



An investigation of the sports participation motivation of students with orthopedic and hearing impairments

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ABSTRACT

The study aims to investigate the levels of intrinsic motivation, extrinsic motivation and amotivation of the student athletes with orthopedic and hearing impairments towards sports participation. In the study, survey method, a qualitative research design was used. The data were collected about the sports participation motivation among the athletes, and the relation between the orthopedically handicapped and hearing-impaired athletes were assessed in terms of their demographical characteristics (age, gender, type of impairment). The participants were composed of a total number of 100 athletes - orthopedically handicapped (70) and hearing-impaired (30) - registered in the Northern Cyprus Sports Federation for Persons with Disabilities. Pursuant to the results of orthopedically handicapped and hearing-impaired athletes, there is no significant difference based on the variables of gender and type of disability whereas there are significant differences per the age group variable.

Keywords: Orthopedically handicapped, hearing-Impaired, sports involvement, motivation

INTRODUCTION

Sports may be defined a whole range of activities with competition factor where mental, physical, psychological, and socio-cultural characteristics that embody human are required to be developed with the participation of person(s) as a result of physical activities. It is also an important part of the education and discipline. Sports, which has a major part in the discovery and improvement of own skills of individuals, may be defined as a socio-cultural tool that can be freely performed at any time with or without any means as a part of one group by adopting team spirit within the framework of sports unique rules making it a profession when appropriate and making one feel as a part of society (Sarıkol, 2021).

Disability may be defined as the status where one is restricted in performing the desired activities or not being able to perform at all because of deficiency or disability regardless of age, gender, social and cultural factors (Konar & Şanal, 2017).

It is difficult to believe that sports have only orthopedic contribution on the people with disabilities, yet it does have psychological and sociological benefits. Based on this perspective, sports have major impact on people with disabilities allowing them to go out, be recognized in the community, be a part of production and support their families. In developed countries, sports become a lifestyle where people place it in every aspect of their lives and many schools have well organized and planned sports participation programs for students with disabilities. It is also inevitable for rehabilitation and recreation for people with disabilities. Every need of these people is fulfilled with sports as an awareness tool (Mumcu, 2018). Besides, a positive correlation between academic achievement and participation to sports and physical activity has been reported (Alvarez-Bueno et al., 2017).

Orthopedic impairment means a different shape and anatomy of body than what should be due to a random reason; a status of incompetence and random irregularity in bodily activities or failure (Osmanağaoğlu, 2016).

Hearing impairment occurs when hearing sense does not completely develop during the development of individual, at the time of entering social life and particularly in verbal communication. In other words, the hearing loss may vary between very mild and very severe. This is a type of disability making communication and relationship with outside world difficult (Kaya, 2016).

The most important issue guiding the students with disabilities is the principle of health that would recover their functions that were lost. However, the principle of health does not fulfill all wishes of students with disabilities. Thus, the concepts of competition and organization, which are the inseparable features of sports and sports activity, have significant implications for students with disabilities. The mental, emotional and physical limitations that students with disabilities experience due to their disabilities, cause an introverted lifestyle with

increasing boundaries. However, sports are the tool to develop oneself as the biggest help in facilitating a social status. Additionally, sports allow people with disabilities to communicate with other individuals with disabilities and establish life-long social groups (McLoughlin et.al, 2017).

Despite well-known evidence of the positive benefits of sports and physical activity, it was reported that participation to school based sports and physical activity among students with disabilities is very low compared to their peers without disabilities (U.S. GAO, 2010; Jung, Leung, Schram, & Yun, 2018).

Establishing the policy is crucial for the students with disabilities to increase their participation in sports and physical activity. Public policies have demonstrated their efficiency to improve equal opportunities for students with disabilities. It is very important to determine the prevalence and the motivation of participation in sports and physical activity to establish further policies that might increase the participation and motivation of the students with disabilities (Moosong et al.,2022).

Therefore, based on the general objective of this study, the aim is to identify the sub-dimensions of intrinsic motivation, extrinsic motivation and amotivation in the sports participation motivation of orthopedically handicapped and hearing-impaired students participating sports. The study analyzed the relation between gender and age of students as part of demographical information and their orthopedic and hearing impairments.

METHOD

Study Model

Titled as ‘The Analysis of the Sports Participation Motivation of Individuals with Orthopedic and Hearing Impairment’, the research design is quantitative with the aim of identifying and analyzing the sports participation motivation of orthopedically handicapped and hearing-impaired licensed student athletes. Through using quantitative research methods, survey technique was applied to generate detailed and reliable data. In the quantitative dimension of study, survey technique was performed respectively. Survey model is a research method reflecting an existing situation as it is. The aim in survey model is not about changing or influencing the research topic. The situation to be identified is explicit, and the main aim is to demonstrate the real situation (Karasar, 2010).

The subject of quantitative research is quantifiable, verifiable or illusioned by quantitative research methods (Büyükoztürk, 2011). In this quantitative study, the sports participation of athletes and the identification of their intrinsic motivation, extrinsic motivation and amotivation levels are used as study data.

Population and Sample

The population and sample of this study, which was conducted to identify the sports participation motivation of orthopedically handicapped and hearing impaired graduate and post-graduate student athletes and the relation between the intrinsic motivation, extrinsic motivation and amotivation levels and the demographic characteristics of athletes (gender, age, type of disability), are the orthopedically handicapped and hearing-impaired athletes registered under Northern Cyprus Sports Federation for Persons with Disabilities in the Turkish Republic of Northern Cyprus. The study sample covers a total number of 100 student athletes with disabilities – orthopedically handicapped (70) and hearing-impaired (30). The sample method of study is the criterion sampling, one of the purposive sampling methods where the sample is comprised of persons, events, objects or situations with the characteristics determined about the problem (Baltacı, 2018).

Data Collection Tool

For this quantitative study, “MSSPPD – Motivation Scale for Sports Participation with Disabilities” was used as data collection tool in order to assess the sports participation motivation of orthopedically handicapped and hearing-impaired athletes. (Tekkurşun Demir et.al., 2018). MSSPPD has a total number of 22 items with 12 under “Intrinsic Motivation”, 5 under “Extrinsic Motivation” and 5 items under “Amotivation”. The amotivation factor is comprised of reverse-worded items. The possible scale scores are 12-60 for Intrinsic Motivation; 5-25 for Extrinsic Motivation; 5-25 for Amotivation and 22-110 for the whole scale. Higher scores indicate better sports participation motivation.

Intrinsic Motivation: Intrinsic Motivation represents motivation sources like peace, joy, pleasure, happiness in sports participation. It means feeling better emotionally when an individual participates sports. **Extrinsic Motivation:** It represents the impact of environmental factors on the people with disabilities regarding sports participation. Hence, one participates sports when they have the desire to be a model for other people with disabilities in their surroundings and appreciated as a result. The extrinsic motivation sources are the ambition of winning a prize, cup etc. **Amotivation:** It is the type of motivation that occurs when people with disability cannot correlate between the self-benefit as a result of sports participation and other results (Tekkurşun Demir et.al., 2018).

The study data were collected by the researcher through face-to-face interviews and quantitative research method.

Data Analysis

The data analysis was performed via SPSS 26.0 software.

Prior to the analysis, Cronbach Alpha test was conducted to identify the reliability of answers given by the participants to the Motivation Scale for Sports Participation of People with Disabilities where the alpha coefficient was found as 0.975.

A frequency analysis was performed regarding the socio-demographic characteristics of participants, and the descriptive statistics on the scores from the Motivation Scale for Sports Participation of People with Disabilities were provided accordingly.

Kolmogorov-Smirnov test and Shapiro-Wilk test were both applied to analyze whether the scores from the Motivation Scale for Sports Participation of People with Disabilities show normal distribution.

FINDINGS

The findings generated as a result of data analysis are given below.

Table 1 reflects the distribution of athletes, who participated to the study, by their socio-demographic characteristics.

Table 1: Normality test of participants on their scores from the Motivation Scale for Sports Participation of People with Disabilities

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Sta.	sd	p	Sta.	sd	p
Intrinsic Motivation	0.294	100	0.000*	0.555	100	0.000*
Extrinsic Motivation	0.188	100	0.000*	0.876	100	0.000*
Amotivation	0.286	100	0.000*	0.642	100	0.000*
Overall MSSPPD	0.261	100	0.000*	0.594	100	0.000*

*p<0,05

Considering the normality test results on the Motivation Scale for Sports Participation of People with Disabilities shown in Table 1, the scores obtained by the people with disabilities do not match with normal distribution ($p < 0.05$). Therefore, non-parametric hypothesis tests were conducted in the research comparisons where Mann-Whitney U test was used for the comparison of scores from the Motivation Scale for Sports Participation of People with Disabilities by their gender and type of disability and Kruskal-Wallis H test was applied to compare the scores from the Motivation Scale for Sports Participation of People with Disabilities by age group.

Table 2: Distribution of participants by their socio-demographic characteristics

	Number (n)	Percentage (%)
Gender		
Female	15	15.0
Male	85	85.0
Age group		
19-25	39	39.0
26-32	34	34.0
33 and above	27	27.0
Disability		
Orthopedically handicapped	70	70.0
Hearing-impaired	30	30.0
Total	100	100.0

Table 2 provides the distribution of participants by the socio-demographic characteristics of participants with disabilities.

Pursuant to Table 2, 15% of participants are female while 85% are male; 39% is between the ages of 19-25, 34% between 26-32 and 27% is 33 and above. 70% of participants are orthopedically handicapped whereas 30% are hearing-impaired individuals.

Table 3:Participants’ scores from the items in the Motivation Scale for Sports Participation of People with Disabilities

	\bar{x}	s
1. Sports minimize my deficiencies.	4.53	1.11
2.Sports makes me feel free.	4.48	1.11
3.Sports give the ability to fight with challenges.	4.47	1.00
4.Sports let me know my boundaries.	4.35	1.02
5.Sports make me handle my disability.	4.52	0.94
6. I feel pleasure when I win in sports.	4.50	1.08
7.I feel happy when I discover my skills.	4.49	1.05
8.Sports enhance my personal development.	4.43	1.06
9.I think that sports have positive effect on my physical development.	4.51	1.05
10.Sports improve my endurance.	4.45	1.10
11.Sports increase my muscle mass.	4.48	1.11
12.I feel good when I play sports.	4.43	1.09
13.I play sports so that I set an example for my friends with disabilities.	4.15	1.17
14.I believe that sports give me status.	4.04	1.13
15.I aspire to successful sports stories published in press.	3.72	1.12
16.Sports is a tool of social security for me.	3.55	1.27
17.I enjoy showing my abilities to others.	3.20	1.33
18.I spend time and effort to sports but I don’t know whether it is worth it.*	4.00	1.41
19.I am not sure what sports give me. *	4.48	1.05
20.I am an athlete but playing sports is not something for me. *	4.53	1.04
21.I am an athlete, yet I would not play sports if I could choose. *	4.61	0.99
22.I don’t know how much I can go further in my branch.*	4.52	1.05

*Reverse-scored items

Table 3 shows the scores that the participants obtained from the Motivation Scale for Sports Participation of People with Disabilities.

In consideration with Table 3, the participants got an average of 4.53 ± 1.11 points from “Sports minimize my deficiencies”, an average of 4.48 ± 1.11 points from “Sports makes me feel free”, 4.47 ± 1.11 from “Sports give the ability to fight with challenges”, 4.35 ± 1.02 from “Sports let me know my boundaries”, 4.52 ± 0.94 from “Sports make me handle my disability”, 4.50 ± 1.08 from “I feel pleasure when I win in sports”, 4.49 ± 1.05 from “I feel happy when I discover my skills”, 4.43 ± 1.06 from “Sports enhance my personal development”, 4.51 ± 1.05 from “I think that sports have positive effect on my physical development”, 4.45 ± 1.10 from “Sports improve my endurance”, 4.48 ± 1.11 from “Sports increase my muscle mass”, 4.43 ± 1.09 from “I feel good when I play sports”, 4.15 ± 1.17 from “I play sports so that I set an example for my friends with disabilities”, 4.04 ± 1.13 from “I believe that sports give me status”, 3.72 ± 1.12 from “I aspire to successful sports stories published in press”, 3.55 ± 1.27 from “Sports is a tool of social security for me”, 3.20 ± 1.33 from “I enjoy showing my abilities to others”, 4 ± 1.41 from “I spend time and effort to sports but I don’t know whether it is worth it”, 4.48 ± 1.05 from “I am not sure what sports give me”, 4.53 ± 1.04 from “I am an athlete but playing sports is not something for me”, 4.61 ± 0.99 from “I am an athlete, yet I would not play sports if I could choose” and 4.52 ± 1.05 from “I don’t know how much I can go further in my branch”.

In general, the participants answered the positive items under the Motivation Scale for Sports Participation of People with Disabilities with “strongly agree” and “strongly disagree” for negative items.

Table 4: Participants' scores from the items in the Motivation Scale for Sports Participation of People with Disabilities

	n	\bar{x}	s	Min	Max
Intrinsic Motivation	100	53.64	11.75	15	60
Extrinsic Motivation	100	18.66	4.90	6	25
Amotivation	100	22.14	4.96	5	25
Overall MSSPPD	100	94.44	19.72	28	109

Table 4 presents the scores of participants from the Motivation Scale for Sports Participation of People with Disabilities.

Considering Table 4, the participants obtained an average of 53.64 ± 11.75 from the sub-dimension of intrinsic motivation under the Motivation Scale for Sports Participation of People with Disabilities with minimum 15 and maximum 60; an average of 18.66 ± 4.90 from the sub-dimension of extrinsic motivation with minimum 6 and maximum 25, and an average of 22.14 ± 4.96 from the sub-dimension of amotivation with minimum 5 and maximum 25. From the overall scale, the participants obtained an average of 94.44 ± 19.72 with minimum 28 and maximum 109.

Table 5: Comparison of participants' scores from the Motivation Scale for Sports Participation of People with Disabilities by their gender

	Gender	n	\bar{x}	s	M	SO	Z	p
Intrinsic Motivation	Female	15	55.13	11.20	60.00	58.77	-1.245	0.213
	Male	85	53.38	11.88	58.00	49.04		
Extrinsic Motivation	Female	15	19.00	4.04	19.00	49.90	-0.088	0.930
	Male	85	18.60	5.05	19.00	50.61		
Amotivation	Female	15	22.47	5.64	25.00	56.33	-0.921	0.357
	Male	85	22.08	4.86	25.00	49.47		
Overall MSSPPD	Female	15	96.60	18.94	103.00	57.10	-0.958	0.338
	Male	85	94.06	19.94	102.00	49.34		

Table 5 provides the comparison of participant scores from the Motivation Scale for Sports Participation of People with Disabilities by their gender through Mann Whitney U test.

In consideration with Table 5, there is not any statistically significant difference between the general scores obtained from the Motivation Scale for Sports Participation of People with Disabilities by gender, and the scores from Intrinsic Motivation, Extrinsic Motivation and Amotivation ($p > 0,05$). The Intrinsic Motivation, Extrinsic Motivation and Amotivation scores of female and male participants and their overall scores were concluded similarly.

Table 6: Comparison of participants' scores from the Motivation Scale for Sports Participation of People with Disabilities by their age group

	Age group	n	\bar{x}	s	M	SO	X^2	p	Difference
Intrinsic Motivation	19-25	39	56.54	7.90	60.00	59.72	13.755	0.001*	1-3
	26-32	34	55.94	7.65	59.00	52.88			2-3
	33 and above	27	46.56	16.98	53.00	34.19			
Extrinsic Motivation	19-25	39	19.82	4.10	21.00	56.64	8.501	0.014*	1-3
	26-32	34	19.56	3.81	19.50	54.34			2-3
	33 and above	27	15.85	6.09	19.00	36.80			
Amotivation	19-25	39	23.69	2.94	25.00	59.41	8.763	0.013*	1-3
	26-32	34	22.09	4.63	24.50	48.63			2-3
	33 and above	27	19.96	6.72	23.00	39.98			
Overall MSSPPD	19-25	39	100.05	12.71	104.00	61.73	15.017	0.001*	1-3
	26-32	34	97.59	13.22	101.50	50.99			2-3

	33 and above	27	82.37	28.48	95.00	33.67			
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Table 6 reflects the comparison of participant scores from the Motivation Scale for Sports Participation of People with Disabilities by their age group through Kruskal Wallis test.

Pursuant to Table 6, the difference between the general scores obtained from the Motivation Scale for Sports Participation of People with Disabilities by age group, and the scores from the sub-dimensions of Intrinsic Motivation, Extrinsic Motivation and Amotivation is statistically significant ($p < 0.05$). The scores of individuals with disability, who are between the ages of 19-25, from Intrinsic Motivation, Extrinsic Motivation and Amotivation and their overall scale score are higher with statistical significance than the scores of participants, who are 33 and above so does the scores of individuals with disability, who are between the ages of 26-32, from Intrinsic Motivation, Extrinsic Motivation and Amotivation and their overall scale score. The differences in scores calculated due to age group are statistically significant.

Table 7: Comparison of participants' scores from the Motivation Scale for Sports Participation of People with Disabilities by their type of disability

	Type of disability	n	\bar{x}	s	M	SO	Z	p
Intrinsic Motivation	Orthopedically Hand.	70	54.26	11.17	59.00	52.21	-0.935	0.350
	Hearing Impaired	30	52.20	13.08	55.50	46.52		
Extrinsic Motivation	Orthopedically Hand.	70	18.94	4.75	20.00	52.01	-0.800	0.424
	Hearing Impaired	30	18.00	5.26	19.00	46.98		
Amotivation	Orthopedically Hand.	70	22.11	4.92	25.00	50.01	-0.279	0.780
	Hearing Impaired	30	22.20	5.12	25.00	51.63		
Overall MSSPPD	Orthopedically Hand.	70	95.31	18.96	102.50	53.19	-1.421	0.155
	Hearing Impaired	30	92.40	21.59	98.50	44.22		

Table 7 shows the comparison of participant scores from the Motivation Scale for Sports Participation of People with Disabilities by their type of disability through Mann Whitney U test. From what demonstrated under Table 7, there is not any statistically significant difference between the general scores obtained from the Motivation Scale for Sports Participation of People with Disabilities by their type of disability, and the scores from Intrinsic Motivation, Extrinsic Motivation and Amotivation ($p > 0.05$). The scores of orthopedically handicapped participants obtained from the Intrinsic Motivation, Extrinsic Motivation and their overall scores from the Motivation Scale for Sports Participation of People with Disabilities are higher than the Intrinsic Motivation, Extrinsic Motivation scores and overall scale scores of hearing-impaired. On the other hand, the amotivation scores of hearing-impaired participants are higher than the amotivation scores of orthopedically handicapped participants. Such difference in scores due to their type of disability is not statistically significant.

CONCLUSION AND DISCUSSION

Based on the results of orthopedically handicapped and hearing-impaired student athletes that they scored from the Motivation Scale for Sports Participation of People with Disabilities, there is not any significant difference by gender and type of disability variables, yet significant by the age group. The overall score of athletes from MSSPPD is 94.44, which indicates high sports participation motivation. Such high score is considered to be due to the fact that all participants are registered athletes who are also graduate or post-graduate students.

The scores from the intrinsic motivation, extrinsic motivation and amotivation sub-dimensions are found high, which again caused by the participation of registered athletes. The study by Mutlu Bozkurt, Tekkurşun Demir and Dursun (2019) indicated that the intrinsic motivation of hearing-impaired athletes is high, which supports the outcome of our study.

Individuals live with their physical, social, mental and spiritual differences as members of social life. One may be different than the other members of society when affected by any deficiency or based on the level of such deficiency, physical restraint or absence caused by sensory losses. Within the society, the perception towards differences, opportunities, educational and social policies are crucial in the improvement of individual potentials (Tekkurşun et.al, 2018).

When the scores obtained from MSSPPD are compared by gender variable, no significant difference has observed accordingly. Similarly, the study by Mutlu Bozkurt et.al (2019) also did not find any significant difference by gender variable supporting our outcome. However, Altun (2010) argued in his study on physically handicapped students that male participants have higher sports motivation. In a study by Tekkurşun Demir and İlhan (2020) on the athletes with disabilities, the intrinsic motivation levels of female athletes with hearing impairment are significantly different than male athletes, which is the opposite of our study conclusion.

This study reflected that the MSSPPD scores of athletes are significantly different by age group variable. Hence, the intrinsic motivation, extrinsic motivation, amotivation and overall scale scores of athletes between the ages of 19-25 and 26-32 are significantly higher than the age group of 33 and above. The studies by Tekkurşun Demir and İlhan, (2020), Mutlu Bozkurt et.al. (2019) and Altun (2010) identified that younger age groups have higher sports motivation as suggested in our study as well.

Where the MSSPPD scores of athletes were compared by the type of disability, there is not any significant difference by the relevant variable. While Mutlu Bozkurt et.al. (2019) did not find any significant difference in their study like we did, yet they noted that the scores of athletes with physical disabilities from the sub-dimension of amotivation is high constituting significant difference. The study by Tekkurşun Demir and İlhan (2020) regarding the athletes with physical disability, visual and hearing impairment indicated that athletes with physical disabilities that are in individual sports have higher scores from the intrinsic motivation sub-dimension while visual impaired athletes in individual sports have higher scores from the extrinsic motivation sub-dimension. Similarly, Tekkurşun Demir and İlhan (2020) reflected that athletes with physical disabilities that compete in team sports have higher scores from the intrinsic motivation and amotivation sub-dimension, which indicates significant difference. Disability is a disadvantage that negatively affects the compatibility to everyday life. Compatibility is related with the level of performance in social roles. Sports is one of the mechanisms helping the realization of social roles (Tekkurşun et.al, 2018).

It is possible to observe the complete positive influence of sports and even more on people with disabilities, which it already has on individuals with normal development. Each sports activity is primarily a social experience. Additionally, sports affect all individuals within its natural environment and support all development dimensions (Tekkurşun et.al, 2018).

The importance of the effective and feasible policies to increase the participation of students with disabilities to sports and physical activity well known and public policies have demonstrated their efficiency to improve equal opportunities for students with disabilities. Teachers, educators and trainers have great importance in establishing these policies. Increasing the awareness and knowledge of teachers and trainers about the benefits and importance of the sports participation among the students with disabilities might be a great step to reach the purpose. Therefore, further studies should be adressed to improve this awareness and knowledge.

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