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# Adaptive Sport as Serious Leisure: Do Self-Determination, Skill Level, and Leisure Constraints Matter?

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## Abstract

This study investigated the relationships among self-determination, leisure constraints, and skill levels using participants of a community-based adaptive sport program. As the therapeutic use of sports continues to grow among recreational therapists, important implications regarding the development of self-determination, the role of structural constraints, and the importance of skill levels are identified and discussed. Specifically, this study examined how those variables in adaptive sport discriminate between high serious leisure and low serious leisure participants. A total of 76 people with disabilities participated in this study. Discriminant function analysis was used to discriminate group differences between high and low serious participants based on adaptive sport characteristics. The results showed that serious leisure was significantly related to self-determination, intrapersonal constraints, structural constraints, and skill level of sport. It was found that self-determination was the strongest discriminator, followed by structural constraints. These findings are consistent with findings from the study of serious leisure among people without disabilities.

The therapeutic use of sport has received attention as a viable and effective modality to address various client needs (Dattilo, Loy, & Keeney, 2000). Kinney, Kinney and Witman (2004) found that sports were within the top 10 most frequently employed modalities in a national study of therapeutic recreation practitioners. In addition, a wide variety of therapeutic outcomes have been identified as a result of sports participation. Researchers (Montelione & Davis, 1986; Sherrill, 1986) have suggested that individuals with disabilities often view sport as a means of affirming competence as well as reifying a focus on ability rather than disability. Two important motivational forces in sport participation for people with disabilities include demonstrating skill or competence to others and bringing oneself in contact with others (Page, O'Connor, & Peterson, 2001). While individuals with disabilities are also motivated to remain fit, participation in sports is an important source of self-esteem, provides opportunities to gain feelings of self-efficacy (Taub, Blinde, & Greer, 1999) and affirms one's identity (Groff & Kleiber, 2001).

In addition, many athletes with disabilities tend to adopt a new sport for competition and exert themselves to learn new techniques, skills, and approaches in order to pursue high levels of competition (Asken, 1991). Participants in community-based adaptive sports have also reported their involvement in sport to have had a positive influence on their overall health, quality of life, quality of family life, and quality of social life (Zabriskie, Lundberg, & Groff, 2005).

There are important conceptual similarities between sport participation of individuals with disabilities and serious leisure. Serious leisure is characterized as the systematic pursuit of amateur, hobbyist, or volunteer activity that is substantial and interesting for the participants involved (Stebbins, 1992). Stebbins identified six defining characteristics of serious leisure: (a) perseverance, (b) significant

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effort, (c) career development, (d) durable benefits, (e) expression of self and identity, and (f) unique ethos. Over the last two decades, serious leisure has been examined through a variety of leisure activities such as art and science (Stebbins, 2001), bass fishing (Yoder, 1997), lifelong learning (Jones & Symon, 2001), firefighting (Yarnal & Dowler, 2002), and stamp collecting (Gelber, 1992). In addition, a diverse group of people have been included in the serious leisure research such as older golfers (Siegenthaler & O'Dell, 2003), runners (Major, 2001), masters swimmers (Hastings, Kurth, Schloder, & Cyr, 1995), volunteers (Gravelle & Larocque, 2005), adventure tourists (Kane & Zink, 2004), football fans (Gibson, Willming, & Holdnak, 2002), and individuals with disabilities (Patterson, 2000).

In serious leisure, participants are satisfied through gaining personal and social rewards such as "self-actualization by developing skills and ability, self-expression through demonstrating already developed skills and knowledge, linking with other serious leisure participants, promoting group accomplishment, and contributing to the maintenance and development of the group" (Stebbins, 2001, p. 13). Therefore, serious leisure provides a sense of belonging through membership, or identification of self through recreation activity and with a group of participants with distinct values and beliefs (Stebbins, 1992). People with disabilities also benefit through serious leisure pursuit. In Patterson's (2000) case study, people with learning disabilities, mild epilepsy, mild intellectual disabilities, and autism were able to develop enhanced levels of self-confidence, skills, and self-esteem through serious leisure.

Considering the various benefits of serious leisure participation among individuals with disabilities, Stebbins (1998) encourages its use within a leisure education curriculum. A wide variety of leisure education programming is currently used by recreational therapists and could be considerably enhanced by better understanding the beneficial characteristics of serious leisure participation. For recreational therapists to use sports to its fullest potential, as well as other modalities, therapists need to better understand the powerful potential of serious leisure participation.

Adaptive sport participation and the development of sport skills not only has the potential to become a serious leisure pursuit, but also contributes to establishing a sense of autonomy and independence for individuals with disabilities (Zabriskie et al., 2005). According to self-determination theory (Deci & Ryan, 1985, 2000; Ryan

& Deci, 2000, 2002), individuals participate in various life domains such as sports to satisfy basic psychological needs (e.g., competence, autonomy and relatedness). As people satisfy these needs through sports or leisure, they invest personal commitment to the activity, which in turn contributes to self-determination. Lee and Scott (2006) reported that individuals experience high levels of self-determination when they regard an activity as gratifying and valuable.

In addition to self-determination, it seems that consideration of one's skill level is an important factor in understanding serious leisure. Lee and Scott reported that benefits drawn from recreation activity are a function of levels of specialization (i.e., highly specialized and less specialized). Given that Stebbins' (1992) original concept of serious leisure included aspects of perseverance, effort and a "career," the development and refinement of activity skill and expertise would naturally correlate. In a study of masters swimmers, Hastings et al. (1995) provided evidence that skill level is related to serious leisure participation, reporting that personal and social rewards were more important for those participants with greater level of skills. Thus, the skill level of leisure participation may play an important role in determining serious leisure involvement.

From a conceptual standpoint, self-determination and leisure constraints could be understood as a continuum. Mannell and Kleiber (1997), for example, viewed self-determination as lack of constraints, whereas Losier, Bourque and Vallerand (1993) noted that constraints could be expressed as lack of self determination. In both views the underlying assumption is that those people who are more self-determined are better equipped to negotiate constraints to leisure participation. Leisure researchers have identified at least three factors that constrain leisure participation: (a) intrapersonal factors, (b) interpersonal factors, and (c) structural factors. According to Crawford and Godbey (1987), intrapersonal constraints involve individual psychological state and attributes, which interact with leisure preferences. Individuals face interpersonal constraints when they fail to find other individuals to participate with leisure activities. Finally, structural factors intervene between an expressed preference and actual participation. Structural constraints are typically related to resources such as time, money, transportation, or facilities.

Taken together, serious leisure, self-determination, activity skill levels, and leisure constraints have been recognized as important aspects of understanding leisure

behavior. Further understanding of how these topics affect sport participation will enlighten recreational therapists attempting to use sport as a therapeutic modality. Few studies, however, have examined the relationships among these variables, and no empirical studies have looked at their application to an adaptive sport environment. Thus, this study examined the relationships among these variables using participants of community-based adaptive sport programs. Specifically, the purpose of this study was to examine if self-determination, leisure constraints, and skill levels in sport discriminate between high and low serious leisure participants with disabilities.

## Method

### *Respondents*

The sample was composed of participants from the Adaptive Sports Center (ASC) in Crested Butte, Colorado. A packet containing a cover letter explaining the nature of the study, a consent form, a research questionnaire, and a self-addressed, stamped envelope was sent to the two hundred and forty individuals who had previously participated in one or more programs at the ASC. To ensure confidentiality, the mailing labels were affixed to envelopes by staff at the ASC. The cover letter informed potential respondents that participation in the study was voluntary. To protect anonymity, respondents were not asked to identify themselves by name on the questionnaires. Respondents were asked to mail back their responses to the ASC. Reminder postcards were also sent to all participants four weeks after the initial distribution date. The postcards encouraged those who had not responded previously to do so at their earliest convenience. A total of seventy-six surveys were returned (response rate = 33%). The sample was composed of 47 males (60.3%) and 29 females (39.7%). The subjects' ages ranged from 18 to 78 years old (mean = 42 years,  $sd = 14.1$ ). Caucasians accounted for 96.2%, and 42.3% of the respondents worked full-time. The majority of respondents had at least an undergraduate degree (57.2%). Spinal cord injury, developmental disabilities, and orthopedic-related impairment were reported by the subjects (37.5%, 31.3%, and 31.3% respectively).

### *Instrumentation*

*Serious leisure.* The dependent variable was the level of serious leisure participation. Serious leisure was measured using affective attachment, behavior consistency, and general serious leisure items. A total

of nine items using a five-point Likert scale were administered. Affective attachment and behavior consistency items used in Goff, Fick, and Oppliger's (1997) study were adapted for use in the present study since there was no instrument that was specifically designed to measure serious leisure at the time this study was conducted. Since Goff et al.'s study was concerned with runners, and this study consisted of people with disabilities, wording changes in the questions were made in order to incorporate people with disabilities. Three statements were used to measure affective attachment: (a) "I am very personally involved in the recreation programs at the Adaptive Sports Center (ASC)," (b) "Most of my interests are centered on the recreation programs at the ASC," and (c) "The most important things that happen to me involve participating in the ASC programs". Items measuring behavior consistency include: (a) "To miss a day's scheduled activity is extremely frustrating", and (b) "I would arrange or change my schedule to meet the need to participate in the ASC activity". Items for measuring general serious leisure consisted of four questions: (a) "I regularly train for the activity that I participate at the ASC", (b) "I identify myself to others as a committed participant of the ASC", (c) "I intend to be an accomplished participant in my sport/activity at the ASC", and (d) "I believe that I have potential to be skilled in the activity I learned at the ASC". These items were created under the guidance of Robert Stebbins, and they are purported to assess central characteristics of serious leisure such as strong identification and significant effort (R. Stebbins, personal communication, April 20, 2005). Cronbach's alpha for serious leisure items was .88. Based on the scores on the serious leisure items, two groups were created: high serious leisure and low serious leisure. A median value was used to split these groups into halves.

*Leisure constraints* were measured using the leisure constraint scale (Raymore, Godbey, Crawford, & von Eye, 1993). It is a 21 item questionnaire which is based on the concept that constraints of leisure should be overcome to reach participation, and individuals face three subsequent level of constraints: (a) intrapersonal, (b) interpersonal, and (c) structural. Cronbach's alphas for intrapersonal, interpersonal, and structural constraints were .57, .64, and .79 respectively.

*Skill levels of sport.* Subjects were asked to report their skill levels in a favorite sport they do with the ASC program. This question was measured in ordinal scale. Subjects' skill levels were identified as one of the

following: beginner, intermediate, and advanced.

*Self-determination.* A short version of the *Self-Determination in Sport* scale (Lundberg, Zabriskie, & Groff, under review) was used. The Self-Determination in Sport (SDIS) instrument is a 21 item Likert scale which measures need satisfaction through sports participation. The SDIS was modified from the *Basic Need Satisfaction in Work* scale (Ilardi, Leone, Kasser, & Ryan, 1993). To a limited extent, previous research designed to measure need satisfaction through sports participation has used the same approach by modifying selected questions from the work scale (Reinboth, Duda, & Ntoumanis, 2004). The short version of the SDIS is a 9 item Likert scale with three subscales relating to the psychological needs of competence, autonomy, and relatedness. Cronbach's alpha for self-determination was .72.

#### Data Analysis

Data were analyzed using both descriptive and inferential statistics. Zero-order correlation coefficients were computed and examined to identify underlying relationships among study variables. Discriminant analysis (Klecka, 1980) was used to identify those variables that discriminated respondents who were high serious leisure participants from those who were low serious leisure participants. Discriminating variables included self-determination, skill levels, and leisure constraints (3 subcomponents). A step-wise method was used to identify only those discriminating variables that were most useful in distinguishing between the two groups.

### Results

Pearson correlations coefficients showed that there were a number of statistically significant relationships among variables (see Table 1). Serious leisure was significantly positively related to self-determination and skill level of sport. That is, participants who scored high on serious leisure tended to report higher self-determination and skill level of sport. Significant negative correlations were found between serious leisure and two constraints variables (i.e., intrapersonal and structural), meaning that participants who scored high on serious leisure tended to report lower on intrapersonal and structural constraints. There was also a significantly negative correlation between intrapersonal constraints and skill level of sport, indicating that individuals experiencing high levels of

intrapersonal constraints in leisure were associated with lower skill levels in sport.

A step-wise discriminant function analysis was conducted to determine the ability to predict the group difference of serious leisure using variables of age, skill level of sport, intrapersonal constraints, interpersonal constraints, structural constraints, and self determination (see Table 2). In order to identify only those variables most useful in discrimination, Wilks' Lambda was used as the selection criterion (Klecka, 1980). The analysis generated a significant function ( $Wilks' \Lambda = .97$ ,  $\chi^2(4, N=75) = 25.664$ ,  $p < .001$ ). In addition, the canonical correlation ( $r = .551$ ) indicated that approximately 30% of the variance in the discriminant function was explained by the groups (Klecka, 1980). In other words, structural constraints, age, skill level of sports, and self-determination items accounted for about 30% of the variability in serious leisure participation.

The relative importance of each of the four variables in determining the discriminant function score can be identified by examining the absolute value of the standardized function coefficients. The product-moment correlation between each variable and the discriminant function is indicated by the structure coefficients column in Table 2 and includes all variables originally entered into the analysis. As indicated by the standardized function coefficients, the four retained items demonstrated a stronger relationship to the discriminant function than those that were excluded. In addition, while the standardized function coefficients indicate the variable's contribution to calculating the discriminant score, the analysis also takes into account the simultaneous contribution of the other variable (Lee & McCormick, 2002). Since the structure coefficients do not account for the contribution of other variables, it can be observed that self-determination and skill level of sport are more likely to discriminate the groups than the structural constraints and age. Overall, structure coefficients indicated that those who have a high serious leisure participation tend to have high self-determination and a high skill level. Furthermore, high serious leisure participants were less likely to experience structural constraints, and they tended to be younger than low serious leisure participants.

The purpose of discriminant function analysis is to identify which variables best distinguish two or more groups, while classification analysis can be used to examine the adequacy of the discriminant function. Table 3 indicates that the discriminant function, comprised of

the four significant variables above, correctly classifies 76.0% of the cases. Given that random assignment in this two group situation would result in approximately 50% correct classification, the discriminant function offers improvement. Further examination of the classification results indicates that the discriminant function is more accurate in classifying those who are high serious leisure participants (82.9% correctly classified) as opposed to those who are low serious leisure participants (67.6% correctly classified).

### Discussion

Discriminant function analysis identified self-determination and structural constraints as the most important discriminating variables for serious leisure participation (accounting for 37.4% and 28.7% of the variance in the discriminant function respectively). This finding is consistent with Lee and Scott's (2006) study that also found that self-determination was related to commitment to leisure activities.

With regard to the structural constraints, the findings of this study showed that high serious leisure participants are less likely to experience structural constraints than low serious leisure participants. Structural constraints are barriers between a desired activity and participation such as time, money, and location (Crawford, Jackson, & Godbey, 1991). One distinctive quality of serious leisure relates to the significant personal effort invested (Stebbins, 2001). When individuals invest significant effort in serious leisure, they compare the cost and reward of participating in the chosen activity. This activity becomes attractive and meaningful when individuals are able to overcome the cost. Because serious leisure participants are likely to persevere through costs, which may result from time, money, or location issues, structural constraints might not be important barriers for high serious leisure participants as opposed to the low serious leisure participants. Furthermore, skill level was significantly related to serious leisure participation, which supports Stebbins' (1992) contention that acquiring skill is one of the central components that distinguish serious leisure participants.

There are a variety of important implications in applying this research to practice. As noted previously, sports represent one of the more common modalities used by recreational therapists (Kinney et al., 2004). If recreational therapists are to use such a modality

therapeutically, better understanding of factors that enhance or inhibit beneficial participation are needed. First, considering that self-determination was an important factor in distinguishing the serious leisure participant, a deeper understanding of the role of self-determination in functioning is needed (Deci & Ryan, 1985, 2000). In this study, self-determination was a measurement of the satisfaction of psychological needs through one's sports participation. In order to further develop self-determination through sports participation, practitioners should consider how their services either contribute to or inhibit the satisfaction of competence, autonomy, and relatedness.

As the development of self-determination was an important component of serious leisure participation in this sample, some examples of how to facilitate the satisfaction of psychological needs are provided. Competence might be enhanced by assisting clients in recognizing improvements, even at minute levels. Providing opportunities for clients to gauge performance based on personal standards may also facilitate feelings of competence. Providing opportunities for clients to socialize and interact more frequently during participation may facilitate the satisfaction of relatedness. And finally, enhancing opportunities for clients to exercise choice through their participation will facilitate autonomy.

Practitioners should also be careful to avoid programmatic conditions which inhibit the satisfaction of psychological needs. A summary of self-determination research (Lundberg, 2007) shows that environments with high external demands, constant comparison between participants, too much focus on winning, a lack of teamwork, limited opportunities for decision making, and a lack of understanding for the participants' feelings, will all have detrimental effects on self-determination and the satisfaction of psychological needs.

Structural constraints were also an important discriminating factor in this study. Providing environments which reduce or eliminate environmental barriers will be critical in facilitating the benefits which come from sports participation. As adaptive sport participation occurs in the community, it may be necessary for recreational therapists to more closely evaluate potential barriers in the community such as adequate transportation, location of services, accessibility of public facilities, and prohibitive costs in terms of time or money.

Another key factor related to sports participation was skill level. Practitioners can assist

clients in developing skill and experiencing success. Skill development will be enhanced as adequate time is devoted to practicing skills within an environment where constructive feedback is provided. Recreational therapists must remember that skill levels develop slowly and that adequate time will be needed as participants make progressive steps. Another key element of skill development, which may also be associated with the self-determination need of relatedness, is the use of appropriate role models. Clients' development of skills will be enhanced when role models with a similar disability are available for encouragement and coaching.

Finally, there are a number of limitations that should be considered when interpreting the results of the study. First, this study used a measure of serious leisure that was created for the purposes of this study. Future studies should consider Gould and Stebbins' (2006) recently developed Serious Leisure Inventory and Measure. Doing so will increase confidence when explaining serious leisure. Another limitation is that the sample size in this study was relatively small with little diversity (98.7% Caucasian). It is unknown if the same results would be obtained from a larger and more diverse subject population. A final limitation is that given the low response rate, the representativeness of the sample to the population of adapted sports participants is tentative at best. Future study should consider alternative methods to collect data that may increase response rate. For example, the use of incentives as well as interviewing may aid in collecting more representative sample.

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Table 1.

Zero-order Correlation Coefficients

Variables	Mean	SD	1	2	3	4	5	6	7
1. Intrapersonal Constr.	19.17	6.44	1.00	.19	.33**	-.31**	-.00	-.23*	-.02
2. Interpersonal Constr.	18.46	4.16		1.00	.16	-.04	.17	-.16	-.02
3. Structural Constr.	26.06	4.51			1.00	-.31**	.09	-.08	-.11
4. Serious Leisure	28.09	8.22				1.00	-.19	.24*	.23*
5. Age	42.24	14.15					1.00	-.04	-.10
6. Skill Level of Sport <sup>1</sup>	-	-						1.00	-.09
7. Self Determination	52.32	5.46							1.00

Note:

<sup>1</sup>: Skill level of sport was measured in nominal scale. Mean and SD are not available.

\*  $p < .05$ ; \*\*  $p < .01$

Table 2.

Stepwise Discriminate Function Analysis of Serious Leisure

Function	Eigenvalue	% of Variance	Canonical Correlation	Wilks' $\Lambda$	$X^2$	df	p
1	0.435	100.0	.551	.697	25.664	4	>.001

Variables	Standardized Function Coefficients	Structure Coefficients
1. Structural Constraints	-.445	-.492
2. Age	-.430	-.425
3. Skill level of sports	.500	.355
4. Self Determination	.689	.611
5. Interpersonal Constraints		-.237
6. Intrapersonal Constraints		-.161

Group Centroid = Low Serious Leisure, -.715; High Serious Leisure, .593

Table 3.

Classification Results for Serious Leisure Participation

		Predicted Group	(Percent)
Actual Group	No. of Respondents	Low Serious Leisure	High Serious Leisure
Low Serious Leisure	34	23 (67.6%)	11 (32.4%)
High Serious Leisure	41	7 (17.1%)	34 (82.9%)

Percentage of groups correctly classified = 76.0%