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EXAMINATION OF THE SERIOUS LEISURE, LEISURE SATISFACTION AND QUALITY OF LIFE OF PEOPLE WITH PHYSICAL DISABILITIES

ABSTRACT

The main objective of this study was to classify types of serious leisure participants with physical disabilities, and to examine the differences among the segmented groups based on the serious leisure qualities regarding leisure satisfaction and quality of life. For this aim, questionnaires were used to collect data, and they were applied on 133 serious leisure participants with physical disabilities. A two-stage sampling method (a purposive and a snowball sampling procedures) was employed. According to the results of the cluster analysis, serious leisure participants with physical disabilities classified into three different clusters, and they were named as "devotees", "moderate devotees", and "core devotees". MANOVA results revealed significant differences among the segmented groups on leisure satisfaction and psychological aspect of quality of life. Core devotees were more satisfied with their serious leisure pursuit and they reported higher levels of psychological quality of life than devotees and moderate devotees. As a conclusion, it can be claimed that as the level of participation in serious leisure increases, leisure satisfaction and psychological quality of life increase, too.

Keywords: People with Disabilities, Serious Leisure, Casual Leisure, Leisure Satisfaction, Quality of Life

FİZİKSEL ENGELLİ BİREYLERİN CİDDİ BOŞ ZAMAN, BOŞ ZAMAN TATMİNİ VE YAŞAM KALİTESİNİN İNCELENMESİ

ÖZ

Bu çalışmanın temel amacı fiziksel engele sahip olan ciddi boş zaman katılımcılarının sınıflandırılması ve ciddi boş zaman özelliklerine bağlı olarak boş zaman tatmini ve yaşam kalitesi kapsamında gruplar arasındaki farklılıkların incelenmesidir. Bu amaç kapsamında anketler kullanılarak veriler toplanmış, ve 133 fiziksel engelli ciddi boş zaman katılımcısı çalışmaya dahil edilmiştir. İki aşamalı örnekleme (amaçlı örnekleme ve kartopu örnekleme) yöntemi kullanılmıştır. Yapılan kümeleme analizi sonuçlarına göre, fiziksel engelli ciddi boş zaman katılımcıları 3 farklı grupta sınıflandırılmış ve "fanatikler", "orta düzey fanatikler" ve "gerçek fanatikler" olarak isimlendirilmiştir. MANOVA sonuçlarına göre, boş zaman tatmini ve psikolojik yaşam kalitesi boyutunda gruplar arasında anlamlı farklılıklar ortaya çıkmıştır. Gerçek fanatikler olarak isimlendirilen ciddi boş zaman katılımcılarının seçtikleri ciddi boş zaman etkinliğinden, fanatikler ve orta düzey fanatiklere göre daha fazla tatmin oldukları ve daha yüksek düzeyde psikolojik yaşam kalitesine sahip oldukları ortaya çıkmıştır. Sonuç olarak, ciddi boş zaman katılımı arttıkça boş zaman tatmini ve psikolojik yaşam kalitesinin arttığını söylemek mümkündür.

Anahtar Kelimeler: Fiziksel Engelli Bireyler, Ciddi Boş Zaman, Kayıtsız Boş Zaman, Boş Zaman Tatmini, Yaşam Kalitesi

1. INTRODUCTION

Several studies (Brown et al., 2008; Cheng, 2010; Heo et al., 2010; Heo et al., 2013; Kim et al., 2011; Liu, 2014; Lu and Argyle, 1993, 1994; Siegenthaler and O'Dell, 2003; Silverstein and Parker, 2002) have found serious leisure activities contribute to the quality of life and leisure satisfaction of the people without disabilities. While the contribution of serious leisure participation on quality of life and leisure satisfaction is well documented for individuals without disabilities, serious leisure for the people with disabilities has been largely neglected. Stebbins (1998, 2000), Patterson (1997, 2000, 2001) and Patterson and Pegg (2009) encouraged research to apply serious leisure to people with disabilities to better understand the benefits of serious leisure for them. This study is an initial exploration of the different types of serious leisure groups with people with physical disabilities and their differences regarding leisure satisfaction and quality of life. Stebbins (1992) observed that serious leisure involvement was related to life satisfaction and well-being. He also suggested that participation in the activity can vary because of the degree of seriousness and he described the terms devotees, participants and dabblers. Therefore, exploration and segmentation can help to understand the degree of seriousness among the serious leisure participants with physical disabilities and it may contribute to promote serious leisure activities according to their characteristics. In addition, investigating the differences of leisure satisfaction and quality of life levels of the segmented groups can help to develop unique serious leisure events that improve leisure satisfaction and quality of life, and attract more serious leisure participants with physical disabilities. Therefore, the purpose of this study is twofold;

- First, an attempt is made to classify types of serious leisure participants with physical disabilities adopting cluster analysis, and to examine the differences among the segmented groups based on the serious leisure qualities,
- A second aim is to investigate how these segmented serious leisure groups could relate differently to leisure satisfaction, quality of life, using MANOVA, and to identify the differences of the characteristics of segmented groups among different demographic and disability-related variables, using X^2 analysis.

2. RESEARCH SIGNIFICANCE

Stebbins (1992) first identified the concept of serious leisure and defined it as "the systematic pursuit of a hobbyist, amateur and volunteer activity sufficiently substantial, interesting, and fulfilling for the participant to find a leisure career there acquiring and expressing a combination of its special skills, knowledge and experience" (p.3). Stebbins (1992) identified six qualities of serious leisure as perseverance, career, significant efforts, and identity with the pursuit, unique ethos, and benefits that distinguish it from casual leisure. Personal and social durable benefits or results of serious leisure are "self-actualization, self-enrichment, self-expression, regeneration or renewal of self, feelings of accomplishments, enhancement of self-image, social interaction and belongingness, and lasting physical products of the activity" (Stebbins, 1999:15). In accordance with Stebbins' claim, several researchers have found that the experience of serious leisure provides various benefits and outcomes. According to the studies on amateurs, hobbyists, and volunteers, self-enrichment, self-gratification and self-actualization were the most important rewards in serious leisure

(Stebbins, 2007). Through observation and in-depth interviews of volunteer campus tour guides, Qian and Yarnal (2010) have identified additional rewards of engaging in serious leisure volunteering, which include psychological, social, instrumental and communal benefits. It was found that the benefit of making friends was the most prevalent benefit of the serious leisure activity of volunteering. Heo et al. (2010) have suggested that subjective well-being, which involves quality of life and life satisfaction, is an important consequence of serious leisure. Kim et al. (2011) investigated the relationship between taekwondo participation as a possible serious leisure pursuit and associated life satisfaction and perceived health. According to the results, they demonstrated that serious leisure involvement was highly related with life satisfaction and perceived health.

In addition, in the study of Siegenthaler and O'Dell (2003), it was found that playing golf as a serious leisure activity helped older adults age well, and provided significant social relationships and successful aging. Similarly, in another study, motivation and satisfaction linked with serious leisure involvement among bikers, and a significant positive correlation was found between the levels of satisfaction and motivation, and serious leisure. In a study conducted by Heo et al. (2013), level of involvement in serious leisure is positively associated with the life satisfaction and health in older adults. Brown et al. (2008) also discovered a positive relationship between serious leisure participation and successful aging among shag dancers. Additionally, some studies (Lu and Argyle, 1993, 1994; Cheng, 2010) showed that the people who engage in leisure activities at the serious level have more leisure satisfaction and happiness than the people who participate in nonserious leisure activities (cited in Liu, 2014).

Liu (2014) conducted a study with a sample of participants at a Chinese university, and found that engaging in a serious leisure activity enhanced subjective well-being and leisure satisfaction. Based on the existing literature, it can be noted that involvement in a leisure pursuit at a serious level provides greater leisure satisfaction, life satisfaction and quality of life. Given the links between overall life satisfaction, quality of life and leisure satisfaction for those who engage in serious leisure activities and the resultant benefits obtained, it is noteworthy to investigate serious leisure for people with disabilities, which constitute a major gap in leisure research. Therefore the importance of this study is to connect and build on the areas of disabled serious leisure, leisure satisfaction and quality of life, and also provides insights into the characteristics of the people with disabilities among different levels of serious leisure involvement.

2.1. Serious Leisure for People with Disabilities

Based on the existing literature, serious leisure for people with disabilities has become a key component in the rehabilitation process (Kleiber, 1996 cited in Stebbins, 1998). Feelings of accomplishment, enhancement of satisfaction (Stebbins 1998, 2000), work career (Patterson, 1997), contribution to social inclusion (Patterson, 2001), development of self-confidence, self-esteem (Patterson, 2000; Patterson and Pegg, 2009), self-determination and skill level of sport (Heo et al., 2008) are provided by serious leisure for people with disabilities. Patterson (2000) conducted a case study to interview three people with intellectual disabilities who are participating in serious leisure activities. Three participants with moderate intellectual disability, with learning

disability and mild epilepsy, and with mild intellectual disability autism, were selected. Case studies have shown that serious leisure activities nurture social ties and provide opportunities to practice working skills. It is also found that rewards of the serious leisure for the people with disabilities are; providing similar benefits achieved through work employment, and developing self-esteem, identity, and commitment. Through a review of the existing literature related to serious leisure and disabilities, Patterson (2001) compared the people with intellectual disabilities who engage in serious leisure education program and who have not been exposed to serious leisure activities. According to the results of the study, it was revealed that serious leisure education programs helped people with disabilities to become socially included and accepted members in the community. Heo et al. (2008) conducted a quantitative study with 76 people with developmental disabilities and orthopedic-related impairments. They investigated the relationships among self-determination, leisure constraints, activity skill levels and serious leisure. The results showed that serious leisure was significantly associated with self-determination, intrapersonal and structural constraints and skill level of sport. Patterson and Pegg (2009) used a qualitative approach conducting semi-structured interviews with 10 people with intellectual disabilities who engaged in community-based leisure activities that can be classified as serious leisure activities. This study demonstrated that serious leisure involvement helps individuals to develop self-esteem and self-confidence, and to increase social competencies and skills in community settings.

3. METHOD

3.1. Data Collection Procedure and Sampling

Questionnaires were used to collect data, because this study was a quantitative study. The data were collected between June 15th and August 15th 2014 by the researcher. An incentive for participation was offered in order to try to increase the response rate. Those who completed or submitted the questionnaire by August 15th, were asked if they were willing to participate in the random selection drawing for 5 of the $20 Amazon gift cards. If they indicated a desire to do so, at the end of the questionnaire they were asked to provide an e-mail address to which the gift card will be sent. To protect anonymity, the participants were not asked to write their names on the questionnaires. The sample was composed of the people with physical disabilities who were enrolled in any kind of serious leisure activity. In this study, a two-stage sampling method was used.

In the first stage, a purposive sampling technique was used. Recruitment criteria included participating in a serious leisure activity and having a physical disability. Casual leisure participants were not eligible to participate. Subjects in the sample were solicited from the physically disabled coaches in the Ability First Youth Sports Camp in Chico, CA (15–21 June) (n=10), the athletes who participated in the Sacramento Capitals Wheelchair Tennis Association Tournament in Roseville, CA (27–29 June) (n=27), and the San Jose Open Wheelchair Tennis Tournament in Santa Clara, CA (2–3 Aug) (n=41). The researcher first briefly explained the purpose of the study to the participants, and asked for their consent and then handed out the questionnaires to the physically disabled athletes and coaches who agreed to participate in the research voluntarily. The preliminary briefing and completing the questionnaires lasted approximately 25 minutes. From the 90 questionnaires distributed, 78 were returned for a response rate of 86.6%. In the second stage of the sampling, a

snowball sampling technique was used. In order to be as broad and inclusive as possible to include all kinds of serious leisure activities, athletes and coaches in the first sample were asked to provide access to any potential sample that they may have known. Some of them provided contact information of several athletes with physical disabilities that they have known.

The online form of the questionnaire, designed using *Google Docs*, was e-mailed to those potential participants. The e-mail included information about the aim of the study, inclusion criteria to participate in the study, name of the person who suggested them as a potential participant for this study and the link to the online form of the questionnaire. They were asked to consent to participate in the study and only those who consented were asked to click the link to the questionnaire to fill it out. The online form of the questionnaire was left open between June 22nd and August 15th 2014. A total of 59 participants submitted the online form of the questionnaire, resulting in the total sample being 137 participants. The total number of valid questionnaires after the exclusion of outliers was 133 (a usable response rate of 97%). Sample characteristics are provided in Table 1 and 2.

3.2. Measures

The instrument for this study includes 4 sections, which are aimed to measure a. serious leisure, b. quality of life, c. leisure satisfaction, and d. serious leisure involvement, disability and demographic information. The dependent variable was the level of serious leisure participation. It was measured using Gould et al.'s (2008) SLIM Short Form, based on Stebbins' constructs of serious leisure theory. It includes 54 items and 6 qualities of serious leisure -perseverance, efforts, career, benefits, ethos and identity- adopted from Stebbins (1982). With the use of q-sort, and expert panel, and confirmatory factor analysis, it demonstrated excellent model fit, high reliability (α=.68-.97), and construct validity. Cronbach alpha of the SLIM scale in this study was .91 and Cronbach's alphas for each subscale ranged from .69 to .89. The World Health Organization Quality of Life-BREF Scale (WHOQOL-BREF), which is a 26-item survey, was used to assess quality of life of the people with physical disabilities. It produces scores for four domains related to quality of life; physical health, psychological, social relationships and environment. Physical health domain of quality of life gives information about activities of daily living, energy and fatigue, mobility, pain and discomfort, sleep and rest, and work capacity.

Psychological domain is included facets of bodily image and appearance, negative and positive feelings, self-esteem, spirituality and personal beliefs, thinking, learning and concentration. Social relationships relates to facets of personal relationships, social support and sexual activity. Lastly, environment is included financial resources, freedom, physical safety and security, home environment, transport, opportunities for acquiring new information and skills, and participation in recreation (The WHOQOL Group 1998). WHOQOL-BREF is presently the most acceptable, reliable and valid instrument to evaluate quality of life with the people with physical disabilities – particularly after spinal cord injury (Hill et al., 2010). It demonstrated good discriminant validity, content validity, internal consistency (α=.66-.84), test-retest reliability (α=.66-.87) and construct validity (The WHOQOL Group, 1998). In this study, Cronbach's alphas for each dimension ranged from .60. to .73. To measure leisure satisfaction two primary approaches have been pursued: multiple

dimensions measurement and global measurement. Kao (1992) stated that the choice of leisure satisfaction measurement approach should be made based upon the nature of the study. For the study of evaluating sources of leisure satisfaction, multiple dimensions measurement should be employed. To measure the perceived intensity level of leisure satisfaction, global measurement should be employed. Therefore, in this study global measurement was used to assess intensity level of leisure satisfaction. In this sense, five general questions were asked to respondents and they were rated on a 5-point scale (1=strongly disagree and 5=strongly agree). Sample items were; "I thoroughly enjoyed this activity" and "I cannot imagine a better activity than this". The mean of five items was 4.35 (SD=.44), with the respondents generally agreeing that they were satisfied with their serious leisure. Cronbach's alpha in this study was .71. The aim of the last section of the questionnaire is to collect data on demographic and disability-related information and serious leisure activity involvement information.

4. FINDINGS

4.1. Profile of the Respondents

The respondents were mostly male participants (63.2%), aged 31-40 years old (33.8%), employed (54.9%) and single (57.9%). Regarding economic status, 36.1% of them were upper middle class. Roughly one third of them had a bachelor's degree. In terms of disability-related information, the largest groups of the participants was those with spinal cord injury (46.6%) with moderate severity (53.4%) for over ten years (47.4%) (see Table 1).

Table 1. Demographic and disability profile of the participants

	F	%		F	%
Gender			Type of Disability		
Female	49	36.8	Spinal Cord Injury	62	46.6
Male	84	63.2	Leg Amputation	29	21.8
Age			Spina Bifida	10	7.5
20 and <	14	10.5	Arm Amputation	6	4.5
21-30	19	14.3	Ehlers Danlos Syndrome	4	3.0
31-40	45	33.8	Cerebral Palsy	2	1.5
41-50	30	22.6	Muscular Dystrophy	2	1.5
50 and >	25	18.8	Spinal Column Deviations	2	1.5
Employment Status			Arthrogryposis	2	1.5
Not employed	45	33.8	Blind	2	1.5
Employed	73	54.9	Charcot-Marie-Tooth	2	1.5
Student	15	11.3	Paralysis&Spasticity (ABI)	2	1.5
Marital Status			Osteogenesis Imperfecta	1	0.8
Single	77	57.9	Hereditary Spastic Parapare	1	0.8
Married	56	42.1	Post-stroke hemiplegia	1	0.8
Economic Status			Spinal Agenisis	1	0.8
Lower lower class	19	14.3	Neurological condition	1	0.8
Lower middle class	39	29.3	Post-polio syndrome	1	0.8
Upper lower class	20	15.0	TBI	1	0.8
Upper middle class	48	36.1	Fibromyalgia	1	0.8
Upper class	7	5.3	Severity of Disability		
Level of Education			Mild	34	25.6
High school graduate	23	17.3	Moderate	71	53.4
Associate degree	41	30.8	Profound	28	21.1
Bachelor's degree	42	31.6	Onset of Disability		
Postgraduate degree	27	20.3	Birth	35	26.3
			Over ten years ago	63	47.4
			Over five years ago	18	13.5
			In the last five years	17	12.8

The range of the leisure activities was found to be quite diverse, but the majority of all participants involved in wheelchair tennis (45.9%) for more than three years (75.2%) in which they evaluated their performance mostly as good (43.6%) (see Table 2).

Table 2. Serious leisure activity involvement of the participants

	F	%		F	%
Serious leisure activity			Time in the activity		
Wheelchair tennis	61	45.9	6 months-1 year	2	1.5
Disabled water skiing	11	8.3	Between 1-2 years	4	3.0
Disabled skiing	10	7.5	Between 2-3 years	27	20.3
Wheelchair rugby	7	5.3	More than 3 years	100	75.2
Wheelchair basketball	6	4.5	Performance in the		
Adaptive surfing	5	3.8	activity	3	2.3
Adaptive track and field	5	3.8	Poor	30	22.6
Adaptive volleyball	4	3.0	Fair	58	43.6
Adaptive dancing	4	3.0	Good	42	31.6
Horseback riding	3	2.3	Excellent		
Adaptive sailing	2	1.5			
Wheelchair football	2	1.5			
Swimming	2	1.5			
Hockey	2	1.5			
Wheelchair lacrosse	2	1.5			
All-terrain vehicle racing	1	0.8			

Scores on each of the qualities of serious leisure exceeded 3 points (out of 5). Effort (M=4.70) was the highest scored quality of serious leisure. Conversely, respondents, regardless of their cluster membership, scored lowest on ethos (M=3.99) than on other qualities of serious leisure (see Table 3).

4.2. Identification of the Segmented Clusters

To segment the participants based on the six dimensions of serious leisure obtained from the SLIM, a two-stage cluster analysis was conducted. First, hierarchical cluster method was applied to determine possible combinations of clusters. Based on the dendogram and agglomerative schedule, it was decided to split the participants into three groups using a nonhierarchical K-means cluster analysis. Cluster analysis revealed three types of serious leisure participants with varying degrees of seriousness (see Table 3). Overall, in order to validate the results of the K-means cluster analysis, a discriminant analysis was conducted with three clusters and six serious leisure factors. According to the results of the discriminant analysis, 97% of the participants were correctly classified in their clusters, showing an adequate validity of the clusters.

Table 3. Cluster analysis of the serious leisure participants

Factors	Segments						Overall Mean		F
	Cluster 1 (n= 33)		Cluster 2 (n= 43)		Cluster 3 (n=57)				
	M	SD	M	SD	M	SD	M	SD	
Perseverance	4.44	.48	4.48	.45	4.89	.25	4.64	.44	19.698*
Effort	4.49	.61	4.65	.45	4.86	.31	4.70	.47	7.292*
Career	4.43	.40	4.53	.37	4.84	.25	4.64	.37	19.158*
Benefits	3.92	.32	4.14	.24	4.57	.22	4.26	.37	76.623*
Ethos	3.08	.52	3.82	.44	4.65	.40	3.99	.77	134.527*
Identity	3.91	.64	4.70	.37	4.78	.39	4.53	.58	41.628*

*p<.001 (1=Strongly disagree, 5=Strongly agree, M=Mean SD= Standard Deviation)

4.2.1. Cluster 1

Participants in this cluster, representing 24.8% of all respondents, were identified as "devotees". They showed high concern for effort (M=4.49), perseverance (M=4.44), and career (M=4.43) but displayed lower agreement for benefits (M=3.92), identity (M=3.91) and ethos (M=3.08). They scored the lowest in each dimension of serious leisure comparing with the other two groups called "moderate devotees" and "core devotees".

4.2.2. Cluster 2

"Moderate devotees" segment comprised 43 participants, representing 32.3% of the sample. They scored lower than the cluster 3, but higher than the cluster 1 in every aspect of serious leisure. They displayed high agreement on identity (M=4.70), effort (M=4.65), career (M=4.53), perseverance (M=4.48), benefits (M=4.14), and ethos (M=3.82). Moderate devotees showed especially the strongest agreement on identity, demonstrating the most significant difference separating them from the other clusters.

4.2.3. Cluster 3

Finally, 57 participants in the third cluster belong to "core devotees", representing 42.8% of total respondents. Those individuals scored the highest in every aspect of serious leisure. It can be argued that the people with physical disabilities who report high scores on serious leisure qualities may be strongly involved in a leisure activity. They expressed the strongest agreement on perseverance (M=4.89); and showed agreement on effort (M=4.86), career (M=4.84), identity (M=4.78), ethos (M=4.65) and benefits (M=4.57).

4.3. Characteristics of the Segmented Clusters

Table 4 summarizes the disability and demographic profiles of the segments. To investigate if demographic and disability-related variables differentiate among different types of serious leisure participants with physical disabilities, the chi-square test was applied. The chi-square test revealed that there was no significant difference ($p<.05$) among the three segments with respect to their demographic characteristics and disability-related information. Although no significant interaction effect was found, this test furthered the understanding of demographic characteristics of the segmented groups. The members of the cluster one, labeled as devotees, were mostly male and married, nearly two thirds employed and most of them had the associate degree, almost half were upper middle economic status, most of them were aged between 41–50 years old, and almost half had moderate disability for over ten years. In the second cluster, named as moderate devotees, respondents were primarily male and single, over half employed and had the bachelor's or postgraduate degree, around one third were upper middle economic status and were aged between 31–40, around half moderate disability for over ten years. The third cluster, named as core devotees, contained the highest proportion of people who were single and had post-secondary education. Over two thirds were male, most had a bachelor's degree, 35% were from lower middle economic status, 42% were aged between 31–40, over half had moderate disabilities and 42% had a disability for over ten years.

Table 4. Demographic and disability profile, and differences among segments

Question	Type	Cluster 1		Cluster 2		Cluster 3		X^2
		n	%	n	%	n	%	
Gender	Male	17	51.5	28	65.1	39	68.4	2.672
	Female	16	48.5	15	34.9	18	31.6	
Marital Status	Single	16	48.5	26	60.5	35	61.4	1.603
	Married	17	51.5	17	39.5	22	38.6	
Employment Status	Not employed	10	30.3	12	27.9	23	40.4	3.874
	Employed	21	63.6	24	55.8	28	49.1	
	Student	2	6.1	7	16.3	6	10.5	
Education Status	High school	5	15.2	8	18.6	10	17.5	4.068
	Associate degree	13	39.4	11	25.6	17	29.8	
	Bachelor's degree	9	27.3	12	27.9	21	36.8	
	Postgraduate degree	6	18.2	12	27.9	9	15.8	
Economic Status	Lower lower	6	18.2	7	16.3	6	10.5	7.510
	Lower middle	8	24.2	11	25.6	20	35.1	
	Upper lower	2	6.1	9	20.9	9	15.8	
	Upper middle	16	48.5	14	32.6	18	31.6	
	Upper class	1	3	2	4.7	4	7	
Age	20 <	4	12.1	4	9.3	6	10.5	10.831
	21-30	5	15.2	8	18.6	6	10.5	
	31-40	6	18.2	15	34.9	24	42.1	
	41-50	13	39.4	8	18.6	9	15.8	
	50 >	5	15.2	8	18.6	12	21.1	
Severity of Disability	Mild	9	27.3	10	23.2	15	26.3	.961
	Moderate	16	48.5	23	53.5	32	56.1	
	Profound	8	24.2	10	23.3	10	17.5	
Onset of Disability	Birth	7	21.2	13	30.2	15	26.3	6.096
	Over 10 years ago	16	48.5	23	53.5	24	42.1	
	Over 5 years ago	6	18.2	5	11.6	7	12.3	
	On the last 5 years	4	12.1	2	4.7	11	19.3	

4.4. Analysis of the Mean Differences among Clusters across Dependent Variables

To examine the cluster differences in regard to leisure satisfaction and the four dimensions of quality of life-physical health, psychological, social relationships, and environment-Multivariate Analysis of Variance (MANOVA) was employed. MANOVA is a "generalization of analysis of variance that allows researcher to analyze more than one dependent variable" (Bray and Maxwell, 1985, p. 5). Prior to conducting MANOVA, Pearson correlation analysis was conducted to examine the relationship among the dependent variables. According to the results (see Table 5), the dependent variables had significant positive correlations with each other in the moderate range (.20-.54).

Table 5. Correlations among the dependent variables

Dependent Variables	1	2	3	4	5	M	SD
Leisure satisfaction	1.000					4.35	0.45
Physical health	.217*	1.000				3.36	0.47
Psychological	.251*	.433**	1.000			3.79	0.40
Social relationships	.201*	.539**	.224**	1.000		3.66	0.74
Environment	.220*	.543**	.492**	.367**	1.000	4.14	0.51
* p<.05 **p<.01 (1=Strongly disagree, 5=Strongly agree, M=Mean, SD= Standard Deviation)							

In addition, the Box's M value 51.26 was associated with a p value of .019, showing the homogeneity of variance-covariance matrices that is another assumption for the appropriateness of a MANOVA. If the significance value is larger than .001, it shows that the homogeneity of covariance matrices between the groups was equal (Pallant, 2011). Furthermore, the assumption of equality of variances was tested using Levene's tests. Based on the results, physical and social relationships dimensions of quality of life were statistically significant ($p<.05$). It showed that the variances associated with the physical health and social relationships subscales were not equal. However, the analysis of variance is known to be robust when a more conservative alpha level (.025 or .01) for determining significance for these variables in the univariate F-test, was set (Pallant, 2011; Tabachnick and Fidell, 2007). So, in this case all the assumptions were met to do a MANOVA. MANOVA was conducted with three segments of serious leisure participants as independent variables, and with leisure satisfaction, and four dimensions of the quality of life as dependent variables.

Since the analyses were established on four different dependent variables, a Bonferroni adjustment was applied in order to avoid inflated Type 1 error rate and the p value was set at .01. Therefore, results were considered as significant only if the probability value was less than .01 (Pallant, 2011). According to the results, a statistically significant MANOVA effect was obtained ($F_{(10,252)}=3.278$, $p<.01$, Wilks' Lambda= .78). The multivariate effect size was estimated at .115, which were considered a medium effect size according to the generally accepted criteria (Cohen, 1988).

This represented 11% of the variance in the dependent variables scores explained by the degree of seriousness. As can be seen in Table 6 and 7, there was a statistically significant difference among the clusters in terms of their leisure satisfaction ($F_{(2,130)}=8.565$, $p<.01$) and their psychological quality of life ($F_{(2, 130)}=6.203$, $p<.01$) with effect sizes ranging from .09 for leisure satisfaction to .12 for psychological quality of life, which were considered a medium effect size (Cohen 1988). The interactions among the clusters and the physical health, social relationships and environment dimensions of the quality of life were not significant ($p>.01$).

Table 6. Levene and ANOVA results

	Levene's		ANOVAs		
	F	p	F	p	n^2
Leisure satisfaction	0.39	.67	8.56	.00**	.12
Physical health	4.81	.01	0.16	.85	.00
Psychological	0.20	.81	6.20	.00**	.09
Social relationships	6.26	.01	0.77	.46	.01
Environment	0.97	.38	1.88	.14	.03
* p<.05 **p<.01					

Table 7. Comparison of the mean differences across dependent variables

	Cluster 1		Cluster 2		Cluster 3		Overall Mean	
	M	SD	M	SD	M	SD	M	SD
Leisure satisfaction	4.14	0.41	4.30	0.44	4.51	0.41	4.35	0.44
Physical health	3.32	0.37	3.38	0.42	3.38	0.55	3.36	0.47
Psychological	3.61	0.41	3.78	0.38	3.91	0.37	3.80	0.40
Social relationships	3.80	0.49	3.60	0.62	3.62	0.91	3.66	0.73
Environment	4.02	0.47	4.10	0.47	4.23	0.54	4.14	0.51
1=Strongly disagree, 5=Strongly agree, M=Mean, SD=Standard Deviation)								

The Tukey post-hoc tests were used to determine where the differences lie among the clusters and two dependent variables. The results revealed that leisure satisfaction variable significantly differentiated between devotees and core devotees ($p<.01$), and moderate devotees and core devotees ($p<.01$). So, the difference between devotees and moderate devotees ($p=.27$) was not significant with respect to leisure satisfaction. That is, core devotees ($M=4.52$, $SD=.41$) were more satisfied with their serious leisure pursuit than moderate devotees ($M=4.29$, $SD=.44$) and devotees ($M=4.14$, $SD=.41$). The mean scores of psychological quality of life significantly differentiated between devotees ($M=3.61$, $SD=.41$) and core devotees ($M=3.91$, $SD=.37$) ($p<.01$), whereas the difference between core devotees and moderate devotees ($M=3.78$, $SD=.38$) was not significant ($p>.01$) with respect to psychological quality of life. Therefore, an inspection of the mean scores suggested that core devotees reported higher levels of psychological quality of life than the other two clusters.

5. DISCUSSION AND CONCLUSION

To the best of my knowledge, the current study was the first attempt to quantitatively investigate the relationships among leisure satisfaction, dimensions of quality of life and serious leisure among people with physical disabilities. There are some studies (Heo et al., 2008; Patterson, 1997, 2000, 2001; Patterson and Pegg, 2009; Stebbins, 1998) that have demonstrated the effects of serious leisure involvement on people with disabilities on satisfaction, social inclusion and personal development. However, as Stebbins (1998) says, the evidence used to back up these studies has been limited. Based on the results, effort had the highest score among the six serious leisure qualities, followed by the perseverance and career. Although benefits, ethos and identity had lower scores than the other serious leisure qualities, their mean scores exceeded 3 points (out of 5). Stebbins (2008) stated significant personal effort as one of the most distinctive qualities of serious leisure, and he suggested "significant personal effort based on specially acquired knowledge, training, experience, or skill" (p. 336).

It may be argued that, because people with physical disabilities face with some constraints, they are likely to invest significant effort to participate in serious leisure activity in terms of time, expenses, or some access barriers. Furthermore, participants with physical disabilities have strongly agreed that they persevere through adversity encountered in serious leisure activity, which supports Stebbins' (1982) concept that obstacles such as embarrassment, frustration, anxiety, fatigue, boredom, injury, and other strains occur during serious leisure activity. Lee (2011) has also found that perseverance seems to be one of the most important serious leisure qualities that distinguish it from casual leisure. Moreover, for many people with physical disabilities, serious leisure can be challenging, and it requires to keep persevering because of the personal or environmental barriers such as lack of physical access and safety, poor transport, availability of support, lower socioeconomic level, feeling tired, dependency on others, and fear (Badia et al., 2011; Beart et al., 2001; Henderson et al., 1995) besides the adversities that Stebbins (1982) has mentioned. Patterson (2001) has claimed that participating successfully in serious leisure activities develops self-respect and through their accomplishments provides them an opportunity to be appreciated by others with great pride.

In addition, Patterson (1997) has suggested that serious leisure activities for the people with disabilities should be regarded as the possibility of finding a leisure career or as an open employment opportunity. The findings of this study not only supported the findings reported in the existing literature that having a career was very important quality for the people with physical disabilities, but also demonstrated that finding a career was as important as perseverance to overcome difficulties in serious leisure activities. According to the results of the cluster analysis, which was used to divide participants with physical disabilities into different types of serious leisure groups based on serious leisure qualities, there were three groups of participants; core devotees, moderate devotees, and devotees. Among the three different serious leisure participant types, there were statistically significant differences in terms of the seriousness of their leisure pursuit. The core devotee group has the highest mean seriousness score. They scored the highest in perseverance dimension of serious leisure and it can be inferred that they may more likely to overcome difficulties by being persistent than the members in the other two clusters.

The members of the first cluster, labeled as devotees, scored the lowest in every aspects of serious leisure, but they tended to try hard and put forth significant effort to improve their skills and to be more proficient in their chosen leisure pursuit. The members of moderate devotees scored less than core devotees and more than devotees in all aspects of serious leisure. They demonstrated the strongest agreement on identifying themselves as one dedicated or devoted to their chosen serious leisure activity, so they were more likely to identify themselves with their chosen leisure pursuit. By examining the differences among the groups, it appears that three groups have one thing in common. They all have a low score on the ethos and benefits aspects of serious leisure. The members of a serious leisure world are supposed to belong to a group composed of similar mentalities, ideas, or principles (Stebbins, 1982).

In addition, serious leisure has a number of benefits such as individual or group outcomes and durable benefits (1992), which was also supported by other research (Heo et al., 2008; Patterson, 1997, 2000, 2001; Patterson and Pegg, 2009). Therefore, the results suggest that leisure educators who work with people with disabilities should provide serious leisure activities, which appeal to their needs so as to develop unique ethos and to provide benefits particularly to devotees and moderate devotees. Thus, one component of the serious leisure activities would be, for instance, to offer substantial rewards and an exciting social world (Stebbins, 1998) and to give some tasks requiring interaction within the other people in the group and ensuring teamwork. In order to further identify the characteristics of three clusters, each cluster was cross tabulated with demographic and disability-related variables and the Chi-square test was applied. According to the cross tabulation distribution and the results of the Chi-square test, there were no significant differences among the three segments with respect to their demographic characteristics and disability-related information. To examine if leisure satisfaction and the dimensions of quality of life differentiate among the segmented serious leisure groups, MANOVA was conducted. Findings revealed that regardless of the cluster membership, scores on leisure satisfaction and on each component of quality of life exceeded 3 (out of 5). It was also found that the level of leisure satisfaction and psychological quality of life varied according to the degree of seriousness in the chosen leisure pursuit. In addition, core devotees were more satisfied

with their serious leisure pursuit and they reported higher levels of psychological quality of life than devotees and moderate devotees. This finding is consistent with the past studies (Heo et al., 2008; Patterson, 1997, 2000, 2001; Patterson and Pegg, 2009; Stebbins, 1998) that found that engaging in serious leisure activities was associated with well-being and satisfaction in their life.

With regard to the other aspects of quality of life, the findings of this study showed that physical health, social relationships, and environment didn't differentiate in terms of the degree of seriousness, but they all had high mean scores. Therefore, on the contrary to the view that people with physical disabilities can be impaired across a wide range of quality of life domains, they should offer leisure education programs to encourage them to participate in more serious leisure activities. In summary, this study empirically explored differences among the segmented people with physical disabilities with regard to the serious leisure qualities, leisure satisfaction and the dimensions of quality of life. It was hoped that this study might contribute to the body of knowledge and provide greater understanding of the nature of serious leisure for people with disabilities.

6. LIMITATIONS AND RECOMMENDATIONS

As with all research, this study has several limitations, and it suggests avenues for future research consideration. The sample for the current study is relatively small (N=133), and included participants from three events and their references. Therefore, results cannot be generalized to the population. Thus, it would be worthwhile to explore broader samples with a wider demographic base to generalize the results of the study more representatively. Also, it should be noted that past leisure satisfaction and quality of life were not measured before participating in serious leisure activities. Hence, studies with pre-post design might be recommended for the future research to evaluate whether the level of leisure satisfaction and quality of life change. Perhaps, a longitudinal study in which the respondents take the survey every three months during the serious leisure participation would contribute to a better understanding of serious leisure participation effects on quality of life and leisure satisfaction. A quantitative approach was used in this study, and a triangulated approach with focus groups or interviews, self-report and observations might have strengthened the results.

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REFERENCES

- Badia, M., Orgaz, B.M., Verdugo, M.A., Ullan, A.M., and Martinez, M.M., (2011). Personal factors and perceived barriers to participation in leisure activities for young and adults with developmental disabilities. Research in Developmental Disabilities, 32, 2055–2063. doi:10.1016/j.ridd.2011.08.007
- Beart, S., Hawkins, D., Kroese, B.S., Smithson, P., and Tolosa, I., (2001). Barriers to accessing leisure opportunities for

people with learning disabilities. British Journal of Learning Disabilities, 29, 133–138. doi:10.1046/j.1468-3156.2001.00109.x.

- Bray, J.H. and Maxwell, S.E., (1985). Multivariate Analysis of Variance. Newbury Park, CA: Sage Publications.
- Brown, C.A., McGuire, F.A., and J. Voelkl., (2008). The link between successful aging and serious leisure. International Journal of Aging & Human Development, 66, 73–95. doi:10.2190/AG.66.1.d
- Cheng, H.P., (2010). Serious leisure, leisure satisfaction and gardening by older adults (doctoral dissertation). University of Queensland, Brisbane, Australia.
- Cohen, J., (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.
- Gould, J., Moore, D., McGuire, F., and Stebbins, R., (2008). Development of the serious leisure inventory and measure. Journal of Leisure Research, 40, 47–68.
- Henderson, K.A., Bedini, L.A., Hecht, L. and Schuler, R., (1995). Women with physical disabilities and the negotiation of constraints. Leisure Studies, 14, 17–31. doi:10.1080/02614369500390021
- Heo, J., Lee, Y., Lundberg, N., McCormick, B. and Chun, S., (2008). Adaptive sport as serious leisure: Do self-determination, skill level, and leisure constraints matter. Annual in Therapeutic Recreation, 16, 31–38.
- Heo, J., Lee, Y., McCormick, B.P. and Pedersen, P.M., (2010). Daily experience of serious leisure, flow and subjective well-being of older adults. Leisure Studies, 29, 207–225. doi: 10.1080/02614360903434092
- Heo, J., Stebbins, R.A., Kim, J., and Lee, I., (2013). Serious leisure, life satisfaction, and health of older adults. Leisure Sciences, 35, 16–32. doi:10.1080/01490400.2013.739871
- Hill, M.R., Noonan, V.K., Sakakibara, B.M., Miller, W.C., and The SCIRE Research Team., (2010). Quality of life instruments and definitions in individuals with spinal cord injury: A systematic review. Spinal Cord, 48, 438–450. doi: 10.1038/sc.2009.164.
- Kao, C., (1992). A model of leisure satisfaction (Doctoral Dissertation). Indiana University, School of Health, Physical, Education and Recreation.
- Kim, J., Dattilo, J., and Heo, J., (2011). Taekwondo participation as serious leisure for life satisfaction and health. Journal of Leisure Research, 43, 545–559.
- Kleiber, D.A., (1996, July). Personal expressiveness and the transcendence of negative life events. Paper presented at the 4th World Congress of Leisure Research, World Leisure and Recreation Association, Cardiff, UK (cited in Stebbins 1998).
- Lee, C.S., (2011). An exploration of serious leisure types, flow and successful aging in later life (Master's Thesis). University of Illinois, Department of Recreation, Sport and Tourism, Urbana-Champaign.
- Lin, C., (2008). The effect of serious leisure and leisure experience on leisure commitment of bike participants in central Taiwan (master's thesis), National Yunlin University of Science and Technology, Taiwan, Republic of China.
- Liu, H., (2014). Personality, leisure satisfaction, and subjective well-being of serious leisure participants. Social

Behavior and Personality, 42, 1117–1126. doi: 10.2224/sbp.2014.42.7.1117.

- Lu, L. and Argyle, M., (1993). TV watching, soap opera and happiness. The Kaohsiung Journal of Medical Sciences, 9, 501–507.
- Lu, L. and Argyle, M., (1994). Leisure satisfaction and happiness as a function of leisure activity. The Kaohsiung Journal of Medical Sciences, 10, 89–96.
- Pallant, J., (2011). SPSS survival manual: A step by step guide to data analysis using SPSS (4th Ed.). Crows Nest, NSW: Allen&Unwin.
- Patterson, I., (1997). Serious leisure as an alternative to a work career for people with disabilities. Australian Disability Review, 2, 20–28.
- Patterson, I., (2000). Developing a meaningful identity for people with disabilities through serious leisure activities. World Leisure Journal, 42, 41–51. doi:10.1080/04419057.2000.9674185
- Patterson, I., (2001). Serious leisure as a positive contributor to social inclusion for people with intellectual disabilities. World Leisure Journal 43, 16–24. doi:10.1080/04419057.2001.9674234
- Patterson, I. and Pegg, S., (2009). Serious leisure and people with intellectual disabilities: Benefits and opportunities. Leisure Studies, 28, 387–402. doi:10.1080/02614360903071688
- Qian, X.L. and Yarnal, C., (2010). Benefits of volunteering as campus tour guides: The rewards of serious leisure revisited. Leisure/Loisir, 34, 127–144. doi:10.1080/14927713.2010.481109
- Siegenthaler, K.L. and O'Dell, I., (2003). Older golfers: Serious leisure and successful aging. World Leisure Journal, 45, 45–52. doi:10.1080/04419057.2003.9674304
- Silverstein, M. and Parker, M., (2002). Leisure activities and quality of life among the oldest old in Sweden. Research on Aging, 24, 528–547. doi:10.1177/0164027502245002
- Stebbins, R.A., (1982). Serious leisure: A conceptual statement. The Pacific Sociological Review, 25, 251–272. doi:10.2307/1388726
- Stebbins, R.A., (1992). Amateurs, professionals, and serious leisure. Montreal: McGill-Queen's University Press.
- Stebbins, R.A., (1998, September). Serious leisure for people with disabilities. Paper presented at the Leisure Education and Recreation Association Commission of Education, Jerusalem, Israel.
- Stebbins, R.A., (1999). Educating for serious leisure: Leisure education in theory and practice. World Leisure & Recreation, 41(4), 14–19.
- Stebbins, R.A., (2000). Serious leisure for people with disabilities. In A. Sivan and H. Ruskin (Eds.), Leisure education, community development and populations with special needs (pp. 101–108). New York: CABI Publishing.
- Stebbins, R.A., (2007). Serious leisure: A perspective for our time. New Brunswick, NJ: Transaction Publishers.
- Tabachnick, B.G. and Fidell, L.S., (2007). Using multivariate statistics. Boston: Pearson education.

- The WHOQOL Group., (1998). Development of the World Health Organization WHOQOL-BREF Quality of Life Assessment. Psychological Medicine, 28, 551–558.