

# **The Relationship of Adaptive Sport Participation on Sense of Community and Community**

## **Integration**

By

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April, 2019

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This study examines how the frequency and duration of adaptive sports participation relates to community integration and sense of community among recreational athletes with disabilities. Research suggests that community integration is an essential factor for positive experiences as well as a key quality of life component in the lives of people with disabilities (Dijkers, 1998; Stancliffe, Emerson, & Lakin, 2001). Similarly, sense of community in sports can lead to an increased sense of well-being and belonging, even among those with diverse backgrounds (Wolf-Wendel, Toma, & Morpew, 2001). These outcomes are critically important for people who are typically stigmatized, such as people with disabilities. According to the World Health Organization (2011), having a disability is “part of the human condition” and this population represents the “largest minority group in the United States” (Piatt & Jorgenson, 2012). While both community integration and sense of community can be products of recreation participation, little research has investigated how the constructs interact with one another. Participants of an adaptive recreational sport organization in Aspen, Colorado were invited to

complete a survey assessing (a) their seasonal adaptive recreational activities, (b) scores on the Sense of Community in Sport Scale, and (c) scores on the Community Integration Measure.

Analysis examined the relationships between adaptive sport participation, community integration, and sense of community.



**The Relationship of Adaptive Sport Participation on Sense of Community and Community  
Integration**

A Thesis

Presented to the Faculty of the Department of Recreation and Leisure Studies

East Carolina University

In Partial Fulfillment of the Requirements for the Degree

M.S. Recreation Services and Interventions

By

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April, 2019

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## INTRODUCTION

Sports are commonplace in today's society and are central to a balanced life. We play sports, spectate at sporting events, and sports provide a platform for fans or participants to "engage in certain kinds of pleasures, fulfilling their own desires" (Brummet, 2009, p. 21). Sports also reaffirm key cultural values in our society. Participation in sport should be open to everyone, yet constraints such as discrimination, lower employment levels, level of social support, and dimensions of disability limit people's degree and type of participation in sport (Darcy, Lock, & Taylor, 2017). When access to sport is stymied by any number of these constraints, those who are constrained are not able to reap the benefits of participation that other population groups experience (Driver & Bruns, 1999). Adapted sports opportunities offer an avenue to participation for people with disabilities who are otherwise limited in their participation.

Adaptive sports are any sport or recreation activities that have been altered to accommodate an individual with a disability (Lundberg, Bennett, & Smith, 2011). Adaptive sports were originally introduced as a tool to help rehabilitate injured veterans in the 20<sup>th</sup> century (Alexander, Matthews, & Murphy, 2015). Since then, adaptive sport has significantly grown and now refers to offerings provided by organizations for athletes with disabilities such as the National Wheelchair Athletic Association, the Paralympics, Disabled Sports USA, the United States Quad Rugby Association, and the International Paralympic Association. In the 2018 Paralympic Games, there were 567 participants, which was a record and a 24% increase from 2014 (Paralympic Games, 2018). Examples of adaptive recreation opportunities now include camping, hiking, fishing, hunting, dance, martial arts, music, scuba, horseback riding, swimming, archery, bowling, cycling, skiing, running, and a large variety of team sports

(Disabled Sports USA, 2018). These opportunities give these athletes and their families “a chance to embrace new life and see just how active life can be” (Goff, 2012, p. 28).

Adaptive sports also give those participants with disabilities a chance to improve their cognitive, emotional, and physical functions despite their condition. Studies have shown that participation in sport for those with disabilities may lead to happiness, closeness to others, and other emotional responses (D'Eloia & Price, 2016). These psychological improvements can enhance physical wellness and provide an overall greater well being (Milner & Kelly, 2009). Specifically, participation for those with disabilities can help them feel less isolated, have an increased sense of self-esteem, and create greater independence (Michalski, Mishna, Worthington, & Cummings, 2003; Tiemens, Beveridge, & Nicholas, 2007). Participation in these activities relates to those athletes developing a greater feeling of belonging within their community (Goodwin, Thurmeier, & Gustafson, 2004).

This study focuses on the relationship of two concepts that are informed by theory relating to community: community integration and sense of community. Community integration (CI) has been defined as “successful engagement in occupational, social, and community activities” (Dijkers, 1998, p. 1). CI is an integral part of the rehabilitation process and involves both the geographical and social community that a participant is a part of (Stumbo et al., 2015). The concept of community integration has helped move from segregated environments – those with disabilities living together and those without disabilities living together – to a more inclusive style of living for those with disabilities which includes everyone living together (Bond, Salyers, Rollins, Rapp, & Zippel, 2004). Sense of community (SOC) refers to “a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members’ needs will be met through their commitment to be together”

(McMillan & Chavis, 1986, p. 9). SOC can decrease feelings of estrangement and loneliness through a mutual relationship between an individual and their community (Pretty, Andrewes, & Collett, 1994). Both community integration and sense of community for people with disabilities have demonstrated associations with participation in adaptive sport (Goodwin et al., 2009; McVeigh, Hitzig, & Craven, 2009).

This research investigates how adaptive sport participation is linked to community integration and sense of community in adaptive sport athletes. Further, the study will explore if there is a relationship between an athlete's community integration and sense of community stemming from this participation. Community integration is the role of an active member in their community (Whiteneck, Tate, & Charlifue, 1999). Sense of community is a feeling created between members of a community through trust and commitment (McMillan & Chavis, 1986).

## LITERATURE REVIEW

### Disability

There are many dimensions of disability that each person is likely to experience at some point in their lives. Disability is a universal term that encompasses impairments, activity restrictions, and any negative aspects of the interactions between a person with a health condition and the environment they are in (World Health Organization, 2014). It is organized by the International Classification of Functioning, Disability, and Health (ICF) into sub-categories: (a) mobility and physical impairments, (b) spinal cord disabilities, (c) head injuries – brain disabilities, (d) vision disabilities, (e) hearing disabilities, (f) cognitive or learning disabilities, (g) psychological disorders, and (h) invisible disabilities. Disability is accepted across the world as an issue of public health, human rights, and development and such is something very important to understand (World Health Organization, 2014).

Since the Americans with Disabilities Act was introduced in 1990 in the United States, there have been great strides to empower those with disabilities. Among other things, the ADA prohibited discrimination against those with disabilities in the areas of employment, education, and transportation. The *Convention on the Rights of Persons with Disabilities* (CRPWD) also has reinforced disability legislation for cultural life that includes participation in recreation, leisure, the arts, sport, and tourism (Convention on the Rights of Persons with Disabilities: Item 67, 2006). Regrettably, this legislation did not successfully integrate individuals with disabilities into all organizations and the unemployment rate of those with disabilities remains much higher than people without disabilities (Louvet, 2007).

## **Sense of Community**

Sense of community in sports leads to an increased sense of well-being and belonging, even among those with diverse backgrounds (Wolf-Wendel, Toma, & Morpew, 2001). This feeling is especially important in groups that are typically stigmatized such as those with disabilities. Glynn (1981) described sense of community as behaviors within a group that are prominent and lead to community satisfaction. Sense of community has also been defined through a geographical territory (Lyon, 1987). A community of interest – such as a work place, a church, or other group who has a similar lifestyle – has also been said to give a psychological sense of community (Heller, 1989; Cochrun, 1994). Sense of community can be described as “a feeling that members have of belonging, that they matter to one another and to the group, and that their needs will be met through their commitment together” (McMillan & Chavis, 1986, p. 9). This definition presents four dimensions sense of community: (a) membership, (b) influence, (c) fulfilment of needs, and (d) shared emotional connection. The four dimensions of sense of community – membership, influence, fulfillment of needs, and shared emotional connection – are essential when trying to connect those with disabilities to their community (McMillan & Chavis, 1986). McMillan and Chavis (1986) distinguish five attributes within the dimension of membership in sense of community: (a) boundaries, (b) emotional safety, (c) identification/sense of belonging, (d) personal investment, and (e) a common symbol system. Boundaries are necessary to distinguish those in the community and those outside of the community. The boundary may be visible through geographical locations, but it also may be defined and determined by the members of the community. This attribute can bring about emotional safety. Staying within the boundaries, and within familiar places with familiar people, helps create emotional and physically stability. The third attribute of membership involves an individual

within a group feeling as though they are adequate enough to belong in that group and that they always have a space among the group. This involves a personal investment in the community. The last contributing attribute to membership is a common symbol system. This could be a logo, flag, or even language that the members of the group know and have derived a community meaning from.

The second dimension of sense of community is influence. This represents the feeling of being able to make a difference within a community, while the community may also be able to make a difference in the individual. Fulfillment of needs is the reassurance of knowing that resources in a community will meet unfilled needs. This has two components: (a) status, (b) competence (McMillan & Chavis, 1986). Status refers to the position held within the community – even simply being a part of the community. Competence refers to skills a member may have to complement the community. Status and competence represent a reciprocal relationship between the community and the community member. Shared emotional connection represents the experiences, history, and commitment that those in a community have to each other (McMillan & Chavis, 1986). Each of these dimensions come in succession to each other, with membership happening first followed by influence, fulfillment of needs, and shared emotional connection.

Goodwin et al. (2009) provided an example of sense of community in adaptive sports in a study of rugby players with quadriplegia. The researchers observed that quadriplegic rugby gave the athletes a strong sense of community as goals were created and filled for both the individuals and the group. In this case, community was defined as the players' team. The word "community" has many different meanings and can be defined as a group of individuals who share a binding cause or interest, or a group of people found within the same geographical location (Bramston, Bruggerman, & Pretty, 2002; Lloyd-Jones, 1989). Sense of community can be found in a variety

of contexts. For example, Glynn (1986) distinguished between communities of place and communities of interest. McMillan and Chavis (1986) referred to these as geographic communities and relational communities. Durkheim (1964) referred to communities of interest. For the purposes of this study, the community context is less geographical and more akin to relational communities or communities of interest.”For those with disabilities, they may seek out others with the same disability to become part of their community.

### **Sense of Community Instruments**

Sense of community has been measured by the Campus Atmosphere Scale (Clopton, 2008), the Campus Community Scale (Cheng, 2004), and the Sense of Community-2 Index (Warner, Kerwin, Walker, 2013). These scales, however, presented limitations due to the theoretical underpinnings not directly derived from empirical data asking respondents specifically about sense of community and the scales were not sport-specific (Warner, Kerwin, & Walker, 2013). As such, given the specific sport orientation of the Sense of Community in Sport Scale (SCS) was used for measuring sense of community in the present study. The SCS was derived from a comprehensive review of the literature and is comprised of 28 items, which reflect the six factors identified in that literature review. Those factors are: (a) administrative consideration, (b) common interest, (c) competition, (d) leadership, (e) equity in administrative decisions, and (f) social space. Originally this scale included a seventh factor, voluntary action, but it was a poorly performing dimension and was removed from the scale (Warner et al., 2013). Validity and reliability coefficients for this model were both acceptable (Warner et al., 2013). The one drawback of this scale is that it has not yet been used on a population with disabilities as it is relatively new.

## **Community Integration (CI)**

CI has often been considered one of the most necessary outcomes for rehabilitation (Gontovsky, Russum & Stokie, 2009; Sander, Clark & Pappadis, 2010; Sloan, Winkler & Callaway, 2004). It has been suggested that community integration is the essential factor for positive experiences as well as a key quality of life component in the lives of those with disabilities (Stancliffe, Emerson, & Lakin, 2001; Dijkers, 1998). Whiteneck et al. (1999) noted that CI involves the ability of an individual to be an active member within their community. In an individual with acquired disabilities, CI involves resuming their role in the community that they had held previously (Charlifue & Gerhart, 2004). Cummins and Lau (2003) determined the extent of community integration as their activity within a community. CI has been measured in a variety of ways, some of these include the Index of Community Involvement (Raynes, Wright, Shiell, & Pettipher, 1994) the Community Integration Questionnaire (Willer, Rosenthal, Kreutzer, Gordon, & Rempel, 1993), the Guernsey Community Participation and Leisure Assessment (Baker, 2000), or the Assimilation, Integration, Marginalization, Segregation interview (Minnes, Buell, Feldman, McColl, & McCreary, 2002).

These instruments measure community integration through frequency of activities and community contact. This definition of integration takes into account physically being present within a community; however, it lacks the facet of being socially involved that greatly influences community integration (Jacobsson & Lexell, 2016; Liss & Willer, 1990). Both the objective and subjective components of community integration are equally as important and help address multiple outcomes such as what people do, their social participation, their social mobility, and their occupational roles (Williams, Rapport, Millis, & Hanks, 2014). Cummins and Lau (2003) confirmed this distinction in their study. They demonstrated that there was a distinct difference

between community integration and community exposure, where community integration involved the social aspect of integration and had a significant positive effect on well-being while community exposure was simply physical integration, which had no effect on well-being (Cummins et al., 2003).

A broader definition of community integration that takes into account both objective and subjective components is comprised of three core dimensions: (a) social integration, (b) occupation, and (c) independent living (McColl, et al., 1998; Sander et al., 2010; Kuipers, Kendall, Amsters, Pershouse, & Schuurs, 2011). This definition is important because those with disabilities do not receive benefits from simply being exposed to a community (Sandler & Thurman, 1981). Instead, those with disabilities need to be integrated actively and in a reciprocal way in the community in order to receive the most benefits (Mittler & Mittler, 1999). This definition has been heavily influenced by initiatives within healthcare systems to increase independence and reduce disability (Reistetter, Spencer, & Trujillo, & Abreu, 2005). Community integration has also evolved to encompass the resumption of previous roles or roles that would have been given by the society within the community (Gontkovsky et al., 2009).

In the literature, community integration is most commonly linked to quality of life (Brown, Gordon, & Haddad, 2000; Huebner, Johnson, Bennett, & Schneck, 2003) as well as community factors and life satisfaction (Bramston et al., 2002; Reistetter et al., 2005). Community integration has also been linked to participation in adaptive sport for people with disabilities (Smith & Hsieh, 2017; McVeigh et al., 2009). It allows members to become more useful within their community and more independent in their everyday lives (Stumbo et al., 2015). Chun, Lundberg, McCormick, & Heo (2008) with 93 adaptive sport participants, it was shown that participation in adaptive sport programs led to connections in community integration

as well as quality of life. Although many of these links and benefits of community integration have been explored, studies have shown that there is room for further investigation about how community integration is affected through variables such as belonging, specific domains of quality of life, and sense of community (Chun, Lundberg, McCormick, & Heo, 2008; Bramston et al., 2002).

### **Community Integration Instruments**

A common measure of community integration is the Community Integration Questionnaire (Sander et al., 1999). This questionnaire is widely used and is comprised of fifteen items that measure home integration, social integration, and productivity of those with brain injuries (Sander et al., 1999). The Reintegration to Normal Living Index is also widely used for measuring community integration. This index is based on a definition of community integration from members within the community (Hitzig, Romero, Manolo, Noreau, & Craven, 2012). This index is comprised of eleven items and involves a visual scale along with paired statements. The Craig Handicap Assessment and Reporting Tool (CHART) is also used to measure community integration. This instrument is comprised of twenty-seven items that makes it significantly longer than the others, and it is based off of the community roles outlined by the International Classification of Impairments, Disabilities, and Handicaps. A strength of the CHART is that it distinguishes between levels of disability (Whiteneck, Charlifue, Gerhart, Overholser, & Richardson, 1992).

The newest measure of community integration is the Community Integration Measure. The CIM is comprised of ten items and has a client-centered focus (McColl, Davies, Carlson, Johnston, & Minnes, 2001). The CIM uses a standardized definition of community integration unlike the other measures and only requires a basic literacy level. Originally it was created for

those with traumatic brain injuries, but it is versatile and can be administered to a population with a wide variety of disability and through a variety of methods (telephone, face to face, etc.). The CIM performed better in validity and reliability tests on data from a study of ninety-one individuals than other scales measuring community integration (Reistetter et al., 2005). The CIM focuses on perceived participation and an individual's perspective of their satisfaction with the community (Griffen, Hanks, & Meachen, 2010). Reliability for this measure is a value of .87 and validity was assured in past studies with forty-one participants who all had acquired brain injuries, fifteen family members of these participants, and a separate sample of thirty-six community college students (McColl et al., 2001). The CIM was also validated in a study of ninety-seven participants who had acquired brain injuries (Nolte, 2000).

## HYPOTHESES

After this review of the literature, it was found that although sense of community and community integration were both impacted by adaptive sport participation, there was a gap in the research on how these two constructs may interact with each other. The purpose of this study was to explore if there is a relationship between sense of community and community integration due to adaptive sport participation.

**H<sub>1</sub>:** The frequency of adaptive sport participation is positively associated with a sense of community of adaptive sport athletes.

**H<sub>2</sub>:** The duration of adaptive sports participation is positively associated with a sense of community of adaptive sport athletes.

**H<sub>3</sub>:** As sense of community increases in the adaptive sport athletes, community integration also increases.

Hypotheses 1, 2, and 3 are represented in the figure below.

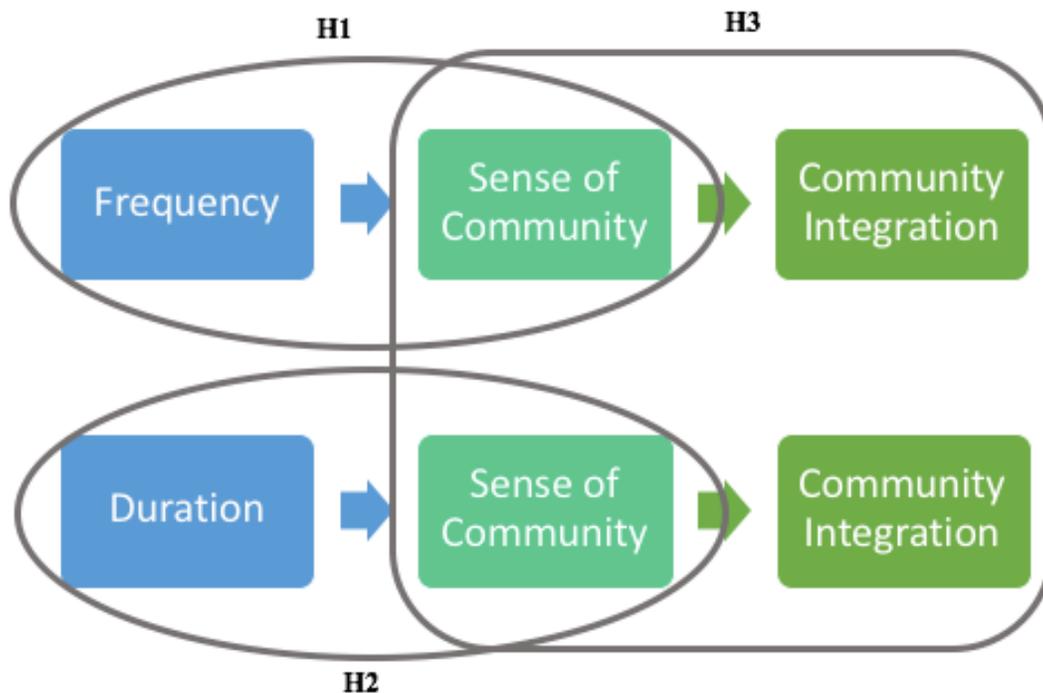


Figure A

## **METHODOLOGY**

### **Research Design**

This study was cross-sectional and correlational. The purpose was to determine to what degree the variables are related and any existing differences that might have been present. The study was unobtrusive in nature and did not cause any change on the behavior being studied. The cross-sectional design created a smaller study time by allowing the researcher to take a snapshot of the population and study multiple variables at the same time. A survey was used to assess the population. Some of the questions were qualitative in nature, however, they were assigned a quantitative designation for analysis purposes. This was done by structuring these questions as multiple choices, and then subsequently assigning each a number based on their place in the answer group.

This study was certified as exempt by the East Carolina University & Medical Center Institutional Review Board on November 8, 2018.

### **Population and Sample**

The population for this study was participants from an adaptive sport organization located in Aspen, Colorado. This organization had a total of 512 participants in the 2016-2017 year. Of the total 512 participants, 335 of these participants were non-military, while 177 were military participants from in and outside of the local community. To take part in the study, participants had to be involved with the organization's programs within the past year and have either a physical and/or cognitive disability. If they have a cognitive disability, it should be classed as mild according to the DSM-5 (American Psychiatric Association, 2013), and they should be cognitively coherent enough to fully understand and answer the questionnaire. If their cognitive

disability is rated at a higher level than this or they may not be sure what their level is, a caretaker or guardian should complete on their behalf.

The sample technique that was used was a non-probability sampling technique. The host organization sent an introductory email out to their participants introducing the study and asking anyone who was interested in participating to contact them. The researcher then received the contact information of the participants who reached out with interest. The researcher then sent an email to these potential participants with a live link to the online survey. The participants could then complete the survey at their own discretion. This process happened twice in order to increase the response rate. This process resulted in a sampling frame of 29 respondents out of the 512 potential participants. Out of these 29 respondents, there will 11 who produced usable survey data. This was a response rate of 38%.

### **Variables and Measurement**

The survey data were collected through Qualtrics. Qualtrics is an online survey software that helps create surveys, collect data, and provides tools to analyze data. The survey link was provided to anyone who replied to the introductory email from Challenge Aspen. The survey was self-reporting and included demographic questions related to age, gender, race/ethnicity, time since injury/diagnosis, and type of sport. The questionnaire included the aforementioned SCS Scale and CIM. A draft of the survey is located in Appendix C and contains the demographic questions as well as the two scales.

This study was comprised of four variables. There are two independent variables: frequency of participation and duration of participation. There are two dependent variables: sense of community and community integration. The frequency of participation was self-reported and was measured as a continuous variable. Respondents were asked, “In the summer, how many

times per week do you participate in adaptive sports?” and, “In the winter, how many times per week do you participate in adaptive sports?” The duration of adaptive sport was also self-reported and measured as a continuous variable. Study participants were asked, “on average, how many minutes do your adaptive sports sessions last?”

The first dependent variable, sense of community, was measured by the *Sense of Community in Sport* (SCS) Scale (Warner et al., 2013). This instrument can be administered face-to-face or online and can assess those with disabilities or those without disabilities. This scale includes 21 items that measure six factors. Those factors are: (a) administrative consideration, (b) common interest, (c) competition, (d) leadership, (e) equity in administrative decisions, and (f) social space. Each respondent was asked to rate how “true” each item was on a 4-point Likert-type scale. The answer choices were in qualitative form but matched with quantitative codes that range from 1, “not true at all”, to 4, “completely true”. There was no “neutral” in the responses as the only other choices are “somewhat true” and “mostly true”.

The second dependent variable, community integration, was measured by the *Community Integration Measure* (Reistetter et al., 2005). The CIM is comprised of ten items and requires a basic literary level. It can be administered to a population with a wide variety of disabling conditions and through a variety of methods such as telephone, face-to-face, or online. The CIM includes ten items with five response options each that measures three factors. The factors are: (a) social support, (b) occupation, and (c) independent living (Reistetter et al., 2005). Each respondent is asked to rate how “true” he or she thinks an item is on a five-point Likert-type scale. The answer choices are in quantitative form but are matched to quantitative codes and range from 1, “always disagree” to 5, “always agree”. There is a “neutral” response in the choices.

## Survey Distribution

The questionnaire was voluntary and was administered through Qualtrics. The host organization initially reached out to their participants to see who would be interested in participating in the survey. Once their names were collected, their contact information was supplied to the researcher. The host organization has an annual participation number of 512. The researcher then sent an email to each individual which included some introductory information about the survey as well as a live link to the survey. The participants simply had to click on the link to be taken to the Qualtrics survey. A copy of this email correspondence can be found in Appendix B. There were 29 respondents that were willing to participate in the survey. This was about 5.7% of the potential sample population. Although the researcher had direct contact to the participants, there was no way to match any participant to any survey answer. When answering the survey, there was no identifying information collected. This ensured that any participant that may not want to be affiliated with their answers was not. According to the Dillman method, first distributing the survey through the mail and then following up online through email augmentation reports the best response rate (Dillman, 2014). However, an online survey was sent only as access to email addresses were possible. There was no access to physical mailing addresses. To receive maximum response rates, the Dillman method was used for distribution and follow-up dates (Dillman, 2014).

On day one, a request to participate in a future survey was sent. This introductory email was sent on October 25, 2018. In order to improve sample size, another one of these emails was sent on December 4, 2018. This second email included the same wording as the first. Due to this, two different timelines were created for these separate occurrences which each followed the Dillman method. On day four, the survey was initially distributed through email. For the first

group this email was sent on November 12, 2018. For the second group this email was sent on December 11, 2018. On day eight, an email to remind participants to complete the survey was sent. The first group received this communication on November 16, 2018. This email was sent to the second group on December 14, 2018. On day sixteen, one more follow-up email with another copy of the survey was sent. This email was sent to the first group on November 24, 2018. This email was sent to the second group on December 22, 2018. On day twenty-one, a final email follow-up to remind participants to complete the survey was sent. This correspondence was sent to the first group on November 29, 2018. It was also sent to the second group on December 27, 2018. A letter of support from the organization was sent with the initial email correspondence to increase response rate. As previously stated, there were 512 potential participants from the host organization. After the initial emails, the sampling frame was reduced to 29 participants because this is all who responded. From this, 11 of the 29 participants produced usable survey data. This is a response rate of 38%.

### **Analysis Plan**

Descriptive statistics including mean, median, mode, and standard deviation were used to describe participants and their adaptive sports participation. Responses on the CI items and the SOC items were summarized with descriptive statistics. To determine the relationship between key variables, a correlation analysis was run to control the effect of independent variables on dependent variables and determine if there was a correlation. Alpha was set at a 0.05 a priori for statistical testing. Hypothesis one, hypothesis two, and hypothesis three were analyzed using separate correlation analyses. Hypothesis one dealt with the frequency of adaptive sports participation and its association to sense of community of the adaptive sport athletes. Hypothesis two related to the duration of adaptive sports participation and its association to sense of

community of the adaptive sport athletes. Hypothesis three described the association between sense of community and community integration.

## RESULTS

The survey had 29 respondents, which was significantly fewer than projected due to the fact that the organization had around 512 annual participants. Out of these 29 respondents, 11 produced completed, usable surveys. This is a response rate of 38%. Many started the survey but did not complete or get past the first page, resulting in unusable responses. Respondents ranged in age from 9 to 78 years, with 33.5 years being the median age. The respondents that provided usable surveys ranged in age from 11 to 78 years, with 22 years being the median age. As this is a very significant age variation, the standard deviation of the group was 24 years. Respondents were more likely to be male ( $n = 7$ ) than female ( $n = 5$ ). All of the respondents were Caucasian. None were of Hispanic, Latino, or Spanish origin. This is a limitation of the study.

When asked how many times per week the respondents participated in adaptive sports during the summer, the mean answer was 2.27 days with a standard deviation of 1.62 days. The value was similar when the same question was asked of the participants' winter participation ( $M = 2.07$ ,  $SD = 1.69$ ). When the respondents were asked questions about the duration of their adaptive sport sessions, the answers varied more between summer and winter. The answer choices were organized in increasing order with "1" denoting the answer "0-30 minutes" and "4" denoting "90 or more minutes". The mean of the duration of adaptive sports sessions during the summer was reported at 2.00 ( $SD = 0.89$ ), which represents the answer choice "30 to 60 minutes". The mean of the duration of adaptive sports sessions during the winter was reported at 3.14 ( $SD = 1.17$ ), or "60 to 90 minutes". Data is summarized below in Table 1.

Table 1

*Seasonal Adaptive Sport Participation*

	0-30 min	30-60 min	60-90 min	90 or more
Summer duration	3	6	1	1
Winter duration	2	2	2	8
Total duration	5	8	3	9

The observed increase in participation time during winter sports may be attributed to the sport choice of the respondents. All 12 respondents reported that they participated in skiing. The next most popular sport was white water rafting, which was reported by four of the participants. Other sports that were represented by at least one, but no more than two of the respondents included snowboarding, archery, water skiing, weight training, swimming, snowshoeing, rugby, horse therapy, music camp, tennis, and kayaking. The only answers for outdoor sport participation that were offered but were not chosen by the respondents were hiking and climbing. This data is depicted below in Table 2.

Table 2

*Adaptive Sport Participation*

	Total participants
Skiing	12
White water rafting	4
Snowboarding	2
Swimming	2
Archery	1
Water Skiing	1
Weight Training	1
Snow shoeing	1
Rugby	1
Horse therapy	1
Music camp	1
Tennis	1
Kayaking	1
Hiking	0
Climbing	0

The SCS Scale also uses an answer system similar to a 4-item Likert Scale to determine a respondent's sense of community in sport. The answer choices are as follows: (a) not at all true, (b) somewhat true, (c) mostly true, (d) completely true. The SCS Scale is comprised of 21 items, which fall into six different categories/factors. These factors are as follows: (a) administrative consideration, (b) common interest, (c) equity in administrative decisions, (d) leadership

opportunities, (e) social spaces, (f) competition. The factor of administrative consideration questions focus on the support shown by leaders to other members in the community as well as the quality of the relationship between leaders and other members of the community (see Table 3). Respectively, the means of these questions are 2.58 ( $SD = 1.00$ ), 2.67 ( $SD = 1.30$ ), 2.50 ( $SD = 1.09$ ), and 2.50 ( $SD = 1.09$ ). The overall mean of this factor is 2.56. The second factor, of common interest, focuses around values and belongingness of those within the community. Respectively, the means of these questions are 2.75 ( $SD = .75$ ), 2.67 ( $SD = 1.00$ ), 2.25 ( $SD = .97$ ). The overall mean of this factor is 2.56. The third factor, equity in administrative decisions, refers to decisions that leaders make for the surrounding community. Respectively, the means of these questions was 2.33 ( $SD = .99$ ), 2.58 ( $SD = .90$ ), and 2.08 ( $SD = 1.00$ ). The overall mean of this factor is 2.33. The fourth factor questions, in reference to leadership opportunities, refer to a member's autonomy within their community. Respectively, the means of these questions are 1.67 ( $SD = .78$ ), 1.92 ( $SD = 1.00$ ), 1.92 ( $SD = .90$ ), and 2.00 ( $SD = .85$ ). The overall mean of this factor is 1.88. The fifth factor, social spaces, questions deal with interaction between members of a community. Respectively, the means of these questions are 2.50 ( $SD = 1.00$ ), 2.25 ( $SD = .98$ ), 2.42 ( $SD = .99$ ), and 2.25 ( $SD = 1.17$ ). The overall mean of this factor is 2.35. The sixth factor, competition, refers to how competition is presented and dealt with within the community. Respectively, the means of these questions are 2.00 ( $SD = 1.14$ ), 2.67 ( $SD = .78$ ), and 2.33 ( $SD = .97$ ). The overall mean of this factor is 2.33. These statistics are reported below in Table 3 and Table 4. The SCS Scale reported a Cronbach's Alpha of .983 showing a good level of reliability. This reliability statistic did not differ greatly if any questions were to be removed from the scale.

Table 3

*Sense of Community in Sport Scale*

	Mean	Standard deviation
“Leaders of my community care about others”	2.58	1.00
“I feel comfortable talking openly with the leaders of my community”	2.67	1.30
“Leaders of my community support other members”	2.50	1.09
“The leaders make me feel like a valued member of my community”	2.50	1.09
“I share similar values with other members of my community”	2.75	.75
“I feel like I belong in my community”	2.67	1.00
“My community provides me with friends who have a strong commitment to the community”	2.25	.97
“Leaders in my community make decisions that will benefit everyone”	2.33	.99
“Leaders in my community make decisions that are fair”	2.58	.90
“Leaders in my community consider everyone’s needs when making decisions”	2.08	1.00
“I have influence over what my community is like”	1.67	.78
“If there is a problem in my community I can help solve it”	1.92	1.00
“I have a say about what goes on in my community”	1.92	.90
“Being a member of my community gives me opportunities to lead”	2.00	.85
“My community creates a place for me to interact with other members”	2.50	1.00
“When in my community, I know I’ll have a place where I can interact with other members”	2.25	.98
“When in my community, there are places where I can interact with other members”	2.42	.99
“My community provides me a place to interact with other members”	2.25	1.17
“I like the level of competition in my community”	2.00	1.14
“I feel a bond with other members of my community when I am competing with them”	2.67	.78

“Competing with other members in my community is fun” 2.33 .97

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Table 4

*Sense of Community in Sport Scale Factors*

	Mean	Standard Deviation	Cronbach's Alpha
Administrative Consideration	2.56	.09	.944
Common Interest	2.56	.16	.889
Equity in Administrative Decisions	2.33	.18	.955
Leadership Opportunities	1.88	.21	.903
Social Spaces	2.35	.27	.963
Competition	2.33	.19	.897

The Community Integration Measure uses an answer system comprised of five levels in order to determine a respondent's sense of integration in the community. The answer choices are as follows: (a) always disagree, (b) sometimes disagree, (c) neutral, (d) sometimes agree, (e) always agree. The CIM is comprised of 10 items. A level of community integration is determined by the unweighted sum of all of the items per respondent. The first question in the measure, question twenty-eight in the survey, resulted in a mean of 3.17 and a standard deviation of 1.53. This question asked about belongingness within the community. The second question dealt with knowing where to go within the community. This question resulted in a mean of 3.18 and a standard deviation of 1.47. The next, third, question stated that the respondent knows the community rules and can adhere to them. This question resulted in a mean of 3.18 and a standard deviation of 1.47. The fourth question in the measure resulted in a mean of 3.36 and a standard deviation of 1.43. This question referred to being accepted into the community. The fifth question was similar to the fourth. It described being independent within the community. The fifth question in the measure resulted in a mean of 2.83 and a standard deviation of 1.64.

The sixth question in the measure resulted in a mean of 3.58 and a standard deviation of 1.38. This question refers to how content the respondent is with where they are living. The seventh item asked to how close community members are. This question resulted in a mean of 3.55 and a standard deviation of 1.44. The next question dealt with how well a respondent knows other members of the community. It resulted in a mean of 3.90 and a standard deviation of 1.37. The ninth question in this measure referred to options for activities within the community and resulted in a mean of 3.00 and a standard deviation of 1.54. The final question referred to useful and productive activities within the community. This statement had a mean of 3.25 and a standard deviation of 1.55. These statistics are shown below in Table 4. The CIM produced a Cronbach's Alpha of .969. This indicates that for this sample, it is a highly reliable measure. If any of the items were to be removed from the measure, the reliability statistic would not greatly differ.

Table 5

*Community Integration Measure*

	Mean	Standard Deviation
“I feel like part of this community, like I belong here”	3.17	1.53
“I know my way around this community”	3.18	1.47
“I know the rules in this community and I can fit in with them”	3.18	1.47
“I feel that I am accepted in this community”	3.36	1.43
“I can be independent in this community”	2.83	1.64
“I like where I am living now”	3.58	1.38
“There are people I feel close to in this community”	3.55	1.44
“I know people well enough in this community to say hello and have them say hello back”	3.90	1.37
“There are things I can do in this community for fun in my free time”	3.00	1.54
“I have something to do in this community during the main part of my day that is useful and productive”	3.25	1.55

There were eleven useable responses to the Community Integration Measure. When scaled, these answers ranged from 10 to 50. The respondent with the CIM value of 10 had the lowest level of community integration, while the respondent with the value of 50 had the highest level of community integration. There were no scores between the values of 11 and 20. There were four total scores that were between the values of 21 and 30. In between the values of 31 and 40, there were two total scores. There were four total scores in between the values of 41 and 50. The standard deviation of all of the answers is 12.68. Each of the responses is shown in Table 5 below.

Table 6

*Community Integration Measure Total Scores*

	Total Score	Age	Gender
Respondent 4	50	57	Male
Respondent 9	49	62	Female
Respondent 2	45	78	Male
Respondent 1	41	11	Female
Respondent 7	39	11	Male
Respondent 8	34	22	Male
Respondent 3	28	21	Female
Respondent 6	23	17	Male
Respondent 5	22	22	Female
Respondent 11	21	32	Female
Respondent 10	10	60	Male

A correlation analysis was undertaken to compare the average number of times per week a respondent participated in adaptive sport during the summer and the factors of the Sense of Community in Sport scale. There was one factor that correlated significantly at the ( $\alpha = .05$  level). This factor was 'Equity in Administrative Decisions' ( $r = .721$ ) When a correlation analysis was run between the data representing the average number of times per week a respondent participated in adaptive sport per week during the winter and the factors of the Sense of Community in Sport scale, there were no Pearson's  $r$  correlations significant at the ( $\alpha = .05$  level). Again, when a correlation analysis was run between the data representing the average number of minutes a respondent's adaptive sports session last in the summer and the Sense of

Community in Sport scale, there were no Pearson's  $r$  correlations significant at the ( $\alpha = .05$  level). When a correlation analysis was run between the data representing the average number of minutes a respondent's adaptive sports session last in the winter and the Sense of Community in Sport scale, there were no Pearson's  $r$  correlations significant at the ( $\alpha = .05$  level). Following this trend, when a correlation analysis was run between the total frequency and the Sense of Community in Sport scale there were no Pearson's  $r$  correlations significant at the ( $\alpha = .05$ ). This was also true for when a correlation analysis was run between the total duration and the Sense of Community in Sport scale. This correlated in analyses shown below in Table 6. It is worth noting that while many of these values were not significant, the high levels of the values suggest that this line of inquiry may yield results with a broader sample. This is true specifically in the column labeled "average number of time per week during the summer" and "total frequency". These Pearson's  $r$  correlations are all strong enough to suggest that they may be significant in a different study. The middle column, "average number of times per week during the winter", did not have Pearson's  $r$  correlations that were strong enough to suggest this.

Table 7

*Correlations between participation and the Sense of Community in Sport Scale*

	Average number of times per week during the summer ( <i>r</i> ) ( <i>n</i> = 11)	Average number of times per week during the winter ( <i>r</i> ) ( <i>n</i> = 14)	Total frequency ( <i>r</i> ) ( <i>n</i> = 11)
Administrative Consideration	.459	.015	.451
Common Interest	.416	-.023	.406
Equity in Administration	.721*	-.020	.450
Leadership Opportunities	.637	.080	.489
Social Spaces	.676	-.088	.745
Competition	.593	.077	.477

*Note.* \*. Correlation is significant at the .05 level (2-tailed).

When a correlation analysis was run between the data representing the average number of times per week a respondent participated in adaptive sport during the summer and the Community Integration Measure, there were four statements in the measure that correlated at the .05 level. The statement “I can be independent in this community” correlated with a value of .680. “I like where I am living now” correlated with a value of .742. The third statement to correlate was “There are things I can do for fun in this community in my free time”. This statement correlated at a value of .734. The fourth statement to correlate stated “I have

something to do in this community during the main part of my day that is useful and productive”. This correlated at a value of .743.

When a correlation analysis was used to understand the data representing the average number of times per week a respondent participated in adaptive sport per week during the winter and the Community Integration Measure, there were no correlations that were significant at the .05 level. When a correlation analysis was run between the data representing the average number of minutes a respondent’s adaptive sports session last in the summer and the Community Integration Measure, four statements were significant at the .05 level. The first statement to correlate was “I can be independent in this community”. This statement correlated with a value of .824. The statement “I like where I am living now” correlated with a value of .755. The third statement to correlate was “There are things I can do for fun in this community in my free time”. This statement correlated at a value of .674. The fourth statement, “I have something to do in this community during the main part of my day that is useful and productive”, correlated with a value of .821. When a correlation analysis was run between the total frequency and the Community Integration Measure, there were two statements significant at the .05 level. The statement “I can be independent in this community” correlated with a value of .675. The second statement to correlate was “There are things I can do for fun in this community in my free time”. This statement correlated at a value of .690. When a correlation analysis was run between the total duration and the Community Integration Measure, no correlations were significant at the .05 level. This data is represented below in Table 8.

Table 8

*Correlations between participation and the Community Integration Measure*

	Average number of times per week during the summer ( <i>r</i> ) ( <i>n</i> = 11)	Average number of minutes during the summer ( <i>r</i> ) ( <i>n</i> = 14)	Total frequency ( <i>r</i> ) ( <i>n</i> = 11)
“I feel like part of this community, like I belong here”	.409	.575	.175
“I know my way around this community”	.646	.590	.496
“I know the rules in this community and I can fit in with them”	.682	.653	.540
“I feel that I am accepted in this community”	.559	.477	.411
“I can be independent in this community”	.680*	.824**	.675*
“I like where I am living now”	.742*	.755*	.612
“There are people I feel close to in this community”	.617	.550	.527
“I know people well enough in this community to say hello and have them say hello back”	.683	.127	.571
“There are things I can do in this community for fun in my free time”	.734*	.674*	.690*
“I have something to do in this community during the main part of my day that is useful and productive”	.734*	.821**	.632

Note. \*. Correlation is significant at the .05 level (2-tailed).

Note. \*\*. Correlation is significant at the .01 level (2-tailed).

When a correlation analysis was completed to understand how the six factors of the Sense of Community in Sport Scale and each question of the Community Integration Measure were related, all but one factor and question correlated at the ( $\alpha = .05$  level). One question stated: “I know people well enough in this community to say hello and have them say hello back”. This question was not significantly correlated to any question of factor in either measure. Overall, the sum of the Community Integration Measure was significant at a .05 level with each of the six factors of the Sense of Community in Sport Scale. The correlation of each factor of the Sense of Community in Sport Scale and the total of the CIM is shown in Table 9.

Table 9

*Correlation between the Sense of Community in Sport Scale factors and the Community Integration Measure*

	CIM Sum ( <i>r</i> )
Administrative Consideration	.860**
Common Interest	.808**
Equity in Administration	.882**
Leadership Opportunities	.780**
Social Spaces	.887**
Competition	.794**

*Note.* \*\*. Correlation is significant at the .01 level (2-tailed).

## DISCUSSION

Unfortunately, there were some limitations to this study. Having only eleven usable surveys to gather data from does not allow any conclusions to be drawn from this study. As such, any conclusions that could have been drawn from this data cannot be supported until further research is undertaken. It is worth noting that while conclusions cannot be drawn do to the size of the data set, the data did offer very strong correlations and high values in all of the tests that were completed with this sample. However, all possible findings are specific to this population and sample and are not generalizable.

As the data in this study implies, frequency and duration did not have the anticipated positive relationship to sense of community among the participants of the study. However, sense of community and community integration were positively associated as originally hypothesized. Although frequency and duration did not have the same impact as originally foreseen, they did present other avenues of research as certain parts of these constructs were correlated with these two instruments. It is worth exploring why individual parts of the constructs did significantly correlate with frequency and duration within this data set and if there are other outside factors that caused this correlation.

According to the data, this sample had a higher level of participation in sports during the summer than during the winter. However, when they did participate in sports in the winter their participation had a longer duration than their participation during the summer. It is worth mentioning that the different sports offered in the summer versus the sports offered in the winter may have an impact on the results. All eleven respondents stated that they participated in skiing in the winter, which is an individual sport. Many of the summer sport opportunities – white water rafting, kayaking, and tennis – are team sports. This may have had an impact on the levels of

sense of community and community integration the respondent had as both of these scales showed lower levels of correlation in the winter categories. The findings do not support either H<sub>1</sub> – the frequency of adaptive sport participation is positively associated with a sense of community of adaptive sport athletes – or H<sub>2</sub> – the duration of adaptive sports participation is positively associated with a sense of community of adaptive sport athletes.

The findings seem to support the idea that the type of adaptive sport that these 11 athletes participated in has a greater association with athlete's sense of community, instead of the frequency and duration of their participation. This may be due to the fact that many of the winter sports that are offered are more individualized sports while many of the summer sports that are offered are team sports. Being involved in a sport that is a team sport versus one that is individualized may already result in a higher level of sense of community due to the fact that the athlete is surrounded by others who are working with them towards a common goal. More research with a greater sample size, and possibly more than one population, should be done to explore this slight indication.

### **Sense of Community in Sport Scale**

The Sense of Community in Sport Scale is comprised of six factors: (a) administrative consideration, (b) common interest, (c) equity in administration, (d) leadership opportunities, (e) social spaces, (f) competition. Five out of these six factors all resulted in means of above 2.3. This implies that the 11 respondents feel as though their administration within their community recognizes them, that there are people within their community who have similar interests as them, that they feel respected by their administration in decisions they make, that they have spaces where they can meet others in their community, and that there is a healthy level of competition within the other members of their community. This should be taken with some

reservation because although these values were higher than the others, 2.3 is still a relatively modest value. The factor labeled “Leadership Opportunities” had a mean of 1.88, which was significantly lower than any of the other factors in the scale.

This implies that these respondents do not feel like they have a high level of leadership in their community and they cannot control what goes on while they are there. This could be due to many different aspects. The level and type of disability that someone has may impact how much they perceive their leadership ability and how others perceive their leadership ability. If they have a more severe disability, they may be stigmatized against because others may not perceive that they have any leadership ability therefore they may not give them the opportunity. The administration within the sport organization may not be formatting the sport opportunity in order to enable their participants to have a leadership role. Giving the participants a greater sense of autonomy may help to boost this factor and enable participants with leadership opportunities. Whether they hold a formal leadership role or not, giving them a feeling of autonomy and the sense of decision-making power within the community may increase this factor. All six of the factors of the Sense of Community Scales were significantly lower than the previous research had suggested. There was a deviation of about 1.00 for each factor as compared to the original scale. However, in the original scale the factor of “Leadership Opportunities” was still the lowest scoring factor.

### **Community Integration Measure**

The Community Integration Measure is comprised of ten statements. Every one of these statements resulted in a mean of 3.0 or higher, except for the statement of “I can be independent in this community”. This statement had a mean of 2.83. When looking at the results of the SCS Scale, it is not surprising that this statement was the lowest in the Community Integration

Measure. This statement is the only statement to refer to independence or autonomy within the instrument. It is very similar to the statements within the SCS factor called Leadership Opportunities, which was the lowest scoring factor in the scale. Therefore, the trend continues that the 11 respondents of this survey feel as if they cannot be independent leaders who control the environment they are in when they participate in these sport opportunities.

This is a tendency of this factor to score lower than the other statements according to the original reliability tests (Reistetter et al., 2005). This could be due to the level of disability a respondent has and not necessarily any community factor. However, this does not mean that this feeling of independence is not achievable through sport opportunities. The highest scoring statement in the Community Integration Measure was “I know people well enough in this community to say hello and have them say hello back” which had a mean of 3.90. This statement is similar to the factor in the Sense of Community in Sport Scale that evaluated social spaces.

### **Correlation between constructs**

This study also explored how the SCS Scale and the CIM correlated with each other. Four statements within the SCS correlated significantly with five different statements from the CIM. “I feel comfortable talking openly with the leaders of my community” (SCS) correlated significantly with “I know my way around this community” (CIM), “There are people I feel close to in this community” (CIM), and “There are things I can do in this community for fun in my free time” (CIM). “I share similar values with other members of my community” (SCS) significantly correlated with “I feel that I am accepted in this community” (CIM) and “There are people I feel close to in this community” (CIM). “If there is a problem in my community I can help solve it” (SCS) significantly correlated with “There are people I feel close to in this community” (CIM) and “There are things I can do in this community for fun in my free time”

(CIM). “Being a member of my community gives me opportunities to lead” (SCS) significantly correlated only with “I feel like part of this community, like I belong here” (CIM). When a correlation analysis was run between the six factors of the SCS Scale and the overall sum of the CIM, every factor correlated significantly at the .01 level. This supports H<sub>3</sub> which states that “as sense of community increases in the adaptive sport athletes, community integration also increases”.

What differed between the SCS Scale and the Community Integration Measure in this study was that the CIM correlated significantly more with duration and participation rates during the summer than the SCS Scale factors. Only one SCS Scale factor – Equity in Administration – correlated significantly with summer participation rates. The other five factors had no significant correlations between either duration or participation rates. This is troublesome because the Sense of Community in Sport Scale is comprised of factors that represent motivators for adaptive sport participation. If an athlete is not achieving this construct through their participation, then they may not be motivated to continue with their chosen sport. As stated in the literature, adaptive sport participation results in both physical and psychological benefits such as decreased risk of diseases, increased fitness, improved self-esteem, increased social interaction, and a higher level of overall health and well-being (Sprod, Crowe, Bell, & Johnson, 2017).

Meanwhile, the CIM had four statements that correlated with both participation and duration rates during the summer. The feeling of independence in a community was highly correlated with both participation and duration rates of sport opportunities during the summer. The statement about a participant liking where they live was also highly correlated with participation and duration rates of sport in the summer. The third and last statement to be correlated with participation and duration rates in the summer was a statement about having

things to do in free time and having things to do in the main part of the day. These results show that for the 11 athletes, summer participation has a relation to both the subjective and objective aspects of community integration. Being physically integrated in the community is shown by the correlation between someone liking where they live and the duration rates. Being socially integrated into the community is represented by the high correlation in the feeling of independence and adaptive sport participation.

### **Implications**

This research has many practical implications. The first and main implication is that this research gives insight into what aspects of adaptive sport participation directly lead to an increased feeling of community integration and sense of community within the participants of the study. Those working in the adaptive sport world can use this information to recognize that the frequency and duration of adaptive sport may not have an effect on a participant's well-being. However, any interpretation of these findings should be treated as tenuous, seeing as how the sample size is quite small. Therefore, organizations may not push their participants to engage in more sport opportunities specifically for the increased benefits of community integration. However, it should be noted that increased engagement in sport opportunities may lead to other benefits that are not related to sense of community or community integration (D'Eloia & Price, 2016; Milner & Kelly, 2009). This research may also help to understand specific needs of these adaptive sport athletes. It shows what areas may be lacking in their lives and what adaptive sport organizations can improve upon to improve the comprehensive wellbeing of their participants.

This research starts to show how community integration and sense of community are related and how they impact each other. This is useful information because these are very important concepts in the overall health of athletes and not understanding these concepts can lead

to declining mental and physical health. It is also important to understand how they relate in order to program the sport opportunities to better meet the needs of these concepts. It may be a benefit for organizations to start modeling their sport opportunities around the theory of community. This may give their participants the biggest benefits from their participation in these programs. This research also gives insight into what constraints, specifically intrapersonal and interpersonal, may be stopping a potential athlete from participating in adaptive sport.

### **Limitations**

This study was limited in many important ways. The main limitation was the small sample size. There were only eleven usable responses to the survey out of a potential population of 512 participants. Again, it should be noted that all possible conclusions drawn from this study are specific to this study only and should not be generalized. This small sample size could have been due to many different factors such as the number of questions in the survey, the fact that the survey was administered online, negative stigmas of potential respondents toward surveys, or the nature of the population being studied. This is not only a problem of populations comprised of those with disabilities, but a problem of online surveys overall. Past studies have stated that online surveys result in lower response rates than other survey methods, such as those administered through postal mail or in person (LaRose & Tsai, 2014). If this study were going to be replicated, it would be ideal to administer this survey to participants within multiple different organizations to increase sample size as well as increase understanding of the population of athletes as a whole. Another limitation of this study was that the population was only comprised of one race/ethnicity. This could be due to the geographical location of the population that was used in this study. The population is based in the city of Aspen, Colorado which is comprised of

90% Caucasians. If this study were to be replicated with a population that had a more diverse population, the results might differ.

### **Future research**

Because of the high nature of some of the correlations within this study, but the low response rate, this study should be replicated for better results to understand how these concepts are related. When replicated, type of disability should be asked in order to determine if this has any impact on the level of sense of community and community integration that the athlete feels. The measures of frequency and duration should be changed to observational, quantifiable measures using either a time diary or an experience sample method. When reviewing the data between the Sense of Community in Sport Scale and the Community Integration Measure, it would be worth considering only using one instrument as this seemed to create significant redundancy in the correlation between items. The method of data collection should also be changed if possible. A face to face or onsite method may be a better way to collect data from this population and result in a better response rate than an online survey would.

Future research should focus on different outcomes in community integration associated with team sports versus individual sports. This seemed to be an underlying correlation in this study that needs more research. More research could also be done on other factors that may correlate with the differences found in seasonal participation rates. Many sport organizations operate differently based on whether they are in their “busy season” or their “low season”. This may affect how much of a community is fostered within the organization at that time, which may have a direct result on how much of a community the athletes are exposed to. Some athletes may also have to travel to participate in sports during a certain season, and they may have a greater sense of community and community integration at one sport organization versus at another.

Another factor that may have impacted this research is the length of time that an athlete has participated in adaptive sport. It is worth studying these different factors to see how or if they have an impact on sense of community and community integration. Future research should also be focused on multiple adaptive sport organizations to determine if these results are specific to just Challenge Aspen or are true among multiple populations of individuals. Future research may also want to delve into if these results differ based on disabilities type, or if disability type has any implications on overall sense of community and community integration. All of these future avenues of research should include a greater sample size than this survey achieved. This study should be replicated with a larger sample size to determine if the trends shown in the data were specific to only this study or if they hold true with participants of other organizations.

Overall, frequency and duration did not have an impact on sense of community and community integration as originally anticipated for the eleven participants. However, this research provided some insight into other factors that may have an impact. The Community Integration Measure seemed to have a higher correlation when compared to participation rates than the Sense of Community in Sport Scale. This implies that sense of community is conceived through other components of sports. When looking back at the literature, the four dimensions of sense of community (a) membership, (b) influence, (c) fulfilment of needs, and (d) shared emotional connection seem to be the main contributors to this feeling. Since participation rates seem to have no impact on sense of community, and there was not any indication that sport types had an impact on it either, sense of community may be based specifically off of the community culture that is instilled within an organization. More research should be done in order to determine if this is supported or not. This research also started to provide some understanding to how sense of community and community integration are related.

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## APPENDIX A: IRB APPROVAL LETTER

EAST CAROLINA UNIVERSITY  
University & Medical Center Institutional Review Board  
4N-64 Brody Medical Sciences Building- Mail Stop 682  
600 Moye Boulevard · Greenville, NC 27834  
Office 252-744-2914  · Fax 252-744-2284  · [www.ecu.edu/ORIC/irb](http://www.ecu.edu/ORIC/irb)

### Notification of Exempt Certification

From: Social/Behavioral IRB  
To: [Charlotte Pearsall](#)  
CC: [Kindal Shores](#)  
Date: 11/12/2018  
Re: [UMCIRB 18-001907](#)  
The Relationship of Adaptive Sport Participation on Sense of Community and Community Integration

I am pleased to inform you that your research submission has been certified as exempt on 11/8/2018. This study is eligible for Exempt Certification under category #2.

It is your responsibility to ensure that this research is conducted in the manner reported in your application and/or protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

## APPENDIX B: EMAIL CORRESPONDENCE

Good afternoon,

Thank you for agreeing to participate in my research study titled “The Impact of Adaptive Sport Participation on Sense of Community and Community Integration”! **Please click the link to get started:** [https://ecu.az1.qualtrics.com/jfe/form/SV\\_8fgqladdFy9CHJP](https://ecu.az1.qualtrics.com/jfe/form/SV_8fgqladdFy9CHJP)

The survey will take approximately 6 minutes to complete. This information may assist us to better understand the impact that participation of adaptive recreation has on participants and their lives in their community.

Your responses will be kept confidential and no data will be released or used with your identification attached. Your participation in the research is **voluntary**. You may choose not to answer any or all questions, and you may stop at any time.

There is **no penalty for not taking part** in this research study.

Good morning,

Hope you're enjoying the holiday season! I know how crazy this time of year can be, so I just wanted to send a quick reminder about the research study that was recently distributed to you titled “The Impact of Adaptive Sport Participation on Sense of Community and Community Integration”! **Please click the link to get started:** [https://ecu.az1.qualtrics.com/jfe/form/SV\\_8fgqladdFy9CHJP](https://ecu.az1.qualtrics.com/jfe/form/SV_8fgqladdFy9CHJP)

The survey will take approximately 6 minutes to complete. This information may assist us to better understand the impact that participation of adaptive recreation has on participants and their lives in their community.

Your responses will be kept confidential and no data will be released or used with your identification attached. Your participation in the research is **voluntary**. You may choose not to answer any or all questions, and you may stop at any time.

There is **no penalty for not taking part** in this research study.

Thank you!

## APPENDIX C: SURVEY

You are being invited to participate in a research study titled “The Impact of Adaptive Sport Participation on Sense of Community and Community Integration” being conducted by Charlotte Pearsall, a graduate student at East Carolina University in the Recreation and Leisure Studies department. The survey will take approximately 6 minutes to complete. This information may assist us to better understand the impact that participation of adaptive recreation has on participants and their lives in their community. Your responses will be kept confidential and no data will be released or used with your identification attached. Your participation in the research is **voluntary**. You may choose not to answer any or all questions, and you may stop at any time. There is **no penalty for not taking part** in this research study. Please call Charlotte Pearsall at (910) 617-3075 for any research related questions or the Office of Research Integrity & Compliance (ORIC) at 252-744-2914 for questions about your rights as a research participant.

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Q1 Have you been diagnosed with a disability/injury? If so, please state the date of your injury/diagnosis.

\_\_\_\_\_MM/DD/YY\_\_\_\_\_

---

Q2 What adaptive sports do you participate in?

- Archery
  - Climbing
  - Cycling
  - Hiking
  - Rafting
  - Skiing
  - Snowboarding
  - Other
- 

Q3 In the summer, how many times per week on average do you participate in adaptive sports?

- 1
  - 2
  - 3
  - 4
  - 5 or more
-

Q4 On average, how many minutes do your adaptive sport sessions last in the summer?

- 0 to 30 minutes
- 30 to 60 minutes
- 60 to 90 minutes
- 90 minutes or more

Q5 In the winter, how many times per week on average do you participate in adaptive sports?

- 1
- 2
- 3
- 4
- 5 or more

---

Q6 On average, how many minutes do your adaptive sport sessions last in the winter?

- 0 to 30 minutes
- 30 to 60 minutes
- 60 to 90 minutes
- 90 minutes or more

---

Page Break

Header: In this next section, researchers are interested in how you feel about you feel about the community that you live and play in. Please think about your day to day "community" that you engage with when answering the following questions.

Q7 Leaders of my community care about others

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
- 

Q8 I feel comfortable talking openly with the leaders of my community

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
- 

Q9 Leaders of my community support other members

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
-

Q10 The leaders make me feel like a valued member of my community

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
- 

Q11 I share similar values with other members of my community

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
- 

Q12 I feel like I belong in my community

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
-

Q13 My community provides me with friends who have a strong commitment to the community

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
- 

Q14 Leaders in my community make decisions that will benefit everyone

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
- 

Q15 Leaders in my community make decisions that are fair

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
-

Q16 I have influence over what my community is like

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
- 

Q17 My community creates a place for me to interact with other members

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
- 

Q18 Leaders in my community consider everyone's needs when making decisions

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
-

Q19 If there is a problem in my community I can help solve it

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
- 

Q20 I have a say about what goes on in my community

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
- 

Q21 When in my community, I know I'll have a place where I can interact with other members

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
-

Q22 Being a member of my community gives me opportunities to lead

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
- 

Q23 I like the level of competition in my community

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
- 

Q24 When in my community, there are places where I can interact with other members

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
-

Q25 I feel a bond with other members of my community when I am competing with them

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
- 

Q26 My community provides me a place to interact with other members

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
- 

Q27 Competing with other members in my community is fun

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
-

Q28 I feel like part of this community, like I belong here

- Not true at all
  - Somewhat true
  - Mostly true
  - Completely true
- 

Page Break

---

Q29 I know my way around this community

- Always disagree
  - Sometimes disagree
  - Neutral
  - Sometimes agree
  - Always agree
- 

Q30 I know the rules in this community and I can fit in with them

- Always disagree
  - Sometimes disagree
  - Neutral
  - Sometimes agree
  - Always agree
-

Q31 I feel that I am accepted in this community

- Always disagree
  - Sometimes disagree
  - Neutral
  - Sometimes agree
  - Always agree
- 

Q32 I can be independent in this community

- Always disagree
  - Sometimes disagree
  - Neutral
  - Sometimes agree
  - Always agree
- 

Q33 I like where I am living now

- Always disagree
  - Sometimes disagree
  - Neutral
  - Sometimes agree
  - Always agree
-

Q34 There are people I feel close to in this community

- Always disagree
  - Sometimes disagree
  - Neutral
  - Sometimes agree
  - Always agree
- 

Q35 I know people well enough in this community to say hello and have them say hello back

- Always disagree
  - Sometimes disagree
  - Neutral
  - Sometimes agree
  - Always agree
- 

Q36 There are things I can do in this community for fun in my free time

- Always disagree
  - Sometimes disagree
  - Neutral
  - Sometimes agree
  - Always agree
-

Q37 I have something to do in this community during the main part of my day that is useful and productive

- Always agree
  - Sometimes disagree
  - Neutral
  - Sometimes agree
  - Always agree
- 

Q38 What is your gender?

- Male
  - Female
- 

Q39 What is your age?

---

---

Q40 Are you Hispanic, Latino, or Spanish origin?

- Yes, Mexican, Mexican American, or Chicano
  - Yes, Puerto Rican
  - Yes, Cuban
  - Yes, another Hispanic, Latino, or Spanish origin
  - No, not of Hispanic, Latino, or Spanish origin
  - Unavailable/Unknown
- 

Q41 Which category best describes your race?

- American Indian/Alaska Native
  - Asian
  - Black or African American
  - Native Hawaiian/Other Pacific Islander
  - White
  - Other
  - Unavailable/Unknown
- 

We thank you for your time spent taking this survey. Your response has been recorded. If you have any questions or concerns, please call Charlotte Pearsall at (910) 617-3075 for any research related questions or the Office of Research Integrity & Compliance (ORIC) at 252-744-2914 for questions about your rights as a research participant.

## **APPENDIX D: EXTENDED LITERATURE REVIEW**

### **Challenges**

According to the National Organization on Disability, people with disabilities score lower than people without disabilities on twelve out of thirteen quality of life measures (2010). The twelve quality of life measures are: (1) employment; (2) poverty; (3) financial situation; (4) education; (5) health care; (6) transportation; (7) socializing; (8) going to restaurants; (9) attendance at religious services; (10) political participation; (11) satisfaction with life; and (12) technology. Although the rate of employment for people with disabilities has been increasing since 1998, it is still only at twenty-one percent as compared to those in the work force without disabilities (National Organization on Disability, 2010). People with disabilities are also almost two and a half times more likely to live below the poverty line than those without disabilities. A study on the link between poverty and those with intellectual disabilities by Emerson (2007) presented evidence that there is a circular relationship between the two. He stated that poverty is a cause of intellectual disabilities due to the exposure of a hazardous environment; while at the same time those who have a disability or care for someone with a disability are more likely to be in poverty due to the high financial impact of the disability. Fifty-eight percent of the United States population with disabilities reports that they are living pay check to pay check as compared to thirty four percent of the population of those without disabilities (National Organization on Disability, 2010). These financial situations could reflect the high unemployment rates for people with disabilities.

One of the smallest gaps between people with and without disabilities is in the attainment of education. While eleven percent of people without disabilities reported not completing high school, seventeen percent of people with disabilities reported not completing high school

(National Organization on Disability, 2010). The only gap smaller than education is political participation. In the 2008 election year, both those with disabilities and those without disabilities had a turnout rate of fifty nine percent. In addition to employment and finances, health care still presents a barrier for those with disabilities, as nineteen percent of people with disabilities say that they have gone without health care at some point in the past year as compared to ten percent of those without disabilities (National Organization on Disability, 2010). Individuals with developmental disabilities also have higher rates of obesity and due to multiple factors, such as the cost of sport and lack of social network or support (Burk & Sharaievska, 2017).

People with disabilities continue to face challenges to transportation, with thirty-four percent as compared to sixteen percent of those without disabilities saying that they consider transportation to be a problem. A qualitative focus group study of seventeen adaptive sport participants indicated that factors that may affect participation rates of adaptive sport programs, transportation was shown to be one of the top limiting factors (Lape et al., 2017). This could be due to the previously stated financial and economic factors or due to other challenges such as stigma in the community. The National Organization on Disability noted that people with disabilities still socialize less than those without disabilities and that they are twenty-seven percent less likely to dine out at restaurants than those without disabilities (2010). This could be because individuals with disabilities are often stigmatized against because they may not fit the social construct of normalcy in body, identity, or culture (Barr & Bracchitta, 2015; Seo & Chen, 2009; Green, 2007). Due to these stigmas, people with disabilities may experience greater limitations or constraints in their lives than they would if these stigmas did not exist (Smart, 2001).

## Constraints

Constraints to employment and to resources do not end after work hours. Everyone must negotiate through constraints in other aspects of their life such as leisure constraints. Constraints to leisure can be defined as “factors that limit the formation of leisure preferences or inhibit participation” (Jackson, 1991). Jackson (2005) stated three important reasons for understanding constraints; (1) to understand choices of individuals during leisure; (2) to develop new leisure concepts; and (3) to spark discussion among scholars and researchers. The leisure literature has identified three groups of constraints – interpersonal, intrapersonal, and structural (Crawford, Jackson, & Godbey, 2009). Interpersonal constraints arise from interactions with others around participating leisure (e.g., wanting to participate in a group activity but not having a partner or group). Intrapersonal constraints arise from individual beliefs, attributes, or personal characteristics (e.g., being a pacifist, self-image). Structural constraints arise from factors between preference and participation in leisure (e.g., time, transportation, financial means) (Schneider, 2016; Lape et al., 2017). As seen in the Hierarchical Model of Constraints (Crawford et al., 2009) intrapersonal, interpersonal, and structural constraints affect leisure preferences, motivations to participate in leisure, interpersonal compatibility and coordination, as well as level of participation in leisure. The origin of these constraints can be addressed through adequate policies, strategies, and legislation (World Health Organization, 2014). Some approaches have shown that addressing specific access needs, such as discrimination or poverty, can give a greater understanding of the constraints faced and help reduce barriers to participation in sport among all athletes (Devas, 2003; Tregaskis, 2003).

Studies have noted that individuals with disabilities have significantly lower participation rates in sports than people without disabilities due to such constraints (Darcy, Lock, & Taylor,

2017). In the United States, there are 56.7 million people living with a physical or cognitive disability – this represents nineteen percent of the population (U.S. Census Bureau, 2010). Healthy People 2020 stated that 76.8% of these adults had experienced some type of barrier that constrained them from accessing or using recreation and health facilities (US Department of Health and Human Services, 2018). According to the World Health Organization (2011), having a disability is “part of the human condition” and it is estimated that everyone will experience disability to varying degrees at one point in their lives. This population represents the “largest minority group in the United States” (Piatt & Jorgenson, 2012). According to the World Health Organization (2011), people with disabilities also represent fifteen percent of the world’s population, which is over one billion people who live with some form of physical or cognitive disability. This number is growing due to an aging society, the prevalence of chronic health conditions, and increasing populations (World Health Organization, 2011). As this number grows, the number of people constrained from leisure participation grows. This is a problem because a lack of sport and recreation can cause detrimental effects on psychological and physiological health.

People with disabilities perceive community support, mobility, high levels of need, and transportation as constraints to participation in everyday leisure and recreation (Darcy et al., 2017). In reference to recreation, leisure, sports, and tourism, the United Nations General Assembly (UN) recognized that people with disabilities still face barriers in their lives (Bartlett, 2012). The UN advocates that nation states must eliminate human rights violations by fully empowering those with disabilities in every facet of their lives. When people with disabilities are not empowered, it can result in segregation from their community and create a sense of loneliness. Often this exclusion is not only due to constraints at the government level, but it is

due to stereotyping and being stigmatized by the people within their community. Those with cognitive disabilities often face higher levels of stigma and constraints than those with physical disabilities (Barr et al., 2015).

No matter what type of disability an athlete may have, one of the most common experiences among athletes with disabilities has to deal with and face stigmas. People with disabilities are often regularly stigmatized against and stereotyped against (Goodwin et al., 2004). They often feel like “people automatically think I can't do anything” (Lundberg, Taniguchi, & McCormick, et al., 2011). These individuals may feel stigmatized because of their impairment; however, being able to participate in sport can help give them a sense of normalcy that helps redefine their identity (Lundberg, Taniguchi, McCormick, & Tibbs, 2011). This may be due to decreased feelings of loneliness, increased friendships, and higher feelings of self-worth (Shapiro & Martin, 2014). During in-depth interviews with seventeen individuals with disabilities, Lundberg and colleagues identified that athletes with disabilities usually feel negatively stigmatized against in everyday life; however, their participation in sport programs granted more opportunities to create social networks, experiences of success, a way to positively compare themselves with others in their lives, and a sense of normalcy in order to redefine their stigmatized identity (2011). Being involved in recreation and leisure – especially adaptive sports – can enable people with disabilities to overcome negative social constructs and redefine their stigmatized identity.

### **Benefits**

Participation in sport and leisure can provide health benefits, both physical and psychological, environmental benefits, economic benefits, and community and social benefits (Brown, 2016; Driver, Brown, & Peterson, 1991). This aligns with the World Health

Organization's definition of leisure that provides three dimensions of health – physical, social, and mental. This definition also notes that health is a complete state of these three dimensions (World Health Organization, 2014). According to Driver, benefits from these dimensions can be conceptualized into an improved condition, a prevention of a worse condition, and a satisfactory psychological experience (1997). An improved condition may be seen through an improvement in physical health. In a study done by Di Russo and colleagues that included seventeen participants with disabilities, they discovered that sports participation led to increased executive brain function and helped with overall control impairments (2010). An example of a satisfactory psychological experience could result in a sense of independence or other intrinsic value (Moore & Driver, 2005). Iwaski & Mannell identified other examples of a satisfactory psychological experience. Their research observed that reduced stress and increased socialization were additional benefits of leisure and sport (Iwaski & Mannell, 2000).

Current policies emphasize the need for growing physical activity to improve the wellbeing and health of the United States' population (World Health Organization, 2010). Only 22.5% of adults meet the recommended goals for physical activity (US Department of Health and Human Services, 2017). These numbers are even lower for those with disabilities. According to the Department of Health, 25.6% of people with disabilities are physically inactive during the week; this is double the number of those without a disability who are physically inactive during the week (US Department of Health & Human Services, 2017). Those with disabilities report that they are 34% satisfied with life while people without disabilities report sixty-one percent satisfaction (National Organization on Disability, 2010). This twenty-seven percent gap may be reduced through the achievement of health benefits of leisure activity, such as increased life satisfaction due to decreasing work pressure, fatigue, and tension (Kao, 1995). Engagement in

recreation and sport can produce benefits in dimensions such as physiological, social, educational, psychological, and aesthetics (Lee & Lin, 2011) as well as benefits in quality of life (McVeigh, Hitzig, & Craven, 2009). Participation has also been linked to reduced mood changes as shown in depression and anxiety (Gioia et al., 2005).

A series of studies suggest that participation in sports for people with disabilities can improve the participants' quality of life. Lundberg, Bennett, and Smith (2011) studied veterans returning from combat who had acquired a disability during service. This research was conducted with eighteen veterans who had been in either Operation Iraqi Freedom or Operation Enduring Freedom and who had participated in the adaptive sports program *Higher Ground* in Sun Valley, Idaho. This was a pre-test/post-test design and data was gathered over seven months through both 2008 and 2009. Results demonstrated that when veterans participated in sport they experienced decreases in mood disturbance – specifically in tension, depression, and anger. This aligned with past studies where adaptive sport programs centered on community integration and were linked to the four domains of quality of life – physical health, psychological health, social relationships, and the environment (Chun, Lee, & Lundberg, et al., 2008). This link was attributed to connecting to resources within the community. The researchers implied that creating more accessibility to resources in the community for veterans will help increase quality of life and decrease mood disturbances. A phenomenological, qualitative study done by Hawkins, Cory, and Crowe examined the effects of participation in a Paralympic sports camp on fifty injured service members (2011). The authors suggested that outcomes from participation include: (1) positive change in perception; (2) increased motivation; (3) increased social support; (4) increased skills and knowledge; (5) improved health and wellbeing; (6) increased competence;

and (7) improved autonomy (2011). These outcomes all contributed to quality of life in participants.

As well as increasing quality of life, sport participation can broadly benefit self-esteem levels, self-determination, and self-perceptions. Specifically, sense of self in those with disabilities can be diminished by the way they are treated by other people. People with disabilities report that they feel as if those without a disability may feel sorry for them, and twenty-seven percent feel they are treated differently because of their disability (National Organization on Disability, 2010). In a cross-sectional study with adaptive sport athletes that were either active duty or retired service members done by Laferrier, Teodorski, & Cooper (2015), participation in a tournament or clinic had a positive effect on self-esteem in participants when measured on the Rosenberg Self-esteem Scale. This means that participation in adaptive sport directly increased the participants' self-esteem. An exploratory study done by Lundberg, Taniguchi, McCormick, & Tibbs (2011) with participants at the National Ability Center showed that athletes with disabilities usually felt negatively stigmatized against in everyday life. However, their participation in the adapted sport programs granted more opportunities to create social networks, experience success, to positively compare themselves with others they feel connected to, and to feel a sense of normalcy to redefine their stigmatized identity. Some participants stated that their participation in the programs gave them a sense of normalcy and showed them that they could do everything – if not more – than those without disabilities (Lundberg et al., 2011).