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Life Quality of Elite Deaf Sportsman

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Abstract

This research is planned to evaluate life quality of elite deaf sportsmen. Population of this study is elite sportsmen within the body of Turkey Deaf Sportsmen Federation, the sampling consists of 62 sportsmen; 31 woman and 31 men; who are called to 23rd Deaflympics preparation camp by the Federation. SF-36 life quality scale was adopted to determine life quality of the sportsmen in the study. In the analysis of the data, Shapirowilk normality test was applied to the groups, Mann Whitney-U was used in non-parametric paired comparison since it was not normally distributed. $p<0.05$ was accepted as statistical significance level. As a result of analysis; there is no statistically significant difference in life quality with respect to gender and age. Statistically significance was observed in "Physical Function (PF)", "Mental Role (MR)" and "Physical Fitness Score Summary (PFSS)" according to body mass index ($p<0.05$). Consequently; it is thought that as the most important tool of social life, sports with early beginning physical activity are important factors to improve life quality of these individuals.

Keywords: life quality; deaf and dumb; deaf sportsmen

İşitme Engelli Elit Sporcularda Yaşam Kalitesi

Öz

Bu araştırma işitme engelli elit sporcuların yaşam kalitelerinin değerlendirilmesi amacıyla planlanmıştır. Araştırmanın evrenini Türkiye İşitme Engelliler Federasyonu bünyesinde bulunan elit sporcular, örneklemini ise Federasyon tarafından 23. İşitme Engelliler Olimpiyat Oyunları hazırlık kampına çağırılan 31 kadın ve 31 erkek olmak üzere toplam 62 sporcu oluşturmuştur. Çalışmada sporcuların yaşam kalitelerinin değerlendirilmesi amacıyla SF–36 yaşam kalitesi ölçeği kullanılmıştır. Verilerin analizinde, gruplara Shapirowilk normallik testi yapılmış, normal dağılmadıklarından dolayı, non-parametrik ikili karşılaştırmalarda Mann Whitney-U testi kullanılmıştır. İstatistiksel analizlerde önemlilik seviyesi olarak $p<0.05$ kabul edilmiştir. Yapılan analiz sonuçlarında; cinsiyete ve yaşa göre yaşam kalitesi ölçüm değerlerinde anlamlı bir fark bulunmamıştır. Beden kitle indekslerine göre "Fiziksel İşlev (Fİ)", "Mental Rol (MR)" ve "Fiziksel Özet Sağlık Skoru (FSS)" değerlerinde anlamlılık tespit edilmiştir ($p<0.05$). Sonuç olarak; sosyal yaşamın en önemli araçlarından biri olan spor ile erken başlayan fiziksel aktivitelerin bu bireylerin yaşam kalitelerinin artmasında önemli bir etken olduğu düşünülmektedir.

Anahtar Kelimeler: yaşam kalitesi; işitme engeli; işitme engelli sporcu

1. Introduction

Life quality is expressed as individual responses in daily life to the physical, mental and social impacts of discomforts affecting individual satisfaction in certain life conditions (Beal et al., 2004, Eser et al. 2008, Üneri et al., 2007).

World Health Organization defines life quality as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns". The main aim is to determine to what extent individuals are satisfied with their physical, psychological and social functions and to what extent they are disturbed by presence or absence of such characteristics of their life (Zorba, 2008).

Hearing is a basic sense which imparts relationship with the life and which is a part of individuals' mental and lingual development (Genç et al., 2005). Deaf is a serious disability which affects individuals by both psychological and physical means. Humans perceive their surrounding with their five senses and act accordingly. Absence of these senses; touch, sight, taste, smell and hear; causes significant consequences which will put individuals in a difficult situations and negative impacts on individual's education and socialization process by its serious effects on people's lives (Tolan, 1995).

Deaf individuals may exhibit some differences in development process according to characteristics of hearing disorders (Keilman et al.,2007, Leigh et al., 1991). The most prominent impacts of hearing loss are the difficulties of understanding and expressing the language (Van et al., 2001). Psychological, emotional, social and cognitive effects of hearing loss affect individuals' life quality (Sunal et al., 2005, Van et al., 2001).

Disability takes an important place among the factors decreasing life quality (Amundson, 2005). Due to aforementioned reasons, this study has been planned to assess life quality of deaf elite sportsmen.

2. Method

Investigation Model

This study is a descriptive research questioning the existing situation. This study was conducted to investigate life quality of elite sportsmen who have been called for 23rd Deaflympics preparation camp by Turkish Deaf Sports Federation. Data are obtained from the individuals at different ages and evaluated with cross sectional research.

Study Group

The population of this study is comprised of elite sportsmen within the body of Turkish Deaf Sports Federation and sampling is comprised of 62 sportsmen; 31 male and 31 female; who are called for 23rd Deaflympics by Turkish Deaf Sports Federation.

Gathering the Data

In this study, to assess life quality of the participants, SF-36 scale which was developed by Ware in 1987 and whose validation and reliability study were conducted by Koçyigit et. al in 1999 (Koçyiğit et al., 1999). SF–36 comprises of 36 questions and 8 separate sections. Weighted scores of the questions included in each section are summed as section score. The reason of using summary scores is to ease interpretation and comparison.

Physical fitness summary score (FPSS), physical functions (PF) as an indicator for physical health, physical role (PR), pain (P) and general health perception (GHP) are affected by sub component scores. Mental health summary score (MHSS), vitalness (V), social function (SF), mental role (MR), mental function (MF) are considered to be functions of sub components. Grading is performed out of 100 points in SF-36 scale and given points differs between 0 and 100 points for each section. In this scale, higher scores point higher level of health while lower scores show problems in health.

Evaluation of the scale differs for each section. Fourth and fifth questions of the scale yes/no, other questions are evaluated by likert type rating (3, 5 and 6). 1, 6, 7, 8, 9a, 9d, 9e, 9h, 11b, 11d items of the scale are calculated by inverting. Scores of the questions comprising sub scales of SF-36 life quality scale are summed by weight; Physical (physicalhealthcomponentsummaryscale-PCS) and Mental (mentalhealthcomponentsummaryscale - MCS) Health Summary Score Scale are obtained. Total score calculation is not performed. Obtained summary scores are expressed as constant variables changing between zero and hundred. Zero shows bad health condition while 100 shows good health condition.

In obtaining physical fitness summary score, physical function, physical role and pain are dominant while mental role or mental functions are prominent in mental health summary score. General health perception, vitalness and social function contribute to both summary scores in similar way (Bozdemir, 2006).

3. Analysis of the Data

To evaluate the data obtained during the study and create the tables, SPPS (Statistical Package for Social Sciences) 22 was used. Interquartile ranges are given in constant variables obtained in the scales while average and standard deviation values are also presented to make data and translation more understandable. In comparison of qualitative variables, first of all, suitability of parametric test conditions to normal distribution is investigated. Mann Whitney U test was used since parametric test conditions are not met. Significance level was adopted as $p<0.05$ in all statistical analysis.

Findings

Descriptive Characteristics of the Individuals

Table 1. Physical Characteristics of Sportsmen

	Sports Age (years)	Age(years)	Height(cm)	Weight.(kg)	BMI(Wight/height^2)	VYY(%)
Female (n=31)	8,96±3,73	20,80±3,86	163,76±7,50	58,89±8,82	21,97±3,07	22,45±6,87
Male (n=31)	12,16±4,99	27,19±6,37	179,26±7,00	80,53±11,57	34,15±54,84	13,86±4,49

Findings related to general physical characteristics of the participant sportsmen are given in Table 1 with respect to gender.

Table 2. Life Quality Scores of the Sportsmen Enrolled in SF-36 Questionnaire

Total Life Quality Scores	(n=62)	X±SS	Median(IQR)
Physical Function (PF)		89,03±16,83	95(16,25)
Physical Role (PR)		77,01±34,85	100(50)
Pain(P)		66,75±18,67	74(33)
General Health Perception (GHP)		72,56±15,88	70(25)
Vitalness(V)		62,41±19,62	65(25)
Social Function(S)		71,97±24,65	75(25)
Mental Role (MR)		74,73±39,43	100(66,67)
Mental Health(MH)		69,80±13,52	72(17)
Physical Summary Health Score (PSHS)		50,67±6,40	51,96(8,15)
Mental Summary Health Score (MSHS)		46,48±7,28	46,62(11,12)

In Table 2, life quality scores of sportsmen according to SF-36 comprised of six sub components; "Physical Functions (PF)", "Physical Role (PR)", "Pain (P)", "General Health Perception (GHP)", "Vitalness (V)", "Social Function (SF)", "Mental Role (MR)", "Mental Function (MF)". In addition, there are two summary scores as "Physical Fitness Score" and "Mental Fitness Score".

Table 3. Life Quality Scores of Sportsmen With Respect to Gender

	Female (n=31)	Median (IQR)	Male (n=31)	Median (IQR)	z	p
Physical Function (PF)	86,61±15,45	90(20)	91,45±18,03	100(15)	-1,86	,062
Physical Role (PR)	75,00±34,76	100(50)	79,03±35,41	100(50)	-,772	,440
Pain (P)	67,54±17,93	74(33)	65,96±19,65	74(33)	-,170	,865
General Health Perception (GHP)	75,22±13,96	70(23)	69,90±17,41	70(25)	-,996	,319
Vitalness (V)	64,67±18,70	65(25)	60,16±20,55	60(25)	-,686	,493
Social Function (S)	68,14±26,97	75(25)	75,80±21,87	75(37,50)	-1,04	,296
Mental Role (MR)	70,96± 39,19	100(66,67)	78,49±39,95	100(33,33)	-,693	,488
Mental Health (MH)	72,64±12,18	72(16)	66,96±14,38	68(16)	-1,56	,117

Physical Health Summary Score (PHSS)	50,34±4,93	50,46(8,42)	51,01±7,67	53,53(6,92)	-1,38	,166
Mental Health Summary Score (MHSS)	46,82±7,70	47,45(10,05)	46,14±6,94	46,49(10,78)	-,697	,486

* p< 0,05

Z Value regarding + Mann-Whitney U test

Findings related to life quality of the participant sportsmen given in Table 3 with respect to gender. Mann Whitney U test was used to understand statistical significance in life quality between genders. In the conducted analysis, it is observed that there is no statistical significance in life quality between genders.

Table 4. Life Quality Scores of Sportsmen According to BMI

	BMI <25kg/m²	**Median (IQR)**	**BMI ≥25 kg/m²**	**Median (IQR)**	**z**	**p**
Physical Function (PF)	85,59±19,13	90(20)	96,25±6,25	100(5)	-2,41	,016*
Physical Role (PR)	72.02±36,71	100(50)	87,50±28,67	100(0)	-1,94	,052
Pain (P)	65,09±19,91	73(43)	70,25±15,65	74(31)	-,873	,382
General Health Perception (GHP)	71±16,60	67(21,25)	75,85±14,07	73,50(23)	-,990	,322
Vitalness (V)	64,40±18,28	65(25)	58,25±22,08	55(33,75)	-,79	,427
Social Function (S)	69,94±25,90	75(31,25)	76,25±21,80	87,50(21,88)	-,980	,327
Mental Role (MR)	66,66±40,32	100(66,65)	91,66±32,21	100(0)	-2,31	,020*
Mental Health (MH)	71,90±13,11	72(16)	65,40±13,62	64(19)	-1,858	,063
Physical Health Summary Score (PHSS)	49,42±6,80	50,73(9,33)	53,32±4,57	54,70(5,92)	-2,32	,020*
Mental Health Summary Score (MHSS)	46,55±7,47	46,83(12,10)	46,33±7,05	46,60(7,30)	-,068	,946

* p< 0,05

Z Value regarding + Mann-Whitney U test

Findings regarding life quality of participant sportsmen are given in Table 4 according to body mass index. Mann Whitney U test was used to understand statistical significance in life quality with respect to body mass index. In the conducted analysis, it is observed that there is statistical significance in “Physical Function (PF)”, “Mental Role (MR)” and “Physical Health Summary Score (PHSS)” (p<005).

Table 5. Life Quality Scores of Sportsmen With Respect to Age Groups

	n	X±SS	Median(IQR)	z	p
Physical Function (PF)					
under20 years (including 20)	26	84,03±22,67	92,50 (22,50)	-1,21	0,22
over 20 years (excluding 20)	36	92,63±9,74	100 (15)		
Physical Role (PF)					
under 20 years (including 20)	26	68,26±42,16	100 (81,25)		
over 20 years (excluding 20)	36	83,33±27,38	100 (25)	-1,32	0,18
Pain(P)					
under 20 years (including 20)	26	63,96±18,09	74 (34,50)		
over 20 years (excluding 20)	36	68,77±19,08	74 (33)	-1,15	0,24
General Health Perception (GHP)					
under 20 years (including 20)	26	71,65±17,73	71 (26,25)		
over 20 years (excluding 20)	36	73,22±14,62	70 (24,75)	-0,14	0,88
Vitalness(V)					
under 20 years (including 20)	26	65,38±18,32	65 (30)	-0,80	0,42
over 20 years (excluding 20)	36	60,27±20,49	65 (25)		
Social Function(S)					
under 20 years (including 20)	26	69,23±24,03	75 (28,13)	- 1,00	0,31
over 20 years (excluding 20)	36	73,95±25,24	75 (34,38)		
Mental Role(MR)					
under 20 years (including 20)	26	71,76±39,65	100 (41,76)	-0,54	0,58
over 20 years (excluding 20)	36	76,85±39,69	100 (66,67)		
Mental Health(MH)					
under 20 years (including 20)	26	71,53±12,09	72 (13)	- 0,44	0,65
over 20 years (excluding 20)	36	68,55±14,50	72 (20)		
Physical Health Summary Score (PHSS)					
under 20 years (including 20)	26	48,47±7,93	50 ,27 (11,71)	- 1,84	0,06
over 20 years (excluding 20)	36	52,26±4,51	53,10 (5,98)		
Mental Health Summary Score (PHSS)					
under 20 years (including 20)	26	47,47±6,38	47,86 (9,74)	- 0,8	0,38
over 20 years (excluding 20)	36	45,76±7,88	46,51 (11,22)		

* p< 0,05

Z Value regarding + Mann-Whitney U test

Findings regarding life quality of participant sportsmen are given in Table 5 with respect to age groups. Mann Whitney U test was used to understand statistical significance in life quality with respect to body mass index. In the conducted analysis, it is observed that there is no statistical significance.

4. Discussion Results

The study conducted to assess life quality of elite deaf sportsmen are evaluated within the scope of scales, found evidences are interpreted and discussed based on the literature.

When summary scores obtained from life quality of individuals in the study group are evaluated, it is observed that physical fitness score average is 50.67 ± 6.4, mental health score average is 46.48 ± 7,2. Averages of life quality sub scales are; Physical function; 89.03 ± 16.83, Physical Role; 77.01 ± 34.85, Pain; 66.75 ± 18.67, General Health Perception; 72.56 ± 15.88, Vitalness; 62.41 ± 19.62, Social Function; 71.97 ± 24.65, Mental Role; 74.73 ± 39.43, Mental function; 69.80 ± 13.52.

When life quality scores of the individuals are evaluated with respect to gender, it is observed that“ General Health Perception (GHP)”, “Mental Role (MR)”, “Physical Role (PR)”, “Pain (P)”, “Physical Function (PF)”, “Vitalness (V)”, “Mental Function (MF)”, “Physical Fitness Score”, “Mental Fitness Score” and “Social Function (SF)” scores between the genders are not statistically significant. However, it is observed that averages of “Physical Function (PF), “Physical Role” and “Physical Health Score” are higher in deaf male sportsmen when compared with deaf female sportsmen.

In a study covering five locations of China, life quality scores of male sportsmen are higher than those of female sportsmen in almost all age groups except for social function and mental function (Wang et al., 2011). In the study conducted by Kırgız, Şener, Sever, Arslanoğlu (2014), male scores are higher in all categories except for mental function score. As a result of life quality study conducted on 15 age and older population in New Zealand, it was observed that males had higher scores except for General Health Perception (Scott et al., 1999). Our study has been conducted on deaf people; however, it is similar to those conducted on sedentary healthy individuals. It is though that this is resulted from the gender and physical strength acquired by sports.

When life quality of the individuals are compared with respect to body mass index, it is observed that Physical Role (PR)”, “Pain (P)”, “General Health Perception (PF)”, “Vitalness (V)”, “Social Function (SF)”, “Mental Function (MF)”, “Mental Fitness Score (MFS)” are not statistically significantly ($p<0,05$) while “Physical Fitness Score”, “Physical Function (PF)”, “Mental Role (MR)” are statistically significant ($p<0,05$). In our study, “Physical Fitness Score”, “Physical Function (PF)”, “Mental Role” are higher for individuals who have 25 kg/m^2 and higher than those whose BMI is lower than body mass index 25 kg/m^2.

Koçak and Özkan (2009), in their study, observed that physical activity level was low in older people who have body mass index higher than 30 while there is no difference in life quality of fat and non-fat individuals (Koçak et al., 2009).

Vural (2010) have compared life quality of office workers with respect to body mass index, there is no statistical significance in PR, PF, P, GH, V, SF, MR, MF, PHS ($p>0.05$) while

there is statistical significance in MHS.In our study, statistical significance is observed in "Physical Function", "Mental Role (MR)" and "Physical Health Summary Score (PHSS)"($p<0.05$). Body mass index is calculated by body weight in kilograms divided by squared of height in meters. BMI values increases by age in both man and woman (Ergun, 2006). Since our study group are performing sports at elite levels and their muscle weights are high, BMI values are higher and not familiar with sedentary individuals. Even though BMI values are higher, measurement results of our study group are meaningful since they are performing sports (Vural, 2010).

In our study, when life quality is compared according to age groups, it is observed that "General Health Perception (GHP)", "Mental Role (MR)", "Physical Role (PR)", "Pain (P)", "Physical Function (PF)", "Vitalness (V)", "Mental Function (MF)", "Physical Health Score (PHS)", "Mental Health Score (MHS)" are not statistically meaningful while social function (SF) is statistically significant ($p<0,05$).

The study conducted by Vural (2010) shows that physical fitness score is higher in young and middle-aged individuals while it is lower in individual over 40 year-old. In contrast physical health score, mental health score is higher in individuals over 40 year-old and lower in young and middle-aged individuals. This result is not parallel with our study. This is resulted by the fact that even if they are deaf, the individuals in the study group are sportsmen; therefore, their life quality scores are higher than sedentary individuals.

As a result; disability of deaf individuals affect these individuals in negative way. Early diagnosis is vital for continuity of social life of deaf individuals. It is thought that early beginning sports activities as the most prominent tool of social life are important factors in these individuals' life for improving their life quality. It is thought that to integrate disabled people into society and to improve their life quality; concerned institutions should make initiatives to provide those people with proper environment for physical activities, such facilities should be constructed, disabled people and their families should be informed about benefits of physical activities.

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