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ORIGINAL RESEARCH

The Relationship Between Hearing Level and Speed and Speed of Linear Direction Change of Handball Players with Hearing Impairments

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Abstract

The aim of this study is to investigate the relationship between hearing level of hearing impaired female handball players with speed performance and linear change of direction (COD) times. 19 athletes of the Hearing Impaired National A women's handball team, which ranked second in the 2018 Deaf World, participated in the study voluntarily. The average age, height and body weight of the athletes are 22.63 ± 4.46 years, 165.26 ± 4.54 cm, 65.63 ± 2.03 kg, respectively. Body weights of the athletes were evaluated by an electronic scale with an accuracy of 0.1 kg, a digital length measuring device with a height of 0.01 cm and a speed and linear change of direction (Change of Direction and Acceleration Test-CODAT) of 20 meters with a Fusion Sport device. Hearing level measurement was applied by audiometry. The SPSS 19.0 package program was used to analyze the data, and the correlation coefficients and statistical significance of the variables were calculated with the Pearson Correlation Test. In our study, a low and moderate positive correlation was found between the level of hearing loss and 20m speed and COD performance ($p < 0.05$). As a result, hearing loss level of deaf athletes affects speed and direction change performance. Many additional studies are needed to improve the sports performance of deaf athletes. It is considered that the study will contribute to this field.

Keyword: handball, hearing impaired, speed, change of direction.

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INTRODUCTION

Hearing impaired individuals generally avoid interaction due to preferring to live in their own environment; communicating with each other through sign language and the other individuals in the society not knowing sign language or having very little knowledge about it (Gür, 2001). Similarly, they do not wish to participate in sports activities with other athletes who develop normally (Dursun et al., 2015). Hearing impaired athletes do not experience any kind of physical lack and can participate in competitive sports without any limitations. The communications barriers related to hearing is the only factor which separates them from the other athletes (Kurková et al., 2011). However, this factor affects these individuals negatively. Early diagnosis is of vital importance in terms of the continuity of the social lives of hearing impaired individuals. Early participation in sports activities which are the most important tool of social life is an important factor for these individuals in terms of improving their quality of life (Doğu, 2017).

Hearing impairment depends on numerous factors such as the type and degree of hearing loss which is effective in the performance of the individual with hearing impairment, the age in which the impairment begins, the family's ability to cope with the impairment, the child's intelligence level, language skills and educational experiences (Meyen and Skrtic, 1995). Compared to the normal group, individuals with hearing impairments in average have weak motor development and physical fitness performance (Ibrahim et al., 2017). Children with hearing impairment have weaker balance and agility compared to normal children (Metgud and Topkar, 2019).

Handball is a type of sports which involves explosive sprints, jumps, direction changes, passing the ball and body contact while doing these (Marques, 2009) and in which speed and agility are important. The basic movement patterns of team sports require athletes to make sudden changes in body movements and move their joints faster and these movements depends on their skill in doing them, visual processing, reaction time, perception and other factors. The ability to move in different directions in all sports types is more important than sprinting from a flat line (Šımonek et al., 2017).

There are many organizations and activities carried out in our country and the world for the participation of handicapped individuals in sports and being competitive. For athletes with hearing impairment, Deaf Olympics is organized every 4 years, Hearing Impaired World Championships every 2 years and Hearing Impaired European Championship every 2 years when it does not coincide with the Hearing Impaired World Championship. The purpose of this study is to analyze the relationship between the hearing level and speed performance and linear direction change of Hearing Impaired National A women's handball team who ranked second in the 2018 Deaf World.

METHOD

Nineteen female athletes with an average age of 22.60 ± 4.46 years, average height of 165.26 ± 4.54 cm, average body weight of 65.63 ± 11.18 kg and average BMI of 24.05 ± 4.13 years participated voluntarily in the study (Table 2). 19 athletes of the Hearing Impaired National Senior Women's Handball Team, which ranked second in the 2018 Deaf World, participated in the study voluntarily. Athletes were recruited if they: were currently active in Turkey handball (in the hearing impaired league) competition; had a general field sport training history at least 2 trainings per week) extending over the previous 12 months; did not

have any existing medical conditions that would compromise participation in the study; and were available for all testing occasions. The athletes were given detailed information about the study, asked to fill in the "informed consent form" and their consent was taken. The study procedures were carried out in accordance with the ethical standards of human researches of the Helsinki Declaration 2008 Principles.

A familiarization session was conducted 48 hours prior to the first testing session. Two testing sessions were then completed by all subjects, also separated by 48 hours (Sheppard et al., 2006). Prior to data collection in the first testing session, each subject's age, height, weight, body mass index (BMI) were recorded. Then, hearing level (sensitivity) was measured. This measurement was done with the audiometer device. This device allows measuring sensitivity to pure sound and speaking sounds. The test applied with earphones shows the "air conduction" level. "Bone conduction" levels are determined by holding a small vibrator attached to the same audiometer tightly on the skull and usually on the mastoid Process. The vibrations on the device are transmitted to the skull, omit the middle ear through the external ear and directly reach the inner ear.

Table 1. Classification of Hearing Loss

The lightest sound the individual can perceive	**Classification of sound**
20 dB or lighter	Normal hearing
25 dB or stronger	Slight hearing loss
45 dB or stronger	Medium level hearing loss
65 dB or stronger	Advanced level hearing loss
85 dB or stronger	Full hearing loss

Finally, for linear direction change measurement, Change of Direction and Acceleration Test (CODAT), and 20 m Speed Test was applied for speed measurement of the athletes

20 m Speed Test

Speed was measured with the 20m Speed Test (sec). The athletes were given a sufficient rest period and ran 20 m at maximum speed with the start sign. The time between start and end was recorded. Two trials were carried out and the best result was recorded (Lockie et al., 2013).

Change of Direction and Acceleration Test (CODAT)

Linear change of direction was measured with the Change of Direction and Acceleration Test (CODAT). The dimensions and movement direction for the CODAT is shown in Figure 1. The CODAT involves a straight 5-m sprint, followed by three 3-m sprints. These 3-m sprints are made at angles of 45° and 90°. Following the third 3-m sprint, there is a straight 10- m sprint to the finish line. The athletes were instructed to complete the test as quickly as possible. The athletes were also to ensure that they cut around markers and did not run over them. Trials were stopped and reattempted after the rest period if the subject did cut over the top of a marker, so that two successful trials were completed. Two trials were carried out, a sufficient rest period was given between trials and the best result was recorded (Lockie et al., 2013).

Data Analysis

In the analysis of the data, the SPSS 19.0 software was used; the mean standard deviation, maximum and minimum values were determined, and Pearson Correlation test was used to determine the correlation coefficients and statistical significance of the variables.

FINDINGS

In this section psychological resilience levels based on the gender variable are presented in tabular for the objective of the study.

Table 2. Test Results of the Athletes

		Hearing Loss (dB				Measurement			Test	
No	**Age**	**Right (Air)**	**Right (Bone)**	**Left (Air)**	**Left (Bone)**	**Height (cm)**	**Weight (kg)**	**BMI (kg/m2)**	**COD (sec)**	**20m speed (sec)**
1	34	108	67	112	67	163.4	64.4	24.1	7.11	3.20
2	27	107	66	114	66	160.3	59.3	23	6.07	2.70
3	28	117	67	118	67	160.1	58.4	22.7	6.32	2.95
4	24	120	67	120	67	174.8	75.7	24.8	6.74	2.54
5	25	108	66	109	67	160.4	56.4	21.9	6.15	2.66
6	16	73	68	80	70	170.2	78.3	27	6.07	2.45
7	28	103	70	102	70	168.9	59.7	20.9	6.53	2.81
8	18	107	70	108	70	163.5	71.1	26.7	6.56	2.56
9	19	93	67	100	66	161.4	48.7	18.5	5.63	2.28
10	20	94	66	99	65	169.4	65.2	22.8	5.63	2.19
11	21	96	70	105	69	170.3	66.1	22.8	5.61	2.23
12	19	92	70	97	70	161.6	63.3	24.3	6.54	2.41
13	20	115	70	92	70	164.1	87.0	32.3	7.03	2.97
14	19	110	70	106	70	159.7	75.7	29.7	6.99	2.57
15	19	101	71	103	69	165.6	61.3	22.4	6.59	2.86
16	25	105	70	105	68	167.3	63.7	22.6	6.34	2.81
17	23	109	69	98	71	170.8	64.8	22.1	6.67	2.42
18	24	110	66	115	64	171.3	47.6	16.1	5.88	2.51
19	21	68	63	67	63	165.4	88.3	32.3	6.6	2.73
Min.	16	68	63	67	63	159	47.4	16.01	5.61	2.62
Max.	34	120	71	120	71	164	88.8	32.3	7.11	2.16
Mean	22.6	101.89	68.47	102.63	67.84	165.26	65.63	24.05	6.37	3.2
S.D.	4.46	13.55	2.43	12.84	2.31	4.54	11.18	4.13	0.46	0.26

According to the results of the analysis, there is a medium level positive correlation between the linear direction change times of handball players and the right ear (air); a low level positive relationship in the right ear (bone); a low level positive relationship in the left ear (air) and a medium level positive relationship in the left ear (bone) ($p<0.05$). A low relationship was determined between the linear direction change time and body height; and a medium positive relationship between body weight and BMI ($p<0.05$). A medium level positive relationship was determined between 20m speed and the right ear (air); low level positive relationship in the right ear (bone); low level positive relationship in the left ear (air) and low level positive relationship in the left ear (bone) ($p<0.05$). A medium level correlation was determined between 20m and body height and a low level positive correlation between body weight and BMI ($p<0.05$).

Table 3. The relationship between the hearing levels of the athletes and physical characteristics

		Age (years)	**Height (cm)**	**Body weight (kg)**	**BMI (kg/m2)**	**Right ear (air)(dB)**	**Right ear (bone)(dB)**	**Left ear (air)(dB)**	**Left ear (bone)(dB)**
COD (sec)	r	0.223	0.165*	0.522*	0.579*	0.319*	0.277*	0.029*	0.391*
	p	0.561	0.047	0.008	0.005	0.033	0.048	0.049	0.003
20m speed (sec)	r	0.61	0.326*	0.149*	0.252*	0.332*	0.034*	0,13*	0.017*
	p	0.122	0,031	0.044	0.039	0.029	0,046	0.43	0.049

*p<0.05

DISCUSSION

In our study, a low and medium level positive correlation was found between hearing loss level and 20m speed and COD performance. While it is seen in other studies that the physical development of in particular children with hearing impairments is not different from the peers with no hearing impairments and that hearing impairment does not affect their physical development, it has been shown that hearing impairment in adults is related to weak physical functionality compared to individuals with normal hearing problems (Li et al., 2012). It is considered that this hearing loss results from cognitive load, social isolation and the individuals not being aware of the hearing environment (Gispen et al., 2014). In addition, as a result of damage in the mastoid bone located behind the earlap, balance problems in the development period of some individuals with hearing impairments (Sarı 2002). It is known that there is a relationship between balance and direction change speed (Miller et al., 2006, Delextrat et al., 2015, Hammami et al., 2017) A low and medium level correlation was found between all direction change tests and balance (Sekulic et al., 2014). During a body movement, balance is needed to preserve the body position, increasing speed and slowing down, sudden place and direction changes. It is known that there is a relationship between hearing level and balance and that balance is needed in numerous motor performances such as increasing speed, slowing down, sudden stops and direction changes (Malina, 1999).

Açak et al. (2012) compared the agility and visual reaction time of futsal players and determined a significant difference between athletes with full hearing loss and those who hear with hearing aids in terms of the agility test values of the study group in the identification of handicap level. This result shows that there is a difference in the agility parameter of the individuals with hearing impairments in terms of handicap level. The researchers expressed that the well-being in the physical values of the athletes with hearing impairments affect sportive performance and that hearing loss is not an advantage or a disadvantage.

İbrahim et al. (2017) in their study on netball players (14.4 ± 0.76 years: 16.56 ± 0.88 years) and netball players with hearing impairments (14.50 ± 0.67 years: 16.62 ± 0.67 years) determined that normal athletes have a lower COD time compared to athletes with hearing impairments. Preserving postural stability and balance is a complex process with requires multiple systems such as sensory and information processing systems. This complex process negatively affects COD performance and individuals with semicircular canal and vestibular problems (Rajendran and Roy, 2011). The vestibular system has an extremely important place in the postural mechanism and muscle control. Problems in balance and muscle control which arise due to the vestibular systems being affected in individuals with hearing impairments negatively affect muscle strength and motor functions (Horvat, 1990). It was shown that individuals with hearing impairments in average have weak motor development and physical fitness performance level in comparison to the normal group (Ibrahim et al., 2017). Children with hearing impairments have weak balance and agility compared to normal children (Metgud and Topkar, 2019).

CONCLUSION

As a result, there is a relationship between hearing loss level and direction change performance in athletes with hearing impairments. Studies on athletes with hearing impairments are in general related to balance and physical components and studies on

hearing loss level, speed and direction change time are quite limited. Further additional studies are needed to develop the sports performance of athletes with hearing impairments. It is considered that this study will contribute to this field.

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ORIGINAL RESEARCH

Investigation of the Basic Psychological Needs of Physical Education and Sports School Students According to Several Variables

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Abstract

This study aims to investigate the levels of basic psychological needs in students of the faculty of sports sciences according to the self-determination theory in terms of several variables. In the study, the clustering method was used. This study is descriptive and inferential. The study was conducted with 1114 participants from six different faculties of sports sciences during the 2015-2016 education period. In the study, the criterion of voluntary participation was adopted. As the data collection tool, the demographic information form, which was developed by the researcher, and the Basic Psychological Needs scale were used. The collected data were evaluated by SPSS 21.0 statistics software in a computer environment. It was determined that there were significant differences in terms of the department, exercising, family attitude, and residence variables of the participating university students in the study while no significant difference was observed in terms of the gender variable. Several demographic variables of the university students influence their levels of satisfaction in meeting their basic psychological needs.

Keyword: basic psychological need, physical education, sports.

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This study was prepared as a Master of Arts thesis in 2016.

INTRODUCTION

People require various needs from the moment they are born until the moment of their biological deaths. These needs can be physiological or psychological. Maslow stated that people have several needs that come from their birth and shape various behaviors (Maslow, 1970). Many theorists evaluated the concept of needs, which is based on Maslow's hierarchy of needs, and novel perspectives were put forward on the subject. Several theories stated that individuals' needs existed since birth while other theories stated that they were gained later. Darley (1991) defined needs as the states of insufficiencies that resulted from individuals' biological (physiological) or psychological requirements (Darley, 1991). Hull emphasized that the whole motivation of individuals' needs consisted of their biological imbalances or needs and this need resulted from biological requirements that emerge in organisms in the urge theory (Hull, 1943). Deci and Ryan emphasized that needs came from birth while triggering the organisms at deficient states and having a quality that enables the continuation of liveliness (Deci and Ryan, 2000). Murray stated that needs are both biological and psychological while our needs constitute a force that directs our perceptions and behaviors and it was a state of stress where the needs of individuals should be met (Murray, 1938). Briefly, it is possible to define the concept of basic needs as necessities, needs and requirements, and state that it represents a deficiency and insufficiency. In this study, we attempted to focus on the theory of self-determination, which is one of the theories related to needs. Essentially, self-determination is the individuals' experience of the feeling of free choice in initiating and regulating their behaviors. The self-determination theory is based on the focus of understanding the development process of individuals in groups and understanding the psychological needs of individuals (Deci et al., 1989). In the self-determination theory, Ryan and Deci stated that the psychological needs that cannot be met can result in mental disorders while Kasser and Ryan emphasized that these needs are required for the maintenance of life, development, and health (Kasser and Ryan, 1999). The self-determination theory was investigated in terms of three aspects as competence, relatedness, and autonomy. These three needs are briefly defined as the following. The need for autonomy is defined as making one's own decisions about the subjects related to the individual while the need for competence is defined as using skills and developing them in addition to the need for relatedness, which is defined as connecting with other people and feeling socially valuable (Deci and Ryan, 2000). It is possible to state that meeting these needs can result in the subjective well-being of individuals and ensure positive development in individuals' behaviors. Positive development in positive affect, negative affect, and life satisfaction aspects of individuals whose basic psychological needs are met will enable individuals to be better and happier. Namely, when individuals experience relatively high levels of positive feelings, low levels of negative feelings and have high levels of life satisfaction, these emerge as happiness in individuals and enable subjective well-being (Özdemir, 2012). Based on meeting the basic psychological needs of individuals, stated that individuals' states of well-being can develop and improve their motivation (Deci and Ryan, 1996). It is also possible to state that when the needs of individuals are not met, negative feelings such as anxiety, sadness, and hostility can emerge (Deci and Ryan, 2000).

This study was conducted to reveal the individuals' levels of meeting their needs, which belong to them and which are shaped by their environment, in their mental world.

METHOD

Study Design

This study was conducted as a descriptive study in the cluster model. Cluster analysis presents summative information to researchers by grouping ungrouped data according to their similarities (Kalaycı, 2010).

Population and Sample

The population of the study consisted of the cities of Kahramanmaraş, Malatya, Kayseri, Kırşehir, Hayat, and Elazığ. The sample of the study included 1114 university students (633 males and 481 females), who studied at 1st, 2nd, 3rd and 4th grades in the departments of physical education and sports, and coaching education at Mustafa Kemal University, Kahramanmaraş Sütçü İmam University, Fırat University, İnönü University, Erciyes University, and Ahi Evran University.

Data Collection

The demographic information form, which was developed by the researcher, and the Basic Psychological Needs Scale were conducted with the university students in the sample group according to the aims of the study. The demographic information form covered five variables (gender, department, place of residence, family attitude, the status of active exercise). The basic psychological needs scale, which was developed by Deci and Ryan (2000), was adapted into Turkish by Üre, Kesici, Bozgeyikli, and Sünbül (2003). The scale covers three subscales where the scores of individuals in each item of a subscale are summed, obtaining scale scores for the 3 subscales for each individual. These three subscales are autonomy, competence, and relatedness, respectively. The items of these subscales are distributed as the following.

Need for Competence: Items 3, 5, 10, 13, 15 and 19; Need for Autonomy: Items 1, 4, 8, 11, 14, 17 and 20; Need for Relatedness: 2, 6, 7, 9, 12, 16, 18 and 21 (Deci and Ryan, 2000).

Data Analysis

The data in the study were analyzed by Package for the Social Sciences (SPSS) 21.0 software. In the data analysis, descriptive information (count, percentage, mean and standard deviation) was evaluated first. To determine whether the data collected from the basic psychological needs scale and the demographic variables had a normal distribution, the Kolmogorov-Smirnov test was conducted. As a result of this test, it was observed that the data did not demonstrate a normal distribution. Therefore, the Mann-Whitney U test (MWU) was conducted for comparisons with two samples while the Kruskal-Wallis H test (KHW) was conducted for comparisons with more than two samples. In the study, the level of statistical significance was regarded as $p<0.05$.

FINDINGS

Table 1. Results of the Analysis According to the Variable of Gender

	Gender	N	Mean	SD	Z*	p
Need for Relatedness	Male	633	562.08	355796.00	-.547	0.584
	Female	481	551.47	265259.00		
Need for Autonomy	Male	633	571.32	361646.00	-1.653	0.098
	Female	481	539.31	259409.00		
Need for Competence	Male	633	559.00	353849.00	-.180	0.857
	Female	481	555.52	267206.00		

p>0.05; *Mann Whitney U

According to Table 1, there is no significant difference in the mean scores of relatedness, autonomy, and competence subscales in terms of the gender variable of university students (p>0.05).

Table 2. Results of the Analysis According to the Variable of Department

	Department	N	Mean	SD	Z	p
Need for Relatedness	PEST**	542	528.00	286177.50	-2.990	0.003*
	CE***	572	585.45	334877.50		
Need for Autonomy	PEST	542	528.44	286417.00	-2.949	0.003*
	CE	572	585.03	334638.00		
Need for Competence	PEST	542	525.01	284555.00	-3.299	0.001*
	CE	572	588.29	336500.00		

p<0.05; *Mann Whitney U, **Physical Education and Sports Teaching Department, *** Coaching Education Department

According to Table 2, it was determined that there were statistically significant differences in the mean relatedness, autonomy, and competence subscale scores of university students from physical education and sports, and coaching education departments in terms of the variable of the department (p<0.05). This difference is in favor of the students in the coaching education department. In other words, the needs for relatedness, autonomy, and competence in students of the coaching education department were met at higher levels.

Table 3. Results of the Analysis According to the Variable of the Status of Exercising

	Do you exercise?	N	Mean	SD	Z	p
Need for Relatedness	Yes	610	563.67	343837.00	-.706	0.480
	No	504	550.04	277218.00		
Need for Autonomy	Yes	610	580.47	354089.50	-2.635	0.008*
	No	504	529.69	266965.50		
Need for Competence	Yes	610	579.70	353615.50	-2.547	0.011*
	No	504	530.63	267439.50		

p>0.05; *Mann Whitney U

According to Table 3, it was observed there was no statistically significant difference in the mean scores of the need for relatedness subscale between the university students who exercised and those who did not exercise. However, it was revealed that there were statistically significant differences in mean scores for the level of meeting autonomy and competence needs (p<0.05). This difference is in favor of university students who exercised. In other words, the university students who exercised satisfied their autonomy and competence needs at higher levels.

Table 4. Results of the Analysis According to the Variable of Family Attitude

	Family Attitude	N	Mean	x^2	SD	p	Group Difference
Need for Autonomy	Democratic[1]	368	544.52	7.687	3	0.053	
	Authoritarian [2]	195	512.66				
	Protective[3]	496	582.66				
	Indifferent[4]	55	576.35				
Need for Competence	Democratic[1]	368	529.87	14.884	3	0.002*	1,2<3
	Authoritarian [2]	195	509.00				
	Protective[3]	496	597.27				
	Indifferent[4]	55	555.69				
Need for Relatedness	Democratic[1]	368	561.55	3.913	3	0.271	
	Authoritarian [2]	195	517.39				
	Protective[3]	496	567.61				
	Indifferent[4]	55	581.48				

p<0.05; *Kruskal Wallis

According to Table 4, it was determined that there was no statistically significant difference in the comparison of meeting autonomy and relatedness needs according to the variable of democratic, authoritarian, protective, and indifferent family attitudes of the students. However, there was a statistically significant difference in family attitude in terms of meeting the students' need for competence ($p<0.05$). This difference was in favor of protective families. In other words, individuals in families that exhibit protective attitudes satisfied the need for competence at higher levels compared to democratic and authoritarian families.

Table 4. Results of the Analysis According to the Variable of the Place of Residence

	Place of Residence	N	Mean	x^2	SD	p	Group Difference
Need for Autonomy	City Center[1]	702	568.84	3.980	2	0.137	
	County Center[2]	283	524.72				
	Village-Town[3]	129	567.71				
Need for Competence	City Center[1]	702	573.01	6.643	2	0.036*	2<1
	County Center[2]	283	515.34				
	Village-Town[3]	129	565.55				
Need for Relatedness	City Center[1]	702	566.06	4.692	2	0.096	
	County Center[2]	283	523.44				
	Village-Town[3]	129	585.66				

$p<0.05$; *Kruskal Wallis

According to Table 5, it was determined that there was no statistically significant difference in the levels of satisfying autonomy and relatedness needs of the students in terms of their places of residence, city centers, county centers, and villages-towns. However, the students' places of residence constituted a significant difference in terms of satisfying their needs for competence ($p<0.05$). This difference was in favor of individuals who resided in city centers. In other words, the competence needs of individuals who resided in city centers were satisfied at higher levels.

DISCUSSION

In this section, the results related to gender, place of residence, family attitude, the status of exercising and department variables, which were believed to influence the satisfaction levels of basic psychological needs of students of physical education and sports and coaching education departments, were compared with other results of the students and evaluations were presented.

In terms of satisfying the needs for autonomy, relatedness, and competence in university students, it was observed that the variable of gender did not constitute a significant difference. According to this result, within the scope of satisfying the need for autonomy, gender did not have a significant effect on students in the processes of regulating and managing their behaviors and making decisions on their own. In terms of meeting the need for relatedness, gender did not create a significant effect on the processes of connecting with people and feeling socially valuable. In satisfying the needs for competence, it can be stated that gender did not constitute a significant difference while individuals used the skills they possessed and developed these skills. In a study conducted with foreign and Turkish university students, Halmatov reported that gender did not have any effect on either increasing or decreasing the needs for autonomy, relatedness, and competence (Halmatov, 2007). Sarı et al. reported that they did not observe any significant difference between males and females in terms of basic psychological needs (Sarı et al., 2011). Another study reported that the basic psychological needs of the students in the faculty of education did not differ

according to gender (Gündoğdu and Yavuzer, 2012). However, Waters et al. observed that the satisfaction levels of males in terms of basic psychological needs were higher compared to females (Waters et al., 1990). Çankaya reported that gender did not create any significant differences in terms of meeting needs for autonomy and competence while emphasizing that the need for relatedness constituted a significant difference in favor of females (Çankaya, 2005). In a study conducted by Çelikkaleli and Gündoğdu, it was stated that the needs for autonomy and relatedness created a significant difference in favor of females (Çelikkaleli and Gündoğdu, 2005). Kashdan et al. reported that the needs for autonomy and relatedness in females were higher compared to males (Kashdan et al., 2009). In a study conducted with 587 university students, Gezer reported that there were significant differences between the levels of satisfying the needs for autonomy, relatedness, and competence of males and females while this difference was in favor of female university students (Gezer, 2018). Finally, several studies reported that there was no significant difference in the levels of satisfying basic psychological needs in terms of gender while other studies stated that females had higher levels of satisfying needs for autonomy and relatedness. According to these results, the conditions that determine the level of satisfying the needs of autonomy, competence, and relatedness in males and females can be related to the environment where individuals live. This is because it is an indisputable fact that people, social beings, depend on the society where they live in terms of mental satisfaction. It can also be stated that this dependence provides positive satisfaction in meeting needs while they can create a negative mental satisfaction process.

In the evaluation of the students of physical education and sports teaching and coaching education departments, it was determined that there were statistically significant differences in the levels of satisfying the needs for autonomy, relatedness, and competence in terms of the variable of the department. In this difference, it was observed that the students in the coaching education department had higher levels of satisfying their needs for autonomy, relatedness, and competence. In other words, the higher levels of satisfying needs for autonomy in university students of the department of coaching education have a significant effect on their processes of regulating and managing their behaviors and making decisions on their own. In terms of meeting their needs for relatedness, it was determined that the university students in the department of coaching education had higher levels of satisfaction in their processes of connecting with people and feeling socially valuable. In terms of meeting needs for competence, it was observed that the students in the coaching education department had higher levels of positive motivation in the process of using the skills they possessed and developing these skills. It is believed that the difference between these two different departments was related to the students' admission criteria to sports sciences. This is because one of the preconditions for the students in the department of coaching education covers criteria such as being a licensed athlete, having an athlete's CV, etc. It is believed that exercising has a significant effect on meeting basic psychological needs in individuals. This belief was based on the fact that the university students who answered "yes" to the question of "do you exercise" had higher levels of satisfying the needs for autonomy and competence compared to those who did not exercise.

In the evaluation of university students who exercised and who did not exercise, significant differences were determined in the levels of satisfying the needs for autonomy and competence. This difference indicated that the university students who exercised had higher levels of satisfying their needs for competence and autonomy. In the levels of meeting the needs for relatedness, no significant difference was observed. According to these results,

it was observed that the university students who exercised could take more responsibility in regulating and managing their behaviors and taking decisions on their own depending on the level of satisfying their needs for autonomy. In terms of meeting needs for competence, it was observed that the university students who exercised had higher levels of internal stimulus during the process of using their skills and developing them. Nevertheless, in the study, it is possible to state that exercising or not exercising was not a significant factor in the process of connecting with people and feeling socially valuable in terms of meeting the need for relatedness. Mehdi conducted a study on psychological attitudes of looking for help, their psychological needs and psychological adaptation of athletes by statistically comparisons according to sports branches and reported that the levels of satisfying needs for autonomy and competence in students who practiced team sports and combat sports were higher compared to athletes who practiced team sports only. In terms of meeting the need for establishing relationships, it was reported that practicing team or combat sports were not important (Mehdi, 2014). In a study conducted with university students who practiced team and individual sports, Gezer reported that there were significant differences in the levels of meeting the needs for autonomy, competence, and relatedness, stating that this difference occurred at higher levels in individuals who practiced team sports (Gezer, 2018). Finally, it was found out that exercising was a significant tool in individuals' process of satisfaction of their needs.

In the study, it was observed that the attitudes of the university students' families played significant roles in terms of meeting their needs for competence. This state was observed at higher levels in terms of meeting the needs for competence in university students whose family had protective attitudes and it was determined that the individuals in these families were more motivated in terms of using their needs and developing them. In families with authoritarian and democratic attitudes, it was observed that the individuals had lower levels of satisfying their needs for competence while the individuals in these families were observed to be weak in terms of using their skills and developing them. In the evaluation of the levels of satisfying the needs for autonomy and relatedness in university students, it was determined that the attitudes of families did not have notable effects.

In terms of the place of residence, it was determined that there were significant differences in levels of meeting the need for competence while it was also observed that the place of residence was not important in terms of meeting the autonomy and relatedness needs of the students. According to these results, it can be stated that the university students who resided in city centers were more motivated in terms of using their skills and developing them compared to those who resided in county centers.

SUGGESTIONS

Opportunities to participate in sports activities should be created to support individuals in satisfying their needs for autonomy and competence. In terms of meeting the needs of individuals, especially needs for competence, the ministry of family and social policies and local governments responsible for families should provide educational support to emphasize the importance of protective attitudes of families and the higher levels of satisfying the need for the competence of individuals in these families. Additionally, in terms of meeting the need for competence, opportunities for individuals to explore their abilities, to use them, and to develop them should be provided for individuals residing in county centers and village-towns.

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ORIGINAL RESEARCH

Determining the Sportsmanship Levels of Table Tennis Athletes

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Abstract

The aim of this research is to determine the sportsmanship levels of individuals who do table tennis in the youth category in Kyrgyzstan in 2019. Screening method was used in this study. This study has a descriptive and inferential quality. The working group of this research consists of 278 participants, 93 women and 185 men, who are engaged in table tennis in the youth category in Kyrgyzstan in 2019.The study was shaped on the basis of voluntary participation criteria. In this study, the personal information form prepared by the researcher and the Sportsmanship Scale were used to collect data. Personal information form; It consists of questions of gender, sports age, education level, and place of residence. In addition, in order to determine the sportsmanship levels of the participants; a Versatile sportsmanship scale used. The sportsmanship scale is a scale consisting of 20 questions created by Sezen Balçıkanlı (2010) in order to measure the levels of sportsmanship. When the scale was examined, the factor of "Compliance with Social Norms" was grouped as "Respect for Rules and Management" factor, "Commitment to Responsibilities in Sports" and "Respect for the opponent" factor. It is a Likert-type scale in which the respondent ticked one of the five boxes suitable for him/her. It was concluded that the table tennis athletes participating in the study showed a significant difference in demographic variables such as gender, sports age, educational status and place of residence. In shaping the sportsmanship levels of table tennis athletes, it was concluded that gender is in favour of males, in favour of those who are 10 years and above in terms of sports age, in favour of secondary school graduates in terms of education, and in favour of those living in the village in the variable of the place of residence.

Keyword: table tennis, sport, sportsmanship.

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INTRODUCTION

The idea of educating the human body for some purposes, that is, the union of intellectual and spiritual elements, is as old as humanity's existence on earth (Alpman, 1972).

Sports is a biological, pedagogical and social phenomenon that improves a person's physical and mental health, compiles social behaviours and raises mental and motor skills to a certain level. In other words, sport is a factor that provides the mental, physical and spiritual development of the person and socialization and coordination between these elements (Yetim, 2011).

The need to establish relationships with other people around him/her is one of the basic needs of human beings due to his social existence. Relationships with other people, the nature and quality of these relationships, and the feedback that the person receives for himself in this interaction constitute a framework and reference for the person's perceptions about himself (Kaya and Siyez, 2010).

It is known that the term Fair play, which is in English and is frequently used around the world, means "gentlemanly". Gentlemanliness in sports is mostly used as the concept of sportsmanship in our country (Pehlivan, 2004).

Sportsmanship includes sincerity, courage, patience, self-control, self-confidence, not despising others, respecting different ideas and truths, being kind, being good, noble and honourable, partnership and generosity (Keating, 2007). According to the common understanding, sportsmanship is mostly related to normative standards regarding the socio-ethical relationship existing in sport. Sportsmanship includes virtuous behaviour orientations that claim how to act in accordance with the spirit of sports (Stornes and Bru, 2002). Sportsmanship is a form of behaviour that is consistent with social and moral values among sports activities, within the framework of broad and normative principles. In addition, movements made within the framework of sportsmanship are effective in reducing the wrong movements in the competitive sports environment (Gencheva at al., 2017).

Sportsmanship is part of sports tradition. Although it is a concept that is frequently referred to in sports, short explanations are given about its content rather than a definition. Although it is widely assumed that sportsmanship and sportsmanship are related to sport and morality, it is not preferred to define it because of its complex structure (Arnold, 1998). Different definitions with different perspectives have been made for the term sportsmanship, which is used to express moral purposes in the sports environment. Shields and Bredemeier define sportsmanship as the virtue of regulating the drive for competitive play in light of moral goals (Shields and Bredemeier, 1995).

Even though sportsmanship is seen as a concept related to sports, it is a concept related to the order and level in which all areas in social life are connected (Yıldıran, 2011). It is also a term that defines the social, cultural and moral rules of the concept of sports (Yıldıran, 1992). Sportsmanship is the moral dimension of the concept of sports. The aim of the person doing sports is to take the role of sportive struggle in a good fight area, without harming the players of the opponent team and who come to watch. In summary, honesty is being successful. It is a perception that not every method used to avoid losing is correct, it is preferred to be determined instead of ambitious, and good intentions are more prominent (Erdemli, 1996).

When a person is confronted with a person who is in a dangerous or distressing situation, he experiences a conflict between his/her desire to help the person he/she meets and his/her desire to continue his/her goal at the moment, the moral aspects of the individual manifest themselves (Kavussanu at al., 2009). In sports, situations involving moral dilemmas are frequently encountered. Unfortunately, in such dilemma events encountered in sports fields, athletes mostly prefer to do unsportsmanlike actions.Unsportsmanlike movements are experienced especially in professional-level sports and close contact team sports (Bredemeier, 1994; Kavussanu at al., 2009).

The aim of this study is to determine how the sportsmanship levels of table tennis players are shaped.

METHOD

Research Pattern

The research has a descriptive nature and the sportsmanship levels of individuals who do table tennis sport have been examined.

In this study, the research model was created by considering the "scanning model". Screening models are research models that aim to define a past or present situation as it is. The event, person or object, which is the subject of the research, is tried to be conveyed in its own conditions and as it is. It is not intended to change or affect these conditions in any way (Karasar, 2009).

Working Group

The working group of this research consists of 278 participants who play table tennis in the youth category in Kyrgyzstan in 2019.

Data Collection Tool

The "Personal Information Form" developed by the researcher was used to determine the demographic characteristics of the individuals participating in the study. This form; It consists of questions of gender, age, how many years you have been doing sports, your educational status, where you live.

In order to determine the sportsmanship levels of the participants; The versatile sportsmanship scale is a scale consisting of 20 questions created by Sezen Balçıkanlı (2010) to measure the levels of sportsmanship. When the scale was examined, the factor of "Compliance with Social Norms" was grouped as "Respect for Rules and Management" factor, "Commitment to Responsibilities in Sports" and "Respect for opponents" factor. It is a Likert-type scale in which the respondent ticked one of the five boxes suitable for him/her. The score that can be obtained from the scale is minimum 20 and maximum 100.The higher the score, the higher the level of sportsmanship. While all items in the scale were scored positively, no reversal was applied in the scoring of any item. A Likert scale with 5 options was used to measure the sportsmanship levels of athletes. The scale consists of 20 items.

Analysis of Data

The data of the study, which was conducted to provide descriptive information about the individuals participating in the study, were evaluated in the SPSS 21 program. In order to determine the analysis type suitable for the analysis of the data, the normality test (Kolmogorov-Smirnov test) was performed first and it was determined whether they were homogeneous or not. Since the data of the study did not show normal distribution enough to

apply parametric test, Kruskal-Wallis H analysis was used for paired comparisons and Mann-Whitney U analysis for multiple comparisons. In statistical analysis, the level of significance was chosen as p <0.05.

FINDINGS

Table 1. Analysis Results of the Multidimensional Sportsmanship Orientation Scale According to the Gender Variable of the Research Group

Gender		n	Rank average	Rank total	Z	p
Compliance with Social Norms	Woman	93	100.03	9303.00	-5.984	0.000*
	Man	185	159.34	29478.00		
Respect for Rules and Management	Woman	93	121.32	11282.50	-2.744	0.006*
	Man	185	148.64	27498.50		
Commitment to Responsibilities in Sports	Woman	93	93.30	8676.50	-7.021	0.000*
	Man	185	162.73	30104.50		
Respect for the Opponent	Woman	93	110.02	10231.50	-4.393	0.000*
	Man	185	154.32	28549.50		

*p<0.05

According to Table 1, a statistically significant difference was observed in the multidimensional sportsmanship orientation scale of the research group according to the gender variable. Compliance with Social Norms (Z: -5.984, p <0.05), Respect for Rules and Management (Z: -2.744, p <0.05), Commitment to Responsibilities in Sports (Z: -7.021, p <0). 05) and Respect for the Competitor (Z: -4.393, p <0.05), looking at the mean rank, it was determined that it was in favour of the individuals who were men.

Table 2. Analysis results of the Multidimensional Sportsmanship Orientation Scale According to the Sports Age Variable of the Research Group

Sport Age		n	Rank average	Df.	X^2	p	Difference U
Compliance with Social Norms	a)1-2 years	82	94.11	3	86.612	0.000	(b>a), (c>a), (d>a), (d>b), (d>c)
	b)3-6 years	53	122.51				
	c)7-10 years	66	132.15				
	d)Over 10 years	77	205.83				
Respect for Rules and Management	a)1-2 years	82	107.26	3	23.706	0.000*	(b>a), (c>a), (d>a), (d>b),
	b)3-6 years	53	140.97				
	c)7-10 years	66	146.73				
	d)Over 10 years	77	166.62				
Commitment to Responsibilities in Sports	a)1-2 years	82	90.04	3	86.797	0.000*	(b>a), (c>a), (d>a), (d>b), (d>c)
	b)3-6 years	53	126.50				
	c)7-10 years	66	136.73				
	d)Over 10 years	77	203.49				
Respect for the Opponent	a)1-2 years	82	105.34	3	57.094	0.000*	(c>a), (d>a), (d>b), (d>c)
	b)3-6 years	53	117.53				
	c)7-10 years	66	134.90				
	d)Over 10 years	77	194.94				

*p<0.05

According to Table 2, a statistically significant difference was observed in the multidimensional sportsmanship orientation scale of the research group according to the sports age variable. This difference is among the sub-dimensions of the scale: Compliance with Social Norms (X^2:86.612, p<0.05), Respect for Rules and Management (X^2:23.706, p<0.05), Commitment to Responsibilities in Sports (X^2:86.797, p<0.05) and Respect for the Competitor (X^2:57.094, p<0.05). In Tamhane's T2 test, which was conducted to determine the source of the differences, it was observed that the difference was caused by those who had a sports license for 10 years or more, and the average rank of these individuals was higher.

Table 3. Analysis results of the Multidimensional Sportsmanship Orientation Scale According to the Education Level Variable of the Research Group

Education Status		n	Rank Average	Df.	X^2	p	Difference U
Compliance with Social Norms	a)Secondary School	149	174,96	2	67,116	0,000*	a>b a>c
	b)High School	11	79,45				
	c)University	118	100,33				
Respect for Rules and Management	a)Secondary School	149	159,51	2	22,126	0,000*	a>b a>c
	b)High School	11	91,91				
	c)University	118	118,67				
Commitment to Responsibilities in Sports	a)Secondary School	149	176,53	2	73,617	0,000*	a>b a>c
	b)High School	11	75,73				
	c)University	118	98,69				
Respect for the Opponent	a)Secondary School	149	170,89	2	50,262	0,000*	a>b a>c
	b)High School	11	104,91				
	c)University	118	103,09				

*p<0.05

According to Table 3, a statistically significant difference was observed in the Multidimensional sportsmanship orientation scale of the research group according to the Educational Status variable. Compliance with Social Norms (X^2:67,116 p<0,05), Respect for Rules and Management (X^2:22,126, p<0,05), Commitment to Responsibilities in Sports (X^2:73,617, p<0,05), and Respect for the Opponent (X^2:50,262, p<0,05) were found in the sub-dimensions of this difference. In Tamhane's T2 test, which was conducted to determine the source of the differences, it was observed that the difference was caused by individuals who graduated from secondary school and that the mean rank of these individuals was higher.

Table 4. Analysis Results of the Multidimensional Sportsmanship Orientation Scale by the Research Group According to the Living Place

Living Place		n	Rank Average	Df.	X^2	p	Difference U
Compliance with Social Norms	a)City center	87	109,24	2	36,987	0,000*	c>a c>b
	b)District center	28	95,66				
	c)Village	163	163,18				
Respect for Rules and Management	a)City center	87	112,75	2	33,084	0,000*	c>a c>b
	b)District center	28	93,16				
	c)Village	163	161,74				
Commitment to Responsibilities in Sports	a)City center	87	104,45	2	55,672	0,000*	c>a c>b
	b)District center	28	81,11				
	c)Village	163	168,24				
Respect for the Opponent	a)City center	87	106,68	2	38,913	0,000*	c>a c>b
	b)District center	28	96,93				
	c)Village	163	164,33				

*p<0.05

According to Table 4, a statistically significant difference was observed in the multidimensional sportsmanship orientation scale of the research group according to the place of residence variable. Compliance with Social Norms (X^2:36,987 p<0,05), Respect for Rules and Management (X^2:33,084, p<0,05), Commitment to Responsibilities in Sports ((X^2:55,672, p<0,05), and Respect for the Opponent (X^2:38,913, p<0,05) were found in the sub-dimensions of this difference. In Tamhane's T2 test conducted to determine the source of the differences, it was seen that the difference was caused by the individuals living in the village and the mean rank of these individuals was higher.

DISCUSSION AND CONCLUSION

The research has been tried to be evaluated in light of the literature information according to the variables that have been evaluated.

In the multidimensional sportsmanship orientation scale of the study group, a statistically significant difference was observed according to the gender variable. It is concluded that this difference is in favour of male participants. Duda et al. (1991) revealed that sportsmanship scores differ according to gender. Tsai and Fung (2005) also revealed that women care more about sportsmanship than men. Again, Akandere et al. (2009) stated that the moral judgment levels of women who do sports are higher than men who do sports. In another study, it is revealed that there is an important relationship between the gender of the research group and their moral judgments (Kaya, 2011). Koç and Güllü (2017) also concluded in their study that women are more sportive than men. While the level of avoiding negative sportsmanship behaviours was better in female students compared to males, very close values were obtained in showing positive behaviours in females and males. Şenel and Yıldız (2016) stated that, as a result of their research, female students studying at physical education and sports college have more sportsmanship tendencies than males and physical education and sports college students who have a high level of physical / kinesthetic intelligence are more prone to sportsmanship behaviours. Yılmaz et al. (2017), in their study examining the sportsmanship orientations of middle school students in terms of their moral development, found that the sportsmanship tendency of female students in physical education and sports lessons was higher than that of male students. These results are not in line with the research findings. A statistically significant difference was observed in the multidimensional sportsmanship orientation scale of the research group according to the sports age variable. It is concluded that this difference is in favour of those who have a sports license for 10 years or more. In the study conducted by Tekeli (2017) on secondary school students, a significant difference was found according to the playing year variable. Again, partially parallel to our research results and in the study conducted by Elik (2017) on footballers, it was determined that the sub-dimension of the multidimensional sportsmanship orientation scale significantly differentiated according to the sports age variable and this differentiation was in favour of amateur football players in the 1-5 year category.

In the multidimensional sportsmanship orientation scale of the study group, a statistically significant difference was observed according to the Educational Status variable. It has been concluded that this difference is in favour of individuals who are secondary school graduates. In their studies on national wrestlers, Güllü and Şahin (2018) found that according to the education variable, associate and bachelor's degree participants expressed a higher level of opinion than high school graduates. Likewise, when Elik (2017) examined the sportsmanship levels and sub-dimensions of amateur football players participating in the study conducted for amateur football players according to the educational status variable, a significant difference was found between the groups in the sub-dimension of compliance with social norms.

A statistically significant difference was found in the multidimensional sportsmanship orientation scale of the research group according to the variable of the place of residence. It is concluded that this difference is in favour of the individuals living in the village. In the study conducted by Elik (2017), it was determined that the multidimensional sportsmanship orientation scale, sub-dimension and total scores of football players did not

differ significantly according to the variable of the place of residence. Çalayır et al. (2017) found that there is a significant difference between the provinces in which hockey sportsmen live and their sportsmanship levels.

As a result, according to the findings obtained as a result of the study, it was determined that the variables of sportsmanship level and gender education level, sports age and place of residence have a positive effect on the level of sportsmanship.

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