreign players in the Super League is equal to Turkish players!https://skor.sozcu.com.tr/2016/10/04/super-ligde-yabanci-oyuncu-sayisi-turk-oyuncularla-esit-533721/. Date of access:05.07.2020

Sunay, H. (2004). Incorporation in Sports Clubs. Gazi Journal of Physical Education and Sports Sciences, s.69-76.

Şahin, S., Doğan, M., Doğan, A. (2019). 2013-2018 A Study on Foreign National Football Players Playing in the Turkish Football Super League in their Seasons. Journal of Physical Education and Sport Sciences, 13 (3), 210-229. Retrieved from https://dergipark.org.tr/tr/pub/bsd/issue/50922/664637

TFF. (2017). 2. Football Summit Has Ended, https://www.tffistanbul.org/haber/2-futbol-zirvesi-sona-erdi/2631. Date of access:21.05.2020.

TFF. (2017). Turkish Football Federation. Turkish Football Federation: at https://www.tff.org/default.aspx?pageID=285&ftxtID=28468. Date of access: 14.02.2021.

TFF. (2020). Turkish Football Federation. https://www.tff.org/default.aspx?pageID=687&ftxtID=33430. Date of access:25.03.2021

Transfermarkt. (2020). Süper Lig 20/21 Transfermarkt. www.transfermarkt.com.tr › startseite › wettbewerb. Date of access: 30.12.2020

UEFA. (2020). UEFA Report Announced! Super League, Europe's Most Damaged Leaguehttps://skor.sozcu.com.tr/2020/01/17/uefa-raporu-acikladi-avrupanin-en-zarar-eden-ligi-super-lig-1439573/ Date of access:05.07.2020.

UFEF Aydın. (2019) Football Economy and Financing of Clubs - Hüseyin Aydın https://www.youtube.com/watch?v=BmtktVpGNEI&feature=youtu.be Date of access: 04.07.2019.

UFEF. (2019). International Football Economic Forum carried out. https://www.borsaistanbul.com/tr/duyuru/36/uluslararasi-futbol-ekonomi-forumu-ufef-2019-gerceklestirildi. Date of access:21.11.2019.

Yıldırım, A., Şimşek, H. (2006). Qualitative research methods in the social sciences (6th Edition). Ankara: Seçkin Yayıncılık.

Yurdakul, H. (2021). Clubs Law and Responsibility of Club Managers,https://www.hukukihaber.net/makale/kulupler-yasasi-ve-kulup-yoneticilerinin-sorumlulugu-h440481.html. Date of access: 15.03.2021

Yüce, A. (2013). Evaluation of the Number of Foreign Football Players Playing Football in Turkish Professional Football Leagues According to Sports Public Opinions. Master Thesis. Ankara University, Institute of Health Sciences. Ankara.

Yüce, A., Katırcı, H., Kuzu, C. (2017). Limitation of Foreign Footballers in Turkish Football and Views of Turkish Footballers. CBU Journal of Physical Education and Sport Sciences. 12(2), 24-39.

International Journal of Sport Culture and Science
June 2021 : 9(2)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS.2021.645

Transhumanism and Sport

Berkan ATASOY[1]
[1]Directorate of Youth and Sports, Bursa, Turkey
https://orcid.org/0000-0003-1439-7435

Email: berkant.atasoy@yaani.com

Type: Research Article (Received:19.04.2021– Accepted: 05.07.2021)

Abstract

With the addition of today's developing science and technology opportunities to human's efforts in the historical process to live a longer life without disease, Transhumanism has jumped one more dimension and has taken its place in many branches of science today. Since transhumanism is a trend that mainly concerns the mind and body of the human being, its influence in the humanity is great. Sports science is also included in these discussions because it basically involves the human being. In this respect, technological developments and advances in recent years have brought new discussions in the field of sports as they emerge as a factor that helps human life and makes life easier. In this literature review study, the interaction of technology and human beings and its reflections on sports is scanned and it is tried to examine whether Transhumanism is an opportunity or a threat to sports. In this direction, studies in the field of Transhumanism were scanned and was discussed in terms of the advantage, disadvantage, opportunity or threat with the introduction of new technologies into human life. It was concluded that transhumanism studies can move the sport organizations to different dimensions, but can pose a threat to today's sports and athletes if the necessary precautions are not taken in time.

Keywords: Transhumanism, H +, Humanity +, Technology, Sport,

Introductıon

In the historical timeline and especially in the last century, humanity has made an incredible breakthrough in the field of technology. These developments have also triggered the studies for a longer and quality life of humans. More superior, disease-free and qualified human life studies have begun to be examined under the title of Transhumanism. The studies carried out in this direction have taken their place in many disciplines. Today, the researches that concern human being inevitably undergo transformation in the light of these developments and reveal new progresses. In the near future Transhumanism will affect many other sectors in the economic structure, and it will be also inevitable its affect on many branches of science that concern humanity and its nature, such as Medicine, Philosophy, Religion, Sociology and Sport. Any kind of work aimed to increasing the physical and cognitive abilities of human beings will undoubtedly have positive and negative contributions expected to the sports and its sector. Since the sports sector basically involves humans, it is predicted that sport and its surround will be influenced and transformed by Transhumanism trend. It is undoubtedly important to be able to predict the place of Transhumanism in the future of sports, which topic will shapes the future. With this study, it is important to examine the possible reflections, advantages and disadvantages of Transhumanism studies on sports and its industry in terms of shedding light on the future of today's sports.

Sports can be an individual activity for people to stay healthy and fit, as well as a platform of local competition or area that includes national interests, such as the Olympics Games, where countries will want to be active always. This is why Transhumanism studies concern the world of sports and the sports industry in all respects. Questions such as whether the Olympics Games and Championships, where international competition is at the highest point, will be followed with the same enthusiasm in the future, how such organizations will be affected by Transhumanism studies, come to the fore. Also: Is there a possibility that the known ethical rules, will be affected from transhumanism studies? What are the possibilities of intervention on human by transhumanism studies? Does the intervention on human, hence the athlete, threaten the sport in the known classical sense? What does Transhumanism promise in general? What are the current fields of study and its effects on the sports world? By searching answers to such questions, our study aims to gain a different perspective on the future of the sports and its agenda.

With this theoretical study, the current developments in the field of Transhumanism were discussed and the reflections of these developments on sports, which mainly concern human, were tried to be presented. Considering essentialy the fact that success and progress in sports are achieved within the time frame and great efforts, the reflections of Transhumanism studies in the field of sports were examined and its advantages and disadvantages have been tried to be evaluated. With the present research, it is aimed to take attention to the opportunities and threats that may arise with the developments of Transhumanism researches in the future of sport, to take place and contribute the developments in sports science literature.

Conceptual Framework

The Emergence and Definition of Transhumanism

It can be said that the emergence of the philosophy of transhumanism and its studies in the historical process, is basically a stage of the development of the philosophy of Humanism. Kadıoğlu (2011) defined Humanism as; the idea of a mental and philosophical movement aiming the development of basic qualities in human beings. As for Akkaya (1947); He has

defined this movement, which has an unprecedented high value in the history of culture, as the expression of the movment that observes the growth of human beings in a perfect way and reach the ideal humanity as an individual. The writers of the XV. century used this word "Humanitas" in classical Latin to mean spiritual maturation. German scientists, for the first time in the XIX. century, they used the word Humanist in the form of Humanismus (Humanism) in the sense of spiritual-intellectual movement (Akkaya, 1947). The serious attempt to theorize human nature started in the Renaissance and the concept called "Transhumanism" was mentioned for the first time at this time. However, to be more precise, any understanding of humanism in the Renaissance was also accepted as "Transhumanism". This idea was expressed in Giovanni Pico della Mirandola's "Speech on Human Dignity" (Brumlik, 2016: 121).

The earliest works in the field of transhumanism belong to Haldane (1924) and Bernal (1929). Contemporary concepts of Transhumanism were first included in the article "Daedalus: Science and the Future" by the British geneticist Haldane (1924). Although initially seemed "immoral and unnatural" to most people, he advocated the benefits of eugenics, ectogenesis, and genetic engineering. Subsequently, Bernal's (1929) article "The World, Flesh and the Devil" aroused more interest with his discovery of the possibilities of change, arguing that it would be possible to determine human physical and mental characteristics through bionic implants and cognitive enhancement. As the term "Transhumanism" containing the meaning used today, was introduced in an article written by biologist Julian Huxley in 1957. Here he claimed that, if the human beings wished it could transcend itself, Transhumanism would leave man as human, but man could surpass himself by becoming aware of his nature and new possibilities (Huxley, 1968).

Today, there are many definitions explaining the concept of Transhumanism. Max More (2010), a "philosopher and futurist", defined Transhumanism as a philosophical and cultural movement that explores the profound improvement and desirability of the human condition through science and technology. Transhumanists claim that, guided by life-promoting principles and values through science and technology, they investigate the evolution of intelligent life beyond and accelerate the current human form and human limitations (More, 2010). According to Natasha Vita More, "Transhumanism is a commitment to overcoming human boundaries in all its forms, including extending life expectancy, increasing intelligence, constantly advancing knowledge, gaining complete control over our personalities and identities, and gaining the ability to leave the planet. According to Mitch Porter, Transhumanism is the doctrine that we can and should be more than human (Anissimov, 2015). Pepperell (2003) adopts a different philosophical approach and defines Transhumanism as the "superhuman state", expressed as "the end of the human-centered universe", "an energetic theory of mind in which human thought, meaning and memory are understood in terms of the activity of an energy regulating system". For Pepperell, Transhumanism has been expressed as the end of Humanism, that is the end of "belief in the infallibility, superiority and uniqueness of human power for a long time". Anissimov (2015) defined Transhumanists as thinkers who believe that one day cybernetic developments will be powerful, elegant and cheap, and that everyone will want to access them. Undoubtedly there are many scientists working in this field and it is possible to expand the definitions of Transhumanism. To repeat this definition, it is a philosophy of life that seeks to move beyond the current human form and human limitations, way to accelerate the evolution of intelligent life through science and technology, guided by the principles and values that encourage life. It

would be suitable to emphasize Transhumanism, which goes beyond the natural mind and body structure of the human, by defining it briefly as "Transition to the artificial human form".

Figure 1. The evolution of transhuman-humanity. (Evolution, 2021)

While scientific and technological progress continues uninterruptedly towards the future, the philosophy of humanism in this direction aims the endless development of human beings. Transhumanist philosophy, since it was built on the basis of science and technological developments, defends these two concepts anyway in order to achieve its goals.

In 2009, the "Transhumanist Declaration" was published under the leadership of transhumanist scientists who are experts in their fields. The same declaration was accepted by the General Assembly of Humanity^{+} (H +) organization in March 2009, after a few changes. Transhumanist Statement (Mazan, 2015; 10) briefly:

1. Humanity will be deeply affected by science and technology in the future. We envision the possibility of expanding human potential by overcoming aging, cognitive deficits, involuntary suffering, and our being confined to planet Earth.

2. We believe that humanity's potential is still largely unrealized. There are possible scenarios that lead to wonderful and extremely valuable improved human conditions.

3. We are aware that humanity faces serious risks, especially due to the misuse of new technologies. There are possible realistic scenarios that lead to the loss of most or even all of what we hold valuable. Some of these scenarios are harsh, others subtle. Although all progress is change, not all change is progress.

4. Research efforts should be made to understand these expectations. We need to think carefully about how best to reduce risks and accelerate useful practices. We also need forums where people can constructively discuss what should be done and a social order where responsible decisions can be enforced.

5. Developing tools for reducing existential risks and protecting life and health, alleviating serious suffering and improving human foresight and wisdom should be pursued and heavily financed as immediate priorities.

6. Policy-making should be guided by a responsible and inclusive moral vision that takes both opportunities and risks seriously, respecting autonomy and individual rights, and showing solidarity and concern with the interests and dignity of all people around the world. We must also take into account our moral responsibilities to future generations.

7. We advocate the welfare of all sensibility, including humans, non-human animals, and future artificial intelligence, altered life forms, or other intelligences that can be driven by technological and scientific progress.

8. We support allowing individuals to make a wide personal choice about how to activate their lives. This includes the use of techniques that can be developed to aid memory, concentration and mental energy; life extension therapies; reproductive selection technologies; cryonic procedures; and many other possible human modification and improvement technologies.

As can be seen from the declaration of the Humanity+ community; active life is adorned with concepts that affect people such as welfare, rights, and moral responsibilities. However, it appears as a statement supporting human modification processes. Therefore, it is inevitable that all humanities, such as sports and sports sciences, that concern human, find themselves in the platform of scientific and philosophical discussion of Transhumanism.

Humanity has gone through various stages throughout history and these processes are still continuing. Philosophical currents ranging from Humanism to Transhumanism above have brought humanity on the eve of important developments. Humankind has now been discussing the post-human dimensions. Undoubtedly, every new development on man and humanity will cause social and economic repercussions. In order to understand the possible effects on the sport dimension, it would be appropriate to examine the studies related to Transhumanism today.

Transhismism Studies and Reflections on Sports

As in sports, humans are at the center of Transhumanism studies. Sports, due to its competitive nature, deals with the physical and mental development of people. The philosophy of transhumanism likewise involves the physical and mental development of human beings with the contributions of various technologies. In this regard, it is quite possible that both concepts will be affected by developments from similar fields. Although both concepts produce arguments in the same direction on human development, Sport and Transhumanism differ from each other on some moral points. The opinion that sports emerges in natural development and Transhumanism deals with artificial development, sometimes there are some points where natural and artificial technologies intersect and cannot be distinguished. At this point, scientific and technological developments lead to moral debates on Sport.

In this context, by briefly examining the scientific and technological developments that allow human beings to develop artificially, the intersection and divergence points of Sport and Transhumanism will be better understood. On the one hand, in the direction of Transhumanism, the connection of current technological developments with sports will be examined, on the other hand, the effect of possible future technological developments on sports will be evaluated. Scientific and technological studies that enable human development are:

Doping

The use of various substances or methods to increase physical and / or mental performance is called Doping (Unal & Unal-Ozer, 2003; Ertin & Bardakçı, 2020). Or according to the more detailed description; Giving a foreign agent to the organism (by whatever means) or applying physiological substances to a person in abnormal amounts during or outside the competition

in order to increase the performance artificially and irregularly, are considered as doping (Unal & Unal-Ozer, 2003: 189).

There is a wide variety of performance enhancing agents and methods, and these become increasingly diverse, sophisticated and ingenious, in line with scientific advances. Doping in sport is the use of prohibited substances or methods to enhance an athlete's performance, and hiding or trying to hide such use. These substances and methods have been banned for use in sports by the World Anti-Doping Agency (WADA) by various regulations. The most used doping types and species are (Çınar et al.2010; Unal & Unal-Ozer, 2003):

Stimulants: The effect of these substances is to delay fatigue by stimulating the central nervous system. Forcing the organism to use its reserves. Amphetamine, Methylphenidate, Caffeine, Cocaine, Ephedrine, Sibutramine, Strychnine, Pemoline or Modafinil are among the stimulants used by athletes. Stimulants are known to increase endurance and anaerobic performance, reduce the feeling of fatigue, increase attention and cause weight loss (Ertin & Bardakçı, 2020).

Narcotic Analgesics: The use as painkillers of morphine and morphine's chemical and pharmacological analogues (Çınar et al. 2010).

Anabolic Steroids: Drugs that show testosterone (essential male hormones) effects in the body. Steroids mostly affect the muscles, giving them strength and increasing their length and width (Çınar et al. 2010).

Growth hormones: This hormone, also known as somatotropin or somatotropic hormone, stimulates the liver and other tissues and provides muscle and organ growth. In this way, sports performance increases (Çınar et al. 2010).

Erythropoietin (EPO): Thanks to a drug developed for the treatment of anemia in kidney patients, red blood cells begin to carry more oxygen. Thus, the person becomes more durable. Among the names involved in the doping event realized through the use of the synthesis of this hormone, there are world-famous athletes who have competing in the cycling and triathlon branches (Aschwanden, 2000). However, it should be noted that some athletes do not need to use synthetic EPO, even if it is a very small number. For example, the famous ski athlete Eero Antero Mäntyranta, who has packed seven Olympic medals in his career, was born with a genetic mutation that increases the oxygen-carrying capacity of red blood cells by 25-50%. (Aschwanden, 2000). This congenital discomfort has given him an advantage in competitions that require endurance.

Blood doping: This is the method of transfering the athlete blood, himself or someone else, belonging to the high performance period, to the body after being cooled or frozen (Unal & Unal-Ozer, 2003).

Brain Doping (Nootropic Drugs or Intelligence Enhancers): Cognitive enhancers can be defined as the use of drugs and / or other tools aimed to improving the cognitive functions of healthy subjects, especially memory, attention, creativity and intelligence (designed as problem solving ability) (Fratil et al., 2015).

Gene Doping: Within the framework of the "Genome Project", the genetic codes of many diseases have been analyzed and the chance to be treated with "Gene Therapy" has arisen. Some of the treatments determined in parallel with these developments in the field of genetics, molecular biology and medicine, show performance enhancing effects. Gene therapy involves the delivery of the artificial gene to the patient. The artificial gene that is given provides the synthesis of the appropriate protein by creating a suitable RNA in the cell. In this

method; Gene doping can be performed in the form of 1- direct injection of DNA into the muscle, 2- delivery of genetically modified cells, and 3- virus delivery. Erythropoietin (EPO) gene, IGF-1 gene, Myostatin gene, VEGF gene and Leptin gene constitute examples of potential gene doping. (Unal & Unal-Ozer, 2003).

Neuroprotective

As it is known, the nervous system coordinates all the activities of the body and adapts the organism to the situation or environment it is in. The coordination and intensity of sports exercises are also performed depending on the functioning of the athlete's nervous systems. The general nervous systems of complex organisms are mainly composed of nerve cells. Shortly after birth, nerve cells in mammals lose their dividing power and are unable to regenerate. However, in many experimental studies conducted today, in this process from disease to death, especially retinal ganglion cells can be determined anatomically and morphologically; This process has also been reversed with potential neuroprotective agents. The theoretical possibility that retinal ganglion cells can be saved before they die completely has further increased the interest in this issue. In this context, the protection of ganglion cells and neurons under ischemic stress is called neuroprotection (Nerve Protection). The aim of neuron-sparing therapy is to stop the chain leading to death with a series of sequential reactions starting with the triggering of ischemia, and to ensure the continuation of cell life. Theoharides et al. (2016) found that some Autism spectrum disorders (ASD) respond to treatment modalities provided by neuroprotectants. Today, apoptosis inhibition, anti-oxidants, mitochondrial regulators, anti-excitotoxic agents, neurotrophic factors, Ca-channel blockers, stem cell transplantation and gene therapy are current issues in neuron protection (Ozcan, 2021). The possibility of specific nano-sized neuroprotective agents for certain targets to circulate in our blood in the near future is increasing day by day. These applications can undoubtedly increase the athlete's senses by optimizing the functionality of the nervous system. However, the ethical situation regarding the application of these methods in sports is the duty of the World Anti-Doping Agency (WADA), as we have mentioned above.

Exoskeleton

The exoskeleton is an external mechanical skeleton containing various components (routers, digital system, battery). Whose function is similar to that of bones. Exoskeletons are the blessings of today's technology that imitate the whole body, lower limbs, upper limbs or just the hand of humans. They are designs that apply electric force like muscles to support, activate or block the positions of human joints. In these systems, there is also a digital control system that calculates the power ratios to be made according to the desired applications (Ganier et al., 2018). For this reason, they are also called exoskeleton robots. These structures are wearable electromechanical structures that work in interaction with human limbs. These robots are used for auxiliary limb in people with walking disability or elderly people, rehabilitation in paralyzed people and power increase in healthy people. In coordination with the nervous-muscular system of the human body, it continuously changes the stiffness and damping of the joints to which they are connected, providing a flexible and stable movement ability with minimum energy consumption (Demiray, Başer & Kilic, 2015). Today, the use of structures such as exoskeleton in sports activities has not yet been used, but in order to ensure the mobility of athletes, helpers with some standards (wheelchairs, prosthetic arms or legs, etc.) are used. As a matter of fact, Paralympic Games have been held since 1960, just like the Olympics, in which the disabled have been competing. It is held in summer and winter periods and the ongoing Paralympic Games are held today in a total of 28 sports branches, 22

of which are summer and 6 of which are winter sports branches. Some of the Summer Games sports include weight lifting, athletics, wheelchair basketball, volleyball, rugby, fencing, shooting, diving, while the Winter Games include sports such as Alpine skiing, ski running, wheelchair curling, sledding (Girişmen & Gurkan, 2018).

Figure 2. Paralympic sports. (Girişmen & Gürkan, 2018)

Today, the company named Ossürs has designed a multi-joint myoelectric hand with the "i-limb Quantum" project, which allows the artificial limb to be controlled with smart mobile devices. The natural movements of the hand were able to be produced with titanium fingers that increase the carrying load by 50%, grip strength by 30% and movement speed by 30% in order to increase power and functionality (Ossürs, 2021).

The rapidly developing technology today is expected to take the Paralympic games even further. Developing technology is rapidly advancing people to many goals, that could not reach before. Continuing scientific and technological studies in the field of exoskeleton gain qualifications that can respond to the more severely disabled situations of human beings.

Artificial organs

Today, the vital organs that have possibility of artificial organ transplantation or are expected to be artificially produced in the near future are kidney, heart, lung, liver and pancreas. Today, artificial organs can generally meet some of the functions of natural organs. Artificial organ is an organ produced by mechanical materials or tissue engineering, designed to restore some or all of the functions of the organs that have lost their functionality and vitality. Failure of any vital organs leads to the death of the patient in cases where the functions of this organ are not restored. For saving human life today organ transplantation is provided either from another human or with a man-made artificial organ. Artificial organs have been routinely transplanted to approximately 40 different parts of the human body for the last 30 years (Özcan, 2020). The artificial organ was first used in 1966 by M. DeBakey by connecting a simple pump that supports the function of the left ventricle of a dying patient (Liotta, 2012). Today, Akipek (2019) stated that an artificial heart project is working with the principle of magnetic fluids without any contact with blood is being carried out, and that they have designed a smaller, longer-lasting, non-corrosive system that does not harm the structure of the blood. Akipek (2019) also stated that in studies on the production of artificial organs using the patient's own cells can be reproduced by 3D printers and produced artificial organs with living tissue are

fully compatible with the patient. He stated that they carried out working on a system that prevents cell loss during the use of bioprinters in this field.

As can be seen, scientists carry out very important studies on artificial organs in order to prolong human life and quality. However, studies in this area have not yet become advanced and scientists are still working on them intensively. As a matter of fact, if the developments in the field of artificial organs had advanced, world-renowned athletes such as Naim Süleymanoğlu (50), whom we lost at a young age as a result of liver failure and complications, and Diego Armando Maradona (60), who suffered from lung and heart problems, could still be among us.

Cryonics

According to the American Heritage Medical Dictionary (2007), Freezing is defined as: "The process of freezing the body of a person who has an illness or recently died to prevent decomposition and thus to return to life in the future with the development of new medical treatments." Although it has been gone 67 years since Andjius and Lovelock (1955) managed to resuscitate mice frozen at 0 ° C using the microwave diathermy method in 1954, human freezing was completed in this area, but revitalization was not yet achieved. James Hiram Bedford (April 20, 1893 - January 12, 1967), who was a professor of psychology at the University of California, was the first person to allow his body "frozen" after his death (Perry, 2017; 35).

Since freezing is not yet proven or recognized medical procedure, legal death must be reported before freezing procedures can begin. After dead, in the early stages, the subject's circulation and respiration are mechanically restored, after is given preventive drugs the subject is rapidly cooled between 10 ° C and 0 ° C. A significant amount of body water is replaced with a cryoprotectant mixture to prevent the blood ice formation of the subject. Subject is cooled to a temperature below -120 ° C and kept in cryostasis. Whenever in the future the drug has this capability, the subject will be reheated, the cryoprotectant will be removed, the tissues will be repaired, diseases will be treated, and (if necessary) the subject will be rejuvenated (Best, 2008).

Today, there are several companies in the world, that provide freezing services for people to be resurrected someday in the future. Various services are provided in these cryonics centers to freeze only the head, whole body or animals. Among these companies serving around the World are: Alcor Life Extension Foundation (USA - Arizona), American Cryonics Society (USA - California), Cryonics Institute (USA - Michigan), Trans Time (USA - California), KrioRus (Russia - Moscow) and Vacree Technologies (China-Hefei) centers. More than 400 people around the world are now frozen in these centers and are waiting to be awakened in the future (Jie et al., 2021). During our study, it was not found an information about a known athlete in these centers.

Gene Engineering

Genetic engineering, which started with J. Watson and F. Crick's explanation of the double helix structure of DNA (Deoxyribonucleic Acid) in 1953 and when S. Kochan and H. Boyer performed DNA transfer to bacteria with genetic engineering works in 1973, has start directing our lives very effectively and quickly in the 21st century. Genetic engineering, also known as genetic modification, is a process of manipulating the genetic material of organisms using biotechnology (Demir, 2013). This may involve generating an entirely new DNA

sequence and modifying the organism's DNA, or applying methods to "silence" or "switch on" genes. The first product of the modifications tested was bacteria produced in 1973. The process continued in 1982 with discussions of insulin-producing bacteria and Genetically Modified Organisms (GMO) in agriculture, eventually it was expected to attract public attention to playing with human DNA. With the completion of the mapping of the human genome on April 14, 2003, the accelerated studies were pointing to a different future. As a result, the year was 1990 when the first gene therapy tried on human beings emerged (Aşkın, 2015). By the year 2007, it was revealed by the American scientist Richard Hanson and his team (2007) that transgenetic mice with the PEPCK-C enzyme, whose muscles were intensely increased by genetic modification, were 7 times more mobile and lived longer than ordinary mice. In addition, on the treadmill, control rats ran 0.2 km with a 20m / min running, while transgenetic mice could run more than 6 km (Hakimi, 2007). By March 2015, in a study conducted on monkeys, all animals became immune to HIV thanks to a recombinant gene added to monkey DNA (Gardner et al., 2015). In the same year, when Chinese researchers first edited the genes of a human embryo, this led to a global response from scientists to not make a baby using technology, at least for now (Regalado, 2018). However, by 2018, Chinese biophysicist He Jiankui and his team used the CRISPR technique (gene editing technology to mutate the DNA of human embryos) to make human embryos resistant to HIV infection (Cyranoski, 2018; Greely, 2019). We know nothing about different mutations twins named Lulu and Nana, that they have produced. Unlike genetic gene editing protocols in somatic cells, the gene editing protocol used to create these twins is predicted to make a permanent change in the line of inheritance that can be passed on to future generations (Singh, 2019). While the discussions on ethical and legal status in the field of genetic engineering continue, the births of Lulu and Nana have crossed the boundaries of the genomic revolution. With genetically modified and designed babies there is no obstacle for future generations to steer sports as at the many other fields. Perhaps today, designed dolls that will achieve various successes in sports are among us.

We have to underline that, gene doping involves the modification or addition of genes to existing genes only to improve performance in healthy people, while gene therapy refers to the manipulation of genes to prevent or treat a disease. While genetic enhancement in sports is currently possible at the somatic cell level, especially in recent years, the development of the CRISPR / Cas9 technique has opened the way to make changes in the germ line in a much cheaper and practical way (Brown, 2019).

Neural computer interface (NCI)

Berger in 1929 demonstrated the possibility of recording brain waves from an intact skull. Since then, a tremendous amount of brainwave data has been collected by neurophysiologists covering a variety of conditions, and in recent years, computers have been used extensively for analysis (Vidal, 1973). Neural-Computer İnterfaces are sometimes called the Mind-Machine İnterface (MMI), Brain-Machine İnterface (BMI), Direct Neural İnterface (DNI), or Neural Control İnterface (NCI) and as an external device Brain-Computer İnterface (BCI).

NCI are generally intended to increase, research, map, assist or restore human cognitive or sensory motor functions. Neurobiologists identify and manipulate components of the intracellular and extracellular environment to alter the regenerative potential of neurons, neuroengineers produce brain machines and neural interfaces that inhibit lesions to restore functionality, and neurorehabilitation specialists try to stimulate the nervous system even in chronic diseases (Krucoff et al., 2016).

As a result of the clinical studies of the Brain Computer Interface project, published on October 4, 2019 in the journal "The Lancet Neurology" and carried out in Clinatec (CEA, CHU Grenoble Alpes), the pilot concept of an exoskeleton with 4 specific limbs has been confirmed. For the first time, a paralyzed patient was able to move and control two upper limbs using a neuroprosthesis that collects, transmits, and decodes brain signals in real time to control an exoskeleton. With this technology, it is aimed to provide people with mobility impairments more mobility in the long term (Benabid et al, 2019). As seen, researches are intertwined and the exoskeletons can now be controlled by neurocomputers.

Figure 3. Representation of the Clinatec exoskeleton (Treillet, 2021).

According to Folacci & Baudin (2019), it is the first time that an integrated neural network was created on a chip and it was named Spirit. Powered for large computations at low power and latency, this integrated neural network on this chip is largely inspired by the functioning of the brain. Just like "real" neurons, Spirit uses single encoding (as opposed to binary encoding often used in digital electronics). Each event contributes to the gravity of the relationship between two neurons up to an impulse threshold. Another similarity with biology: resilient and ultra-fast memories as well as low energy consumption. Spirit, the first step towards dedicated chips to built-in "deep learning" solutions, combines performance and low energy consumption. Next step: a new Spirit version in 28 nm technology (Folacci & Baudin, 2019).

Neural computer interface studies open quite fictional doors such as the integration of living things with artificial intelligence. Maybe the doors are opening to human-controlled robot sports games, who knows? However, one of these gates is undoubtedly the Exocortex studies, and by going here to the work areas for Loading and Downloading Consciousness, another dimension beyond imagination is entering.

Exocortex (External-mind)

According to the Chemeurope encyclopedia (2021), the exocortex is consisted of two latin origin addings: the prefix exo-extrinsic or external - the main root noun cortex - initially means shell, but in the context of neuroscience it is the most advanced cognitive information processing area of the brain similar to the outer shell, and this refers to the layer. Therefore, based on component morphology, the term exocortex (external-mind) refers to a region outside, the cortex of the brain. An exocortex is an external information processing system that enhances the biological high-level cognitive processes of the brain. In other words, the external-mind (exocortex) is a hypothetical artificial information processing system that will increase the biological cognitive processes of the brain (Wordsense, 2021).

Uploading and downloading consciousness

Hypothetical technologies in this field

• Mind loading (“brain loading” or “whole brain emulation”, “mind copying”, “mind transferring”,…) (Sandberg & Bostrom, 2008).

Mind fusion (scenarios connecting more than one brain to the same outer cortex) (Sotala & Valpola, 2012)

• External cognition interface (strengthening the human neocortex with nerve prostheses and connecting to the outer cortex with a quantum physics-based connection) (Dambrot, 2016)

Because of the brain's flexibility, it is easier to build a brain-computer system than to create a full-fledged artificial intelligence from scratch. Such a device, not only helps to understand what consciousness is and upload it to a computer, but it can also unite the minds of several people. One of the developments in these areas is the device developed by Neuralink, founded by Mask (2019). Neuralink can analyze the information coming from the electrical messages of a region of the brain with electrodes connected to strings thinner than hair (Musk, 2019). Therefore, the electrical data of our brain started to be decoded, read and transferred to the computer. According to Elon Musk; with this technology, a complete brain-machine interface can be built and a kind of common life can be achieved with artificial intelligence. He declare that, the chip will communicate wirelessly with a headset that transmits information to a smartphone app. For now, the goal is to allow a person with implants to control the smartphone by thinking, but the technology could eventually spread to other devices such as robotic arms. Declaring that we will fall behind artificial intelligence even in a benign scenario, Musk stated that the chip will be tested on a sick person in the coming period. Thus, he emphasized that we can actually go on a journey with a high-bandwidth brain-machine interface (BMI) and we have the option to combine with artificial intelligence (AFP, 2019).

As you can see, an exoskeleton that can be controlled by the human brain has been produced, furthermore, a chip acting as a natural nerve cell has been developed. In the project like Neuralink, the development here has progressed in two directions. The natural nerves were enabled to give commands to the computer, and the computer-aided artificial intelligence interacted with the natural nerves, paving the way for symbiosis. It can be said that in the near future all will be quite different and we are at an important crossroads which include human and its social life.

Dıscussıon and Conclusıon

Every development that concerns human beings and its nature undoubtedly directly affects the world of sports. In this study, the scientific developments in the field of Transhumanism have been tried to be reconciled with the sports title. A new development and progress is being made every day in scientific centers around the world. In this respect, it is essential for the continuity of sports to know, examine and present predictions of Transhumanism studies which are the subject of our study. Transhumanism studies are concerned with the preservation of life by providing artificial organs for long life expectancy, from one side struggling against diseases, injuries and disabilities with genetic intervention, on the other side moving human beings into the future by deep-freezing (cryonics). Transhumanism is trying to transfer consciousness to machines, to multiple consciousness, to find a way for symbiosis with machines and immortality. Therefore, when you envision the developments

recorded on the basis of transhumanism in terms of today's sports, the possibility of encountering a sports picture in a different dimension becomes stronger.

As a result of developments in biotechnology, nanotechnology and genetics, we have entered an age where it is possible to equip the human body with superhuman abilities by pushing the limits of the human body beyond traditional doping methods. Genetic development through gene therapy or doping agents that can be sent to the body through nanotechnology or prostheses that can function beyond the normal limits of humans, are among the most discussed topics today (Ertin & Bardakçı, 2020). Regardless of which side we looks at, there is an intervention in human nature and this situation will shake the entire balance of our current world. In this respect, we can say that sports and humanity are on the eve of a great change. The arguments that transhumanism studies will cause significant changes in the social structures of today's societies are increasing day by day.

Considering the studies of transhumanism in general, it can be said that today's concept of combating doping remains quite innocent. Especially the effects of gene modifications on athletes, possible mutations threaten the natural genetics of the individual, while it is a strong possibility that today's sports will undergo changes. Since it is inevitable for countries with developed technology to advance in sports, it is highly likely that the current sports competitions will become meaningless or evolve into a completely different course. As Ertin and Bardakçı (2020) point out, if technology and pharmacology are used so intensely on the human body, the line between "natural" and "unnatural" will disappear, making it questionable what is important in sports competitions. As improvements and interventions in result of sports competition increase, it will become more important those, who give them superhuman abilities and interventions rather than the athletes who succeed with effort. It can be exemplified that the designer of the aesthetics made on the bodies, aroused more attention than the beauty of today's artists. In addition, as human development technologies become widespread, questions such as "who or what is a person" arise, and sports become one of the areas most affected by these questions. Because it seems difficult to talk about an equal and fair competitively environment in a "human+" future, without eliminating the ambiguities in concepts such as "human" and "beyond human" (Ertin & Bardakçı, 2020). Technological development may become the main reason for sporting success in the future. Today, sports and sporting success have performed a function that eliminates the differences between developed countries and undeveloped countries. It is known that the success of the backward countries against the developed countries in sports organizations has pumped morale and energy to the underdeveloped or developing countries and their peoples. Today, such sporting successes are qualified as victories, and they also have the capacity to give rise to the idea and inspiration that societies can be successful in other fields. In other words, sports and sporting achievements have played a role as an element that provides a balance between development and backwardness, albeit temporarily. However, developments in the field of Transhumanism seem to take away this function of sports. Now, it will be inevitable that countries developed in technology will be in the club of winners in sports.

The use of gene doping or gene transfer technology to improve athletic performance poses a significant threat to the integrity of anti-doping attempts. The use of these technologies has the potential to improve sports performance far beyond "traditional" pharmacological tools and is extremely difficult to detect them. This situation seems like a nightmare of sports. There is another ethical and more difficult side of gene transfer technology; the use of gene mapping in skill identification and the use of tissue engineering to recover from injuries such

as muscle atrophy following cruciate ligament injury. When such gene therapy is clinically available, can we deny its benefits to athletes? (McCrory, (2003).

Nowadays, thanks to genetic engineering, the possibility of meeting a perfect person or athlete who is resistant to diseases, with a longer life span and more qualified characteristics has increased considerably. A generation of athletes whose DNA sequencing has been interfered and whose characteristics can be inherited, will always be the favorite of the competitions. How will it be possible to distinguish between natural and artificial inheritance as long as a special marker is not used? Also, who can stand against an athlete who can access, manage and operate universal information with Neuralink-like chips, that can be implanted or attached to the brains of athletes? How will be the courage of an athlete who can have regenerative organs and tissues after any strain or accident? Who can overcome these nano-layers that provide ergonomic use of organs and protect them with nano-agents injected into the bodies of athletes? Well, is it possible to freeze the athlete and send him to the next century? Or will it be possible to download the athlete's memory and consciousness to external memories, upload them to other artificial bodies, reproduce them and take part in different venues (galaxies, planetes) at the same time? Or as Mazan (2015) also asked; Do we want to live forever? Do we want to end all suffering and eventually reach the stars by overcoming bodily fluids, thanks to our superhuman intelligence? Of course. But if the price is paid with our soul...

Some studies in the field of transhumanism in recent years go beyond of our social acceptance and norms, turn into agendas where some topics such as religion, morality and social philosophy are discussed in the center. In the recent future the genetic structure of human being can been intervened, in other words "GMO" athletes can be among us. In the face of this reality, where human become intervened by technological developments, doping agencies (WADA), sporting organizations (International Olympic Committee, International Sport Federations) and countries (Assemblies, National Sport Federations...) have duty to discussing the situation of athletes and sustainability of sport organizations. This will be the most important topics on their agenda and taking start to this combat from today, will not be a dreamy approach.

Recommendatıons

What is ethical? To stay with capablility of natural development of our body, or to gain competence by being modified mentally and physically? Which competitions do you think would be more interesting; natural athletes or artificial ones? Ethical regulations in sports should be reconsidered urgently by seeking answers to such questions. We are on the eve of taking action on the near-ending studies in the field of transhumanism. According this Transhumanist development, the predictions that individuals inequality will advance, the gap between the strong and the weak will be open even more. The question, "What kind of world we want to leave to the next generations?" is taking importance. It is clear that a global convention is needed for the protection of sports in general, and for the benefit of the athlete in particular. With new legal regulations concerning the athlete (human) and its nature all International Federations, International Olympic Committee (IOC), State Institutions and organizations must take care of sports and its competitions.

As it is the first research based on a literature review to describe the relationship between Transhumanism and Sport, the study has its own limitations. In the future studies, the relationship between Transhumanism and sport should be examined empirically by including certain measurements and experiments. It is also necessary to expand and focus on such Transhumanist studies more sensitively.

REFERENCES

AFP (2019). Elon Musk wants to merge human brains with AI. Retrieved from: https://www.ctvnews.ca/sci-tech/elon-musk-wants-to-merge-human-brains-with-ai-1.4511363

Akkaya, M.Ş. (1947). Humanizm'in çıkışı ve yayılışı.[The emergence and spread of Humanism]. Ankara Üniversitesi Dil ve Tarih-Coğrafya Fakültesi Dergisi, 5(2), 201-222.

Akpek, A. (2019). İnsan kendini tasarlıyor: yapay organlar. İnsanlık 2.0. Biyolojisi değişen insana doğru. [Man designs himself: artificial organs. Humanity 2.0. Towards a person whose biology has changed]. TMMOB Elektrik Mühendisleri Odası, İzmir Şb. Bülteni. 31(349), 1-28.

Andjus, R.K. & Lovelock, J.E. (1955). Reanimation of rats from body temperatures between 0° and 1°C by microwave diathermy. The Journal of Physiology, 128(3), 541-546.

Anissimov, M.M. (2015) Our accelerating future. How superintelegence, nanotachnology and transhumanizm will transform the planet. California: Berkeley Zenit Books.

Aschwanden, C.(2000). Gene cheats. New Scientist. 24–9.

Aşkın, M. (2015). Genetik mühendislik: Dost mu düşman mı? [Genetic engineering: Friend or foe?]Türkiye Bioetik Dergisi, 2(2), 160-165.

Benabid, A.L., Costecalde, T., Eliseyev, A. et al. (2019). An exoskeleton controlled by an epidural wireless brain–machine interface in a tetraplegic patient: a proof-of-concept demonstration. The Lancet Neurology, 18(12), P1112-1122, DOI:https://doi.org/10.1016/S1474-4422(19)30321-7

Bernal, J. D. (1929). The world, the flesh and the devil: An enquiry into the future of the three enemies of the rational soul. Verso Books.

Best, B. (2008). Scientific justification of cryonics practice. Rejuvenation research. 11. 493-503. 10.1089/rej.2008.0661.

Brown, J. (2019). Genetic doping: WADA we do about the future of 'cheating'in sport?. The International Sports Law Journal. 1-23.

Brumlik, M. (2016) Transhumanism Is Humanism, and Humanism Is Transhumanism. In: Hurlbut J., Tirosh-Samuelson H. (eds) Perfecting Human Futures. Technikzukünfte, Wissenschaft und Gesellschaft / Futures of Technology, (pp 121-140). Science and Society. Springer VS, Wiesbaden. https://doi.org/10.1007/978-3-658-11044-4_6

Chemeurope (2021). Exocortex. Retrieved from: https://www.chemeurope.com/en/encyclopedia/Exocortex.html

Cryonics (2021). (n.d.) The American Heritage® Medical Dictionary. Retrieved from: https://medical-dictionary.thefreedictionary.com/cryonics

Cyranoski, D.(2018). First CRISPR babies: six questions that remain [news article]. Nature. https://doi.org/10.1038/d41586-018-07607-3

Çınar, V, Yazıcı, G, Şebin, K & Öztürk, M . (2010). Doping ve sporcularda kullanımı. [Dopıng and theır usage on sportsman]. Beden Eğitimi ve Spor Bilimleri Dergisi , 7 (4) , 27-31.

Dambrot, S. M. (2016). Exocortical Cognition: Heads in the Cloud - A transdisciplinary framework for augmenting human high-level cognitive processes. IEEE International Conference on Systems, Man, and Cybernetics (SMC), Budapest, Hungary, (pp. 004007-004014), https://doi.org/10.1109/SMC.2016.7844860.

Demir, A. (2013). Etik açıdan insan genom projesi. [The human genomproject-etically]. İstanbul Ticaret Üniversitesi Sosyal Bilimler Dergisi. 23. 317-327.

Demiray, M,. Başer, Ö. & Kilic, E. (2015). Alt uzuv dış iskelet robot eklemlerinde kararlılık için sönümleme katsayıları ve momentlerinin hesaplanması. [Calculation of damping coefficients and moments for stability in lower limb exoskeleton robot joints]. Süleyman Demirel Üniversitesi Fen Bilimleri Enstitüsü Dergisi. 18. 35-51. https://doi.org/10.19113/sdufbed.41983.

Ertin, H. & Bardakçı, T. (2020). Sporda insanı geliştirme: doping ve dopingle mücadelenin tarihi. [Human development in sport: the history of doping and anti-doping].Turkiye Klinikleri J Med Ethics.28(1):99-109. https://doi.org/10.5336/mdethic.2019-71091

Evolution (2021). Transhuman - human evolution. Retrieved from: http://www.dieweltistwasgemachtes.de/transhuman/

Folacci, M.A. & Baudin, L. (2019) Construire aujourd'hui la société de demain. [Building the future society from today]. CEA rapport annuel 2019. p.16. Retrieved from: https://www.cea.fr/multimedia/Lists/StaticFiles/rapports/annuel/pdf/CEARA2019FR.pdf

Fratil, P. et. al. (2015). Smart drugs and synthetic androgens for cognitive and physical enhancement: revolving doors of cosmetic neurology. Current Neuropharmacology, 13, 5-11.

Ganier, A. Boudault, A. & Garrec P. (2018). L'exosquelette. Les défis du CEA. [The exoskeleton. The CEA challenges] Retrieved from: https://www.cea.fr/multimedia/documents/infographies/exosquelette.pdf

Gardner, M.R., Kattenhorn, L.M., Kondur, H.R., von Schaewen, M., Dorfman, T., Chiang, J. J., Haworth, K.G., Decker, J.M., Alpert, M.D., Bailey, C.C., Neale, E.S., Jr, Fellinger, C.H., Joshi, V.R., Fuchs, S.P., Martinez-Navio, J.M., Quinlan, B.D., Yao, A.Y., Mouquet, H., Gorman, J., Zhang, B., … Farzan, M. (2015). AAV-expressed eCD4-Ig provides durable protection from multiple SHIV challenges. Nature, 519(7541), 87–91. https://doi.org/10.1038/nature14264

Girişmen, G. & Gürkan, M. (2018). Paralimpik Oyunlar. [Paralimpic Games]. Retrieved from: https://kulturveyasam.com/8-madde-ile-paralimpik-oyunlari-turk-sporcularin-ilk-sampiyonluklari/

Greely, H.T. (2019). CRISPR'd babies: human germline genome editing in the 'He Jiankui affair'. Journal of law and the biosciences, 6(1), 111–183. https://doi.org/10.1093/jlb/lsz010

Hakimi, P., Yang, J., Casadesus, G., Massillon, D., Tolentino-Silva, F., Nye, C. K., Cabrera, M. E., Hagen, D.R., Utter, C.B., Baghdy, Y., Johnson, D.H., Wilson, D.L., Kirwan, J.P.,

Kalhan, S.C., & Hanson, R.W. (2007). Overexpression of the cytosolic form of phosphoenolpyruvate carboxykinase (GTP) in skeletal muscle repatterns energy metabolism in the mouse. The Journal of biological chemistry, 282(45), 32844–32855. https://doi.org/10.1074/jbc.M706127200

Haldane, J.B.S. (1924). Daedalus or Science and the Future. (pp. 63-65). New York: EP Dutton.

Huxley, J. (1968). Transhumanism. Journal of Humanistic Psychology, 8. 73-76. https://doi.org/10.1177/002216786800800107.

Jie, S.,Yameng, L. & Xiaoyi, L. (2021). China explores cryopreservation with leading technologies but doubts remain about widespread adoption of technology. Retrieved from: https://www.globaltimes.cn/page/202101/1213554.shtml

Kadıoğlu, M. (2011). Humanizm. Istanbul Journal of Sociological Studies, 0 (23). Retrieved from https://dergipark.org.tr/tr/pub/iusoskon/issue/9545/119216

Krucoff, M.O., Rahimpour, S., Slutzky, M.W., Edgerton, V.R., & Turner, D.A. (2016). Enhancing nervous system recovery through neurobiologics, neural ınterface training, and neurorehabilitation. Frontiers in neuroscience, 10, 584. https://doi.org/10.3389/fnins.2016.00584

Liotta, D. (2012). Michael E. DeBakey and Denton A. Cooley— Mike, the Master Assembler; Denton, the courageous fighter: A personal overview unforgettable past remembrances in the 1960s. Open Journal of Thoracic Surgery. 02. 37-45. https://doi.org/10.4236/ojts.2012.23010.

Mazan, T.(2015). Transcend the Flesh: Transhumanism debate. 10.13140/RG.2.1.3797.6168.

McCrory, P. (2003). Super athletes or gene cheats?. British journal of sports medicine. 37. 192-3. https://doi.org/10.1136/bjsm.37.3.192.

More, M. (1990). Transhumanizm. Retrieved from: https://humanityplus.org/philosophy/transhumanist-faq/

More, M. (2010). True transhumanism. Edited by Gregory R. Hansell and William Grassie, Philadelphia: Metanexus USA. 136.

More, M., & Vita-More, N. (Eds.). (2013). The transhumanist reader: Classical and contemporary essays on the science, technology, and philosophy of the human future. John Wiley & Sons.

Musk, E (2019). An integrated brain-machine interface platform with thousands of channels. Retrieved from: https://www.biorxiv.org/content/10.1101/703801v4.full.pdf Erişim tarihi: 01.05.2020

Ossürs (2021). i-Limb® Quantum. Retrieved from: https://www.ossur.com/en-us/prosthetics/arms/i-limb-quantum

Özcan, A. (2020). Yapay Organlar. [Artificial Organs]. Balıkesir Üniversitesi/Fen Edebiyat Fakültesi Kimya Bölümü. Retrieved from: http://kimya.balikesir.edu.tr/Seminerler/dokuman/201610105008AleynaOzcan_1.pdf

Özcan, A. (2021). Nöron Korunması. [Neuroproteective] Retrieved from: https://www.todnet.org/glokom/noron-koruma.htm#:~:text=Retina%20ganglion%20hücrelerinin%20tam%20olarak,verilmektedir%20(1%2C2).

Pepperell, R. (2003). The posthuman condition. Consciousness beyond the brain. Bristol, UK: Intellect Books, 100.

Perry M. (2017). A year of jubilees: Some important cryonics anniversaries. Cryonics. 38(3). 1-48

Regalado, A. (2018). Chinese scientists are creating CRISPR babies. MIT Technology Review. Availiable online at https://www .technologyreview.com/s/612458/exclusive-chinese-scientists-arecreating-crispr-babies/

Sandberg, A., & Bostrom, N. (2008). Whole brain emulation: a roadmap. Technical Report #2008-3, Future of Humanity Institute, Oxford, UK: Oxford University. Retrieved from https://www.fhi.ox.ac.uk/brain-emulation-roadmap-report.pdf

Sandel, M.J. (2007). The case against perfection: Ethics in the age of genetic engineering. Cambridge: Harvard University Press;. p.25.

Singh, S. (2019). Lulu and Nana open Pandora's box far beyond Louise Brown. Canadian Medical Association Journal. 191. E642-E643. https://doi.org/10.1503/cmaj.71979.

Sotala, J., & Valpola, H. (2012). Coalescing minds: brain uploading-related group mind scenarios. International Journal of Machine Consciousness, 4(1), 293–312.

Theoharides, T., Tsilioni, I., Patel, A. et al. (2016) Atopic diseases and inflammation of the brain in the pathogenesis of autism spectrum disorders. Transl Psychiatry 6, e84. https://doi.org/10.1038/tp.2016.77

Treillet J. (2021). Photo-exosquelette. Retrieved from: https://www.alamy.com/stock-photo/exosquelette.html

Unal, M. & Unal-Ozer, D. (2003). Sporda doping kullanımı. [Doping use in sports]. İst. Tıp Fak. Mecmuası 66 (3), 189-198.

Vidal, J.J. (1973). Toward Direct Brain-Computer Communication. Annual Review of Biophysics and Bioengineering. 2(1), 157-180.

Wordsense. (2021). "Exocortex" – WordSense online dictionary (28th February, 2021). Retrieved from: https://www.wordsense.eu/exocortex/