



Research article

The relationship between serious leisure and recreation specialization in sportspeople with and without physical disabilities

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ABSTRACT

This study analyzes whether the relationship between serious leisure and recreation specialization differs for federated sportspeople with and without physical disabilities. Sportspeople with and without physical disabilities in the Basque Country (Spain) ($n = 370$) completed a questionnaire assessing the component dimensions of two constructs, “serious leisure” and “recreation specialization”. The Serious Leisure Inventory and Measure (SLIM) and the Recreation Specialization Index (RSI) were used in the analysis. Results showed an association between these concepts in competitive sports in both samples. However, the magnitudes of association between the total of both concepts were higher in the group with physical disabilities. Regarding perceptions about their sports practice, the group without physical disabilities showed higher levels of specialization but there were no substantial differences between their levels of serious leisure participation. In conclusion, seriousness and specialization were found to be key issues for sportspeople's practice of leisure, regardless of their physical condition.

1. Introduction

The theoretical concepts “serious leisure” and “recreation specialization” have emerged in contemporary research in social sciences in recent decades. They have focused on complex leisure activities which significantly influence different aspects of people's lives (Liu, 2012). These activities require a combination of abilities, knowledge, and experience (Lee and Scott, 2013) to explore their various, highly inter-related facets in a fulfilling way (Stebbins, 2005). “Serious leisure is the systematic pursuit of an amateur, hobbyist, or volunteer core activity that is highly substantial, interesting, and fulfilling and where, in the typical case, participants find a career in acquiring and expressing a combination of its special skills, knowledge, and experience” (Stebbins, 1992, p. 3).

A greater involvement with and commitment to the discipline often leads toward a greater level of specialization, together with improvement and a better understanding (Stebbins, 1992) of the perceived benefits derived from the practice (Cheng and Tsaur, 2012). The adjective ‘serious’ relates to qualities such as ‘sincerity, importance, or care’ (Elkington and Stebbins, 2014). In this type of leisure activity, a specific relationship is established between the person and the activity which shows how important and central leisure practices can become for

people. Serious leisure is defined by six characteristics or qualities (Elkington and Stebbins, 2014; Stebbins 2001, 2007): (a) perseverance, (b) personal effort, (c) unique ethos, (d) leisure career, (e) durable benefits, and (f) identification with the pursuit (see Table 2 for a description of each quality). These qualities distinguish serious leisure practices from other activities. As Stebbins (2008) suggested, all these qualities must be examined when studying any leisure activity, as it is not always apparent whether an activity is a serious leisure activity.

Recreation specialization (Bryan, 1977) is a construct that describes the variation in experiences, aspiration, commitment, relationships, and/or economic investment related to a leisure practice, segmenting participants into differentiated groups (Salz et al., 2001) within the same leisure practice (Jett et al., 2009). Recreation specialization is a continuum of behavior ranging from the general to the particular which is reflected in the equipment used and skills developed through a particular leisure practice. Participants are located on a continuum that ranges from the minimum interest in participation to the maximum specialization and high involvement in recreational practice (Bryan, 1977). Each level of specialization involves particular behaviors and equipment (Bryan, 2000). People progress through different stages of development, engaging in increasingly specialized behaviors and changing their types

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of engagement with recreational activities. In this respect, specialized people have different needs than beginners. As the level of specialization increases, participants become more exclusive in their preferences and more dependent on their leisure practice (Weekley, 2002).

Specialization is part of the process of engaging in higher levels serious leisure (Stebbins, 2005, 2007, 2012); in consequence, the theory of specialization contributes to the understanding of the construct “serious leisure” (Scott, 2012). When participants engage in any leisure activity, through continued participation, they will gain a high level of skills, knowledge, and experience, namely, higher levels of serious leisure that lead to a more advanced level of recreation specialization (Tsaour and Liang, 2008).

Several studies have found an association between the two constructs when analyzing them together in the context of various leisure practices (Lee and Scott, 2013; Tsaour and Liang, 2008; Yang, 2011). Some authors have shown this complementarity in specific sports practices such as volleyball and softball (Liu et al., 2013; Liu, 2012), motorcycling (Cheng and Shih, 2013), scuba diving (Liu et al., 2012), and tennis (Tsai, 2018).

Given the level of social and psychological benefits provided by sports (Chalip et al., 1984; Eime et al., 2013; Kang et al., 2017), previous studies have investigated various sports practices in specific demographics and used the serious leisure framework to apply to people with physical disabilities (Hutzler et al., 2016), women (Kang et al., 2017), and elderly individuals (Park et al., 2016). The specialization framework itself has been employed on people with disabilities (Freudenberg and Arlinghaus, 2009), women (Nourbakhsh, 2008), and elderly individuals (Ricciardo, 2004). However, no relevant studies have been conducted on these two constructs regarding sports practices and comparing different social groups. This study analyzes the component dimensions of both constructs for two social groups, and the results were then used to identify

differences between the groups in terms of seriousness and specialization in sports practice.

This study analyzes whether the relationship between serious leisure and specialization differs for sportspeople who are members of a federation with and without physical disabilities. The hypotheses to be tested are: (H1) A positive relationship exists between serious leisure and recreation specialization, and this relationship will be stronger among the group of sportspeople with physical disabilities. (H2) The group with physical disabilities will show higher levels of both serious leisure and specialization regarding sports practice after controlling for the effects of demographic differences between the groups.

2. Materials and methods

2.1. Participants

The study population included amateur sports federation members living in the Basque Country (Spain). This was aimed at including sportspeople with and without physical disabilities for comparison purposes. The sample was composed of 370 sportspeople, 138 of whom had physical disabilities (G_d) and 232 of whom did not have any disabilities (G_n). Table 1 contains a description of the sample.

2.2. Study design

Researchers contacted university sports clubs to recruit sportspeople without disabilities. Some sportspeople were also contacted directly. In both cases convenience-based sampling was used. In order to identify sportspeople with a physical disability, contact was initially made with the relevant disabled sports federations, which in turn enabled researchers to reach both club members and sportspeople competing unattached, thus accessing the study universe for the specified geographical

Table 1. Characterization variables of sportspeople with physical disabilities (G_d) and without physical disabilities (G_n).

		Total		G_d		G_n		χ^2	p
		N	n	%	n	%			
Gender	Male	254	119	86.2	135	58.2	31.62	<.001	
	Female	116	19	13.8	97	41.8			
Age	Between 16 and 20 years old	95	9	7.1	86	37.1	174.21	<.001	
	Between 21 and 25 years old	87	8	6.3	79	34.1			
	Between 26 and 30 years old	52	9	7.1	43	18.5			
	More than 31 years old	125	101	79.5	24	10.3			
Level of education	Without formal education	23	21	15.9	2	0.9	97.26	<.001	
	Primary education	22	20	15.2	2	0.9			
	General certificate education	64	23	17.4	41	17.7			
	Vocational education	94	40	30.3	54	23.3			
	Bachelor's degree	150	20	15.2	130	56.0			
	Master's degree/doctorate	8	5	3.8	3	1.3			
Employment status	Pre/retired	23	20	15.2	3	1.3	136.18	<.001	
	Disability pension	26	26	19.7	0	0.0			
	Unemployed	29	11	8.3	18	7.8			
	Student	156	11	8.3	145	62.5			
	Employed	123	57	45.6	66	28.4			
Sport type	Individual	96	50	36.2	46	19.8	140.54	<.001	
	Team	219	34	24.6	185	79.7			
	Individual/doubles	55	54	39.1	1	0.4			
Duration of practice	≤4 years	95	59	44.7	36	15.5	37.14	<.001	
	>4 years	269	73	55.3	196	84.5			
Frequency of practice	<4 h/week	83	54	41.2	29	12.5	39.16	<.001	
	≥4 h/week	280	77	58.8	203	87.5			

χ^2 = Chi-squared; p = significance value.

area. Literature suggests that sportspeople with physical disabilities have a higher motivation to play sports and a greater commitment to serious leisure, including an enhanced identity and a sense of freedom, power, and confidence (Jessup et al., 2010). In both groups, participants were members of a sports federation. Contact with them was made in 2015–2016 (either in person or by email). The studies involving human participants were reviewed and approved by Ethics Committee of the University of Deusto. For this study, written informed consent was obtained from the participants in compliance with the principles in the Declaration of Helsinki. Participants were provided with information about the characteristics and objectives of the study and the confidential treatment of their data. Parental consent was obtained for participants aged <18 years. Participants were then asked to answer a questionnaire. This could be in either paper or online format. In the case of G_d, this could not be done on paper because of mobility problems, and a paper format was only used for G_n. They were also informed that they could withdraw from the study whenever they wanted. Data collection was performed over an 8-month period.

Nobody was rejected for the study, but some responses were discarded because of incomplete data that would have precluded meaningful statistical analyses in 11 cases (4.7% of all contacted participants).

2.3. Instruments

An ad hoc questionnaire was designed which included sociodemographic identification variables (age, sex, studies, employment status, and presence or absence of physical disability) and sports activity (type of sport, duration of practice, and frequency). Additionally, two standardized tools were used in the evaluation of leisure-related variables.

2.3.1. Serious leisure

This construct was evaluated and measured using the Serious Leisure Inventory and Measure (SLIM) (Gould et al., 2008). This tool consists of 18 ‘dimensions’ derived from the six distinguishing ‘characteristics’ of serious leisure (see Table 2). Each dimension is in turn composed of three items. The items are formulated on a 5-point Likert scale (ranging from 1, meaning “totally disagree” to 5, meaning “totally agree”). A higher score indicates higher levels of serious leisure. Based on the 18 dimensions, the leading author of the instrument (Gould et al., 2011) derived two composite indexes called the ‘measure’ and ‘inventory’. The measure index combines six of the dimensions: perseverance, effort, progress and contingencies, unique ethos and identification; reflecting, from them, the different levels of seriousness that can be manifested by the population. The inventory index combines the 12 durable benefits dimensions (see

Table 2. Serious leisure characteristics and dimensions evaluated by the SLIM.

Serious leisure characteristic	Dimension	Description	α
Perseverance	<i>Perseverance</i>	The need to persevere through adversity in the serious pursuit of a goal-directed behavior over time.	.79
Personal effort	<i>Effort</i>	Based on acquiring knowledge, training or skill.	.76
Leisure career	<i>Progress</i>	This reflects a continuum of changing patterns related to skills, knowledge and ability.	.83
	<i>Contingencies</i>	This reflects a serious pursuit that is shaped by its own special contingencies, turning points, and stages of achievement or involvement.	.77
Durable benefits	<i>Enrichment</i>	The process of increasing one's intellectual or spiritual resources.	.84
	<i>Actualization</i>	The full use and realization of one's talents, capacities and potential in the pursuit.	.75
	<i>Expression-abilities</i>	Expressing skills, abilities and knowledge developed from serious participation.	.78
	<i>Expression individual</i>	The expression of one's own individuality or personality.	.74
	<i>Image</i>	An individual's concept of self, or of one's role.	.84
	<i>Satisfaction</i>	The act of satisfying one's own desires in a way that is profound and deeply fulfilling.	.82
	<i>Enjoyment</i>	The act of satisfying one's own desires in a way that is enjoyable and fun.	.69
	<i>Re-creation</i>	The process of renewing or regenerating one's self through serious leisure participation.	.82
	<i>Financial return</i>	The pursuer receives remuneration for products or expertise resulting from serious participation.	.82
	<i>Social attraction</i>	Participation in, and association with, a serious leisure social world.	.68
Group accomplishment	<i>Group accomplishment</i>	The participant develops a sense of helping, being needed and being altruistic from participation in group efforts to accomplish a serious leisure goal.	.79
	<i>Group maintenance</i>	The participant develops a sense of helping, being needed and being altruistic from efforts to ensure that the serious leisure group is maintained, continues to develop and that it remains a cohesive unit	.83
Unique ethos	<i>Unique ethos</i>	The existence of distinguishing ideals, values or sentiments that are shared by members of a serious leisure social world.	.82
Identity	<i>Identity</i>	A distinguishing condition of sameness of an individual with a pursuit.	.76

α = Internal consistency, Cronbach's alpha.

Table 2). Unlike the measure index, the inventory index is not considered to be a cumulative indication of the level of serious leisure, but rather a quantitative inventory of results that vary according to the level of involvement and progress in the practices performed (Gould et al., 2011). Following Gould et al., each of the two composite indexes is calculated by summing the coded responses of the items representing the relevant dimensions, followed by rescaling to a standardised range. The Spanish adaptation of the 54-item version (Romero et al., 2017a) was used in this study. It demonstrated adequate psychometric performance, with internal consistency coefficients ranging from .68 to .84. **Table 2** presents the component dimensions of the SLIM and the internal consistency achieved for each of them.

2.3.2. Recreation specialization

This was evaluated by the Spanish-language adaptation (Romero et al., 2017b) of the Recreation Specialization Index (RSI) (Salz et al., 2001). This index consists of four items, derived from four characteristics related to specialization (orientation, experiences, relationships, and commitment). Each item has four response options, corresponding to the four levels of specialization. These options consist of statements that describe the relationship of each participant with their sports practice, with the options going from less specialized (coded 1) to more specialized (coded 4). The instrument generated a composite rating index, so a higher score would indicate a higher level of recreation specialization. The internal consistency was .70 in the original study (Salz et al., 2001) and .68 in the study outlined here.

2.4. Analytical strategy

For a more intuitive understanding of the index scores obtained from both measurement instruments, a decimal transformation of the scores was performed. To do this, the items were added together: taking as an example the perseverance dimension of SLIM which is composed of three items and the possible scores would range from a minimum of 3 to a

maximum of 15. To obtain the decimal scale we have proceeded as follows: $(\sum x_i - 3) * 10/15$.

To test H1, a Spearman correlation analysis was conducted on the component dimensions and on the general indexes of the tools for both groups under study. Additionally, differences between the two groups were calculated regarding independent effect $-r_{Gd}$ vs r_{Gn} — for each dimension; the significance of these differences was assessed using Fisher's Z_r (Steiger, 1980) and Preacher's (2002) application in this case. For testing H2, since the groups were not equivalent with respect to the sociodemographic variables (Table 1), analyses of covariance (ANCOVAs) were used to compare group means of SLIM and RSI indexes and subscale scores, while controlling for the effects of the sociodemographic variables.

SPSS statistical software (version 22.0) was used for all data entry and analysis, and Preacher's (2002) application was employed in some analyses. The value of p used to define statistical significance was $p < .05$.

3. Results

3.1. Socio-demographic characteristics

The chi-square test showed significant differences in sociodemographic variables (see Table 1). This needs to be borne in mind when reviewing the relationships between the concepts and the differences between the groups. Most of the sportspeople with physical disabilities were aged >31 years old, whereas most sportspeople without disabilities were aged between 16 and 20 years old. The level of education was higher among sportspeople without disabilities, although it should be noted that most of them were students at the time of data collection, which is characteristic of their age. Additionally, the sportspeople with disabilities included in the sample had a higher employment rate.

As for their sporting characteristics, there was a preponderance of team sports in the group without physical disabilities—basketball, rugby, handball, hockey, and football—compared to mostly individual and/or doubles sports for sportspeople with physical disabilities—athletics,

Table 3. Spearman Correlation between the SLIM's dimensions and the RSI's dimensions.

SLIM's dimensions	RSI dimensions														
	Orientation			Experience			Relationships			Commitment			RSI Total		
	G _d	G _n	p	G _d	G _n	p	G _d	G _n	p	G _d	G _n	p	G _d	G _n	p
Perseverance	.27	.27	.999	.09	.15	.574	.22	.09	.218	.30	.11	.066	.30	.23	.487
Effort	.35	.18	.090	.23	.07	.130	.13	-.06	.078	.30	.17	.203	.33	.14	.062
Progress	.21	.18	.773	.15	.09	.574	.20	.16	.703	.25	.01	.023	.27	.16	.287
Contingencies	.25	.11	.181	.12	.09	.779	.16	.10	.573	.26	.06	.057	.26	.13	.212
Personal enrichment	.26	.22	.695	.05	.08	.781	.13	.18	.636	.15	.04	.305	.19	.19	.999
Self-Actualization	.36	.27	.356	.18	.29	.282	.11	.10	.925	.39	.11	.005	.35	.30	.606
Self-Exp-Hab	.41	.30	.245	.09	.25	.127	.07	.14	.514	.21	.19	.847	.26	.33	.479
Self-Exp-Ind	.29	.17	.242	.18	.16	.849	-.12	-.04	.457	.16	.26	.334	.18	.22	.700
Self-Image	.13	.03	.353	.09	.14	.640	.02	-.18	.062	.18	.04	.190	.14	.03	.306
Self-Satisfaction	.29	.21	.431	.10	.10	.999	.07	.15	.455	.30	.04	.013	.25	.18	.498
Self-Enjoyment	.33	.07	.011	.09	.03	.578	.11	.13	.851	.30	.02	.007	.27	.09	.085
Re-creation	.24	.14	.338	.09	.10	.925	.23	-.02	.019	.23	.00	.030	.26	.09	.105
Financial return	.11	.07	.710	.29	.06	.027	.20	-.06	.015	.10	.19	.396	.24	.10	.183
Group attraction	.21	.16	.633	.06	.09	.780	.05	.09	.711	.26	.09	.105	.14	.16	.850
Group accomplishment	.39	.15	.016	.12	.06	.577	.14	.18	.705	.22	.07	.157	.30	.16	.172
Group maintenance	.24	.15	.388	-.07	.15	.041	.22	.17	.631	.06	.10	.710	.14	.21	.505
Unique ethos	.20	.13	.507	-.02	.13	.164	.31	.12	.065	.16	.04	.263	.20	.15	.634
Identity	.49	.39	.252	.39	.27	.213	.18	.14	.705	.44	.38	.505	.51	.42	.289
SLIM Measure index	.47	.30	.064	.26	.18	.438	.32	.13	.064	.45	.18	.005	.50	.30	.027
SLIM Inventory index	.44	.27	.071	.18	.21	.773	.17	.11	.572	.33	.18	.138	.37	.30	.467

Note – In bold, statistically significant correlations ($p \leq .05$). For correlations greater than $r > .20$, $p < .01$.

mountaineering, Olympic shooting, and slalom. A majority of both groups had been practicing their sport for >4 years and usually trained >4 h a week.

3.2. Relationship between serious leisure and recreation specialization

Table 3 shows measures of association between the dimensions of the SLIM —serious leisure—and the RSI —recreation specialization—both for the group of sportspeople with disabilities (G_d) and for the sportspeople without physical disabilities (G_n), along with their respective index scores. The probability value (p) is also provided.

Generally, the magnitudes of the correlations between the dimensions of serious leisure and recreation specialization were higher in the group of sportspeople with physical disabilities (G_d) compared to the group without physical disabilities (G_n). Only a few cases showed statistically significant differences between the two groups (e.g., association between the SLIM's "enjoyment" dimension and the RSI's "orientation" dimension: rG_d = .33, rG_n = .07, p = .011).

Following the overall analysis, two of the dimensions of the RSI ("orientation" and "commitment") presented a larger number of significant associations with the SLIM dimensions and scored higher among sportspeople with physical disabilities. The SLIM dimensions that displayed the strongest relationship with the total index of the RSI were "identity" (rG_d = .51, rG_n = .42, p = .289), "actualization" (rG_d = .35, rG_n = .30, p = .606), "effort" (rG_d = .33, rG_n = .14, p = .062), "perseverance" (rG_d = .30, rG_n = .23, p = .487), "express abilities" (rG_d = .26, rG_n = .33,

p = .479), and "group accomplishments" (rG_d = .30, rG_n = .16, p = .172). The SLIM measure index was significantly associated with the four sub-dimensions of the RSI and the RSI index, for both groups of sportspeople, and the inventory index was significantly associated with three of the four subdimensions ("orientation", "experience", and "commitment") and the RSI index as well.

Regarding the total indicators for serious leisure and recreation specialization, moderate associations were found that were statistically significant. In the case of the measure vs. specialization model, there was a statistically significant difference in the magnitude of the association detected in the groups of sportspeople (rG_d = .50, rG_n = .30, p = .027), although this was not the case for the inventory model (rG_d = .37, rG_n = .30, p = .467).

3.3. Difference between serious leisure and recreation specialization in sportspeople with and without physical disabilities

Table 4 outlines the comparison of means, which shows the different perceptions of both population groups. Table 4 also shows the results of the ANCOVA F-tests for our main factor, the type or group of sportspeople, corrected for the effects of the sociodemographic variables (FG), and the respective p-values and effect sizes - Cohen's d coefficients derived from the transformation of the values of semipartial eta squared output from analysis.

Concerning the RSI, once the effect (F_G) of covariates has been controlled for, only in two dimensions has the effect been statistically

Table 4. SLIM and RSI sub-scales in both groups: Means and effect size comparison.

	Total (n = 370)		G _d (n = 138)		G _n (n = 232)		Group Effect [§]		
	M	SD	M	SD	M	SD	F _G	p	d
RSI*									
Orientation	6.00	1.66	5.60	1.92	6.26	1.43	4.07	.044	.22
Experience	5.19	1.93	4.98	2.06	5.31	1.84	9.84	.002	.34
Relationships	6.45	1.53	6.00	1.61	6.71	1.41	2.54	.112	.17
Commitment	5.45	1.66	5.36	1.83	5.50	1.55	0.21	.650	.06
RSI total	5.46	1.45	5.23	1.65	5.60	1.30	8.46	.004	.31
SLIM*									
Perseverance	7.95	1.91	8.17	1.84	7.82	1.95	0.54	.464	.09
Effort	7.66	1.91	8.01	2.01	7.46	1.83	5.52	.019	.26
Progress	8.54	1.78	8.46	1.84	8.58	1.74	1.25	.264	.13
Contingencies	7.17	2.10	6.93	2.46	7.31	1.84	3.76	.053	.21
Personal enrichment	7.87	2.27	7.61	2.59	8.03	2.05	4.30	.039	.22
Self-Actualization	7.25	1.80	7.29	2.08	7.23	1.62	0.07	.795	.02
Self-Exp-Hab	7.11	1.91	7.31	2.04	6.99	1.83	0.93	.337	.11
Self-Exp-Ind	5.62	2.32	5.64	2.61	5.61	2.14	0.86	.354	.11
Self-Image	6.11	2.39	6.11	2.79	6.11	2.12	2.31	.130	.17
Self-Satisfaction	7.74	1.91	7.75	1.98	7.73	1.87	0.24	.625	.06
Self-Enjoyment	8.61	1.65	8.56	1.60	8.64	1.67	0.01	.945	.00
Re-creation	7.45	1.99	7.07	2.21	7.68	1.82	4.43	.036	.23
Financial return	2.17	2.94	1.64	2.64	2.49	3.07	0.12	.733	.02
Group attraction	7.31	1.85	8.00	1.88	6.90	1.71	2.91	.089	.18
Group accomplishment	7.85	2.12	7.68	2.23	7.96	2.05	2.26	.133	.17
Group maintenance	7.75	2.23	7.63	2.46	7.82	2.09	0.38	.539	.06
Unique ethos	7.14	2.09	6.98	2.56	7.23	1.76	0.04	.844	.01
Identity	6.55	2.20	6.38	2.61	6.66	1.91	1.89	.170	.14
SLIM measure index	7.50	1.34	7.48	1.40	7.51	1.31	0.19	.668	.06
SLIM inventory index	6.90	1.23	6.85	1.36	6.93	1.15	0.83	.363	.09

M = Mean; S.D. = Standard Deviation; F_G = F-statistic for the effect of group (Group variable); p = significance value; d = Cohen's d coefficients derived from the values of semipartial eta square.

* All indexes spanning from 0 to 10.

§ Corrected for the effects of the sociodemographic factors (see Table 1).

significant. As for the total specialization index, the differences observed were also significant ($p = .004$, $d = .31$); additionally, a higher degree of agreement in specialization was observed in the group without disabilities ($M_n = 5.60$ vs $M_d = 5.23$). Note that the effect size of the corrected model is moderately high (.61), while that of the group is moderately low (.31); however, the effect size of the group is practically half that obtained by the set of variables.

Regarding the SLIM, a statistically significant difference between the groups has been observed in only three cases: Effort ($M_n = 7.46$ vs $M_d = 8.01$, $p = .019$, $d = .26$), Personal Enrichment ($M_n = 8.03$ vs $M_d = 7.61$, $p = .039$, $d = .22$) and Re-creation ($M_n = 7.68$ vs $M_d = 7.07$, $p = .036$, $d = .23$). As to the general SLIM indexes, no statistically significant differences were found between the two groups.

4. Discussion

There are several studies that have shown the existence of a relationship between serious leisure and recreation specialization in specific sports practices (Cheng and Shih, 2013; Liu et al., 2012, 2013; Tsai, 2018). The uniqueness of this study lies in determining whether there is also a relationship between these two constructs in “competitive” sports practices and among different social groups which in this case were sportspeople with and without physical disabilities. The transitional nature of serious leisure and recreation specialization requires studying them in diverse social and personal contexts, various sports practices, and different social groups (Romero, 2016).

Regarding the analysis of the relationship between serious leisure and recreation specialization, results showed that there was a significant association between both concepts. This correlation was notable in both the measure and inventory models, considering the average effect size in the social sciences (Richard et al., 2003). Moreover, correlations were higher in people with physical disabilities in both the component dimensions and the indicators of the constructs. Therefore, the hypothesis that there was a relationship between serious leisure and recreation specialization, which was higher in G_d than in G_n , was confirmed. These results corroborated the explanation provided by Stebbins (2007) that specialization is part of the seriousness process and that the notion of specialization contributes to the understanding of the construct of serious leisure (Scott, 2012). Serious leisure is a continuous concept, a continuum; it is not a static construct (Stebbins, 2007), because the experience of sportspeople reflects their circumstances. As sports practice evolves with the person, changing one's experiences, it is also essential to study these practices from the perspective of the continuum of specialization (Bryan, 1977). The strong identity of sportspeople with their sport was also seen to be important. This dimension of the SLIM was significant and showed relationships in all the dimensions of the RSI for both population groups. As Stebbins (2007) explained, identity works as a characteristic that encompasses the other elements that define serious leisure, where participants in serious practices tend to identify deeply with the activities they perform.

Concerning the comparison among groups, in the case of the RSI it was observed that people without disabilities are more invested in the sport they engage in and attach more importance to the relationships obtained from it. Additionally, corroborating the results obtained in the individual dimensions, this group also showed higher scores in the general specialization index. As explained above, the diversity of participants in the same leisure practice can be distinguished based on the different orientations, experiences, relationships, and commitment developed toward it (Bryan, 1977; Jett et al., 2009).

As for the SLIM, three dimensions showed significant differences between the two groups: “effort”, “personal enrichment” and “re-creation”. Sportspeople with physical disabilities had higher scores in the perception of “effort” in their particular sport. The social tendency toward sedentary behavior and loneliness was seen as an important threat to sports practice. This tendency was found to be even greater in the group with physical disabilities: their difficulties with moving around and the amenities

available at home may lead them to neglect both social contact and physical activity (Romero et al., 2014). Consequently, the effort regarding their sport and the influence of their peers were greater in sportspeople with physical disabilities. In contrast, the other two dimensions that showed significant results, “personal enrichment” and “re-creation”, were valued more highly by the group without disabilities. These results indicated that this group had higher scores for recreation, which is related to the sense of renewal or regeneration through sports participation (Gould et al., 2008; Stebbins, 2001).

Concerning the SLIM measure and inventory models, no statistical differences were observed, which indicates that sporting activities constitute serious leisure for both groups. The hypothesis that the group with disabilities exhibit a higher degree of specialization and a higher level of serious leisure was not corroborated, since sportspeople without physical disabilities showed greater specialization. Additionally, the level of serious leisure regarding their sport, as analyzed in the SLIM, few variables differed between the samples. These results indicate that sports competition constitutes serious leisure for practitioners, regardless of their physical condition. Moreover, this construct may be a distinctive quality of sportspeople who are members of federations, whether they have physical disabilities or not. Serious leisure is an intrinsic feature of people who engage in leisure practice (Tsaour and Liang, 2008). The involvement in a sport to acquire the skills and abilities that the practice itself requires (Stebbins 1992) is inherent and independent of the physical condition of the people who practice it.

There was one primary limitation in this study. It was found that the sociodemographic profile of the groups studied (sportspeople with and without disabilities) differed from each other in key aspects such as the type of sports they engaged in and the duration and frequency of their sports practice. ANCOVA has been used to control for the effects of these variables and to isolate the specific effect of the group of sportspeople. The analyses reflect that in some contrasts the effect of the corrected model was significant showing an influence of the set of variables and showing that the sociodemographic variables also have an effect on the results in the SRI and in the SLIM. Given that there is not much evidence in the literature addressing the differences between athletes with and without disabilities in the expression of serious leisure and specialized recreation, our purpose has been exploratory. This is why, in addition to the composite indices of both constructs, the theoretical dimensions of these constructs have been explored. This procedure has led us to another limitation and that is having to carry out 25 hypothesis contrasts and, with it, the probability of finding false positives due to chance. This, without a doubt, should lead us to be cautious in interpreting the results found. Nevertheless, we believe that these findings, with which they will be carried out in the future, will allow us to establish a line of research that has not been addressed until now.

5. Conclusions

The results of the study showed that, while differences were found between both groups regarding the different dimensions of the two constructs (for example, that sportspeople with physical disabilities showed greater effort or that sportspeople without any disabilities had greater re-creation); in general terms, there was an association between serious leisure and recreation specialization in both groups. This association was higher among sportspeople with physical disabilities, who showed greater attachment to their sport. This leads to the conclusion that the dimensions that form the construct of serious leisure and recreation specialization can be combined to provide a more complete measurement and explanation of participation in leisure activities (Lee and Scott, 2013). The research and development of the recreation specialization theory contributes to the understanding of the serious leisure construct (Scott, 2012), as it represents a process that entails a progression in behavior, skill, and commitment (Scott and Schafer, 2001).

Stebbins (2012) argued that an important component of the serious leisure practices is the tendency toward specialization, as measured by Bryan (1977). The importance of this research lies in the analysis of this

relationship within a sample with diverse sets of sportspeople who engaged in different federated sports. Therefore, despite the physical condition and competitive nature of these practices, the levels of serious leisure and specialization are key issues in sportspeople's experience and practice, which opens up a field of study in this specific area. This could contribute to a better understanding of competitive sport practices based on leisure-related theories and to expanding comparative studies among different social groups.

Declarations

Author contribution statement

I. Iraurgi, S. Romero: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

A. Madariaga: Conceived and designed the experiments; Contributed reagents, materials, analysis tools or data; Wrote the paper.

D. Araujo: Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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Data will be made available on request.

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The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

References

- Bryan, H., 1977. Leisure value systems and recreation specialization: the case of trout fishermen. *J. Leisure Res.* 9, 174–187.
- Bryan, H., 2000. Recreation specialization revisited. *J. Leisure Res.* 32 (1), 18–21.
- Chalip, L., Csikszentmihalyi, M., Kleiber, D., Larson, R., 1984. Variations of experience in formal and informal sport. *Res. Q. Exerc. Sport* 55 (2), 109–116.
- Chen, L.S., Shih, M.H., 2013. The Study on the Correlation between Serious Leisure, Recreation Involvement and Recreation Specialization. Using Honda Club Members as an Example. *Business and Information*. Retrieved from: <http://asiair.asia.edu.tw/1/r/handle/310904400/38955>.
- Cheng, T.M., Tsauro, S.H., 2012. The relationship between serious leisure characteristics and recreation involvement: a case study of Taiwan's surfing activities. *Leisure Stud.* 31 (1), 53–68.
- Eime, R.M., Young, J.A., Harvey, J.T., Charity, M.J., Payne, W.R., 2013. A systematic review of the psychological and social benefits of participation in sport for children and adolescents: informing development of a conceptual model of health through sport. *Int. J. Behav. Nutr. Phy.* 10 (1), 98.
- Elkington, S., Stebbins, R.A., 2014. *The Serious Leisure Perspective: an Introduction*. Routledge, New York.
- Freudenberg, P., Arlinghaus, R., 2009. Benefits and constraints of outdoor recreation for people with physical disabilities: inferences from recreational fishing. *Leisure Sci.* 32 (1), 55–71.
- Gould, J., Moore, D., Karlin, N.J., Gaede, D.B., Walker, J., Dotterweich, A.R., 2011. Measuring serious leisure in chess: model confirmation and method bias. *Leisure Sci.* 33 (4), 332–340.
- Gould, J., Moore, D., McGuire, F., Stebbins, R., 2008. Development of the serious leisure inventory and measure. *J. Leisure Res.* 40 (1), 47–68.
- Hutzler, Y., Barda, R., Mintz, A., Hayosh, T., 2016. Reverse integration in wheelchair basketball. *J. Sport Soc. Issues* 40 (4), 338–360.
- Jessup, G.M., Cornell, E., Bundy, A.C., 2010. The treasure in leisure activities: fostering resilience in young people who are blind. *J. Vis. Impair. Blind. (JVIB)* 104 (7), 419–430.
- Jett, J.S., Thapa, B., Ko, Y.J., 2009. Recreation specialization and boater speed compliance in manatee zones. *Hum. Dimens. Wildl.* 14 (4), 278–292.
- Kang, H.Y., Kim, H.H., Choi, H.W., Lee, W.L., Lee, C.W., 2017. Relationship between leisure facilitators and serious leisure among female Korean college soccer participants. *Asian Soc. Sci.* 13 (4), 117.
- Lee, S., Scott, D., 2013. Empirical linkages between serious leisure and recreational specialization. *Hum. Dimens. Wildl.* 18 (6), 450–462.
- Liu, H.L.S., 2012. *The Relationship Among Serious Leisure, Recreation Specialization, and Place Attachment for Amateur Athletes [Dissertation]*. Oklahoma State University. Retrieved from ProQuest Dissertations & Theses Global (UMI No. 3513050).
- Liu, H.L.S., Caneday, L., Tapps, T., 2013. An exploratory study of serious leisure and lifestyle for amateur athletes. *LARNet-The Cyber J. Appl. Leisure Recreation Res.* 16 (3), 13–22.
- Liu, L.W., Huang, H.C., Chang, H.M., 2012. An investigation of involvement in serious leisure, recreation specialization, and sport tourism of diving participants in Taiwan. 2012. In: *International Conference on Innovation, Management and Technology Research (ICIMTR2012)*. Retrieved from: <http://ieeexplore.ieee.org/document/6236392/?reload=true&arnumber=6236392>.
- Nourbakhsh, T.A., 2008. *A Qualitative Exploration of Female Surfers: Recreation Specialization, Motivations, and Perspectives [Dissertation]*. California Polytechnic State University.
- Park, K.W., Lee, C.W., Kim, M.J., 2016. Effect of serious leisure experience on the leisure satisfaction among senior sport games participants. *J. Phys. Edu. Sport* 16, 584–591.
- Preacher, K.J., 2002. Calculation for the test of the difference between two independent correlation coefficients [Computer software]. Retrieved from: <http://quantpsy.org/corrttest/corrttest.htm>.
- Ricciardo, J.L., 2004. The relationship among leisure resourcefulness and recreation specialization among a sample of senior adults. In: Bricker, K., Millington, S. (Eds.), *Proceedings of the 2004 Northeastern Recreation Research Symposium*. U.S. Department of Agriculture, Forest Service, Northeastern Research Station, GTRNE-326. Newtown Square, PA, pp. 397–403.
- Richard, F.D., Bond, C.F., Juli, J., Stokes-Zoota, J.J., 2003. One hundred years of social psychology quantitatively described. *Rev. Gen. Psychol.* 7 (4), 331–363.
- Romero, S., 2016. *Ocio serio y especialización de recreación en deportistas federados. Contraste entre deportistas con y sin discapacidad [Dissertation]*. University of Deusto. Retrieved from: <https://www.educacion.gob.es/teseo/mostrarSelccion.do>.
- Romero, S., Iraurgi, I., Madariaga, A., 2017a. Valoración psicométrica de la versión española del SLIM (Serious Leisure Inventory and Measure) en contextos deportivos [Psychometric assessment of the Spanish version of SLIM (Serious Leisure Inventory and Measure) in sporting contexts]. *Rev. Psicol. Deporte* 26 (2), 63–70.
- Romero, S., Iraurgi, I., Madariaga, A., 2017b. Adaptación y valoración psicométrica del SRI (Specialization Recreation Index) en deportistas federados. *Revista Iberoamericana de Psicología del Ejercicio y el Deporte/Ibero-Am. J. Exercise and Sports Psychol.* 12 (1), 43–51.
- Romero, S., Madariaga, A., Lazzcano, I., 2014. Principales características de la práctica deportiva de los jóvenes vascos con discapacidad. In: Pérez-Serrano, G., De-Juanas-Oliva, A. (Eds.), *Educación y jóvenes en tiempos de cambio*. UNED, Madrid, pp. 485–493.
- Salz, R., Loomis, D., Finn, K., 2001. Development and Validation of a specialization Index and testing of specialization theory. *Hum. Dimens. Wildl.* 6, 239–258.
- Scott, D., Shafer, C.S., 2001. Recreation specialization. A critical look at the construct. *J. Leisure Res.* 33 (3), 357–361.
- Scott, D., 2012. Serious leisure and recreation specialization: an uneasy marriage. *Leisure Sci.* 34 (4), 366–371.
- Stebbins, R.A., 1992. *Amateurs, professionals, and serious leisure*. McGill-Queen's University Press, Montreal, QC and Kingston, ON.
- Stebbins, R.A., 2001. *New Directions in the Theory and Research of Serious Leisure*. Edwin Mellen, Lewiston, New York.
- Stebbins, R.A., 2005. *Recreational Specialization, Serious Leisure and Complex Leisure Activity*. Leisure Reflections, 8. LSA Newsletter, p. 70.
- Stebbins, R.A., 2007. *Serious Leisure: a Perspective for Our Time*. Transaction, New Brunswick.
- Stebbins, R.A., 2008. Right leisure, serious, casual or project-based. *NeuroRehabilitation* 23 (4), 335–341.
- Stebbins, R.A., 2012. Comment on Scott: recreation specialization and the CL-SL continuum. *Leisure Sci.* 34 (4), 372–374.
- Steiger, J.H., 1980. Tests for comparing elements of a correlation matrix. *Psychol. Bull.* 87, 245–251.
- Tsai, C., 2018. Case study: a study of recreational participation motivation, serious leisure and recreational specialization in tennis participants. *Adv. Manag.* 11 (1), 5–11.
- Tsauro, S., Liang, Y., 2008. Serious leisure and recreation specialization. *Leisure Sci.* 30 (4), 325–341.
- Weekley, G.A., 2002. *Recreation Specialization and the Recreation Opportunity Spectrum: a Study of Climbers [Dissertation]*. West Virginia University. Retrieved from: ProQuest Dissertations & Theses Global (UMI No. 1412162).
- Yang, C.Y., 2011. Exploring the correlation between serious leisure and recreation specialization during the role transition of food critics using addictive tendency as a moderator. *Pak. J. Statistics* 27 (5), 709–719.