5-7-2020

Sport participation for people with disabilities: Examining perceived constraints to participation in sport

Allison Pinello

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Sport participation for people with disabilities:
Examining perceived constraints to participation in sport
Allison Pinello

A thesis submitted to the Graduate Faculty of
JAMES MADISON UNIVERSITY
In
Partial Fulfillment of the Requirements
for the degree of
Master of Science

Sport and Recreation Leadership

May 2020

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Acknowledgements

First and foremost, I would like to thank Dr. David Shonk for his guidance and expertise as I progressed through this project. Without your guidance and encouragement throughout this process, I would have not been able to complete this project. I would also like to thank my committee members, Dr. Emeka Anaza and Dr. Ben Carr, for their suggestions and feedback related to this document.

Thank you to Mr. John Tkac at James Madison University for his assistance in developing and editing the Spanish version of my questionnaire. Thank you to Dr. Doyeon Won from the Texas A&M University Corpus Christi for his help and diligence in analyzing and interpreting the data for this project. I would also like to express my gratitude to Dr. Tom Moran for his advice and guidance in developing a study that would be inclusive of all members of the disability sport community. Additionally, I would like to thank the entire faculty within the Hart School for their never-ending support and encouragement. My growth throughout my time with you all will stick with me long after graduation.

Last of all, I would like to thank my family and friends for their consistent support and encouragement throughout the hardest times of this project. Thank you for the constant reminders that I can do hard things and to take everything one step at a time.
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Abstract

The aim of this paper is to investigate the constraints, or barriers, that people with disabilities (PwDs) perceive as factors related to their participation in sport and recreation activities. An electronic questionnaire was administered through email via a regional disability advocacy and programming organization and was completed by PwDs with varying levels and types of disability. The questionnaire included questions related to three different dimensions of constraint: intrapersonal, interpersonal, and structural, as well as subdimensions within the structural constraint. From the data analysis, five different conclusions were drawn: 1) The interpersonal constraint was the most commonly cited constraint. 2) The community/organization subdimension of structural constraints is the most commonly experienced. 3) There is a positive correlation between the presence of all three dimensions of constraints. 4) There are negative correlations between satisfaction levels and equipment availability and between the desire to participate and the presence of structural constraints. 5) Researchers were unable to identify a statistical gender significance in relation to barriers; however, there were differences in how each gender ranked different types of constraints. These findings are relevant to industry professionals with regard to identifying programming that may help to negotiate through these constraints, as well as to future researchers with regard to further exploring these constraints through qualitative research. Future research should consider the limitations of the study, which include the use of a relatively old model of constraints, the low response rate through electronic delivery, and the lack of controls for other factors relating to constraints, especially socioeconomic status.
1. Introduction

Leisure constraints research began to take prominence in the late 1980s with the publication of Crawford and Godbey’s “Reconceptualizing Barriers to Family Leisure” (1987). Since then, many researchers have studied the presence and structure of barriers that individuals may face when it comes to leisure participation. Four years later, Crawford, Jackson, and Godbey (1991) proposed the Hierarchical Model of Leisure Constraints and postulated three types of constraints: intrapersonal, interpersonal, and structural. In the time since the development of the model, research has been conducted across many different constructs to identify where and how different constraints affect different populations (Godbey, Crawford, & Shen, 2010).

Leisure time, and specifically leisure time related to sport participation, has proven to provide individuals with a variety of health benefits (Neely & Holt, 2014; Shores, Becker, Moynahan, Williams, & Cooper, 2015). Research has reported leadership, wisdom, social intelligence emotional control, physical health, interpersonal relationships, purposeful living, motivation, self-efficacy and self-esteem and behavioral self-regulation as positive outcomes associated with sport participation (Gould, Collins, Lauer, & Chung, 2007; Reverdito et al., 2017). Reverdito et al. (2017) asserted that sport participation can be associated with a mix of both immediate and long-term/distant positive outcomes. They also suggested that both time spent in a program and continuity of participation are positively correlated with developmental assets. Gould, Collins, Lauer, and Chung (2007) supported those claims while also mentioning the benefits of developing natural mentors through sport participation, that can serve as role models for youth as they continue throughout their lives.
While constraints can affect access to sport participation for a variety of people in some way, it is known that people with disabilities (PwDs) may lack the physical and/or cognitive skills to participate in regular community programming, which can lead to an increase in perceived and/or real constraints (Block, Taliaferro, & Moran, 2007). It is also known that the presence of these constraints does not mean that these individuals will not participate; however, it does mean that they have more constraints to negotiate through in order to achieve participation (Jackson, Crawford, & Godbey, 1993). For the purpose of this study, PwDs will be self-identified and may experience challenges related to mobility, vision, hearing, cognitive development, mental health, emotional health, or other sensitivities.

To our knowledge, there is a gap in the broader understanding of how constraints affect access to sport participation in relation to youth with disabilities as well as what negotiation strategies may be utilized to minimize the impact of those constraints. Furthermore, much of the research that has been conducted has focused on attrition and motivations to participate, with few studies examining the constraints that inhibit initial participation in sport (Armentrount & Kamphoef, 2011; Balish, McLaren, Rainham, & Blanchard, 2014; Crane & Temple, 2015; Figueiredo, Gonçalves, Coelho e Silva, & Malina, 2009; Fraser-Thomas, Côté, & Deakin, 2008; Johns, Lindner, & Wolko, 1990; Spink, McLaren, & Ulvick, 2018). There has also been a significant amount of research conducted outside of the United States, a gap that is filled by the current study (Agnew, Pill, & Drummond, 2016; Alexandris & Carroll, 1997; Basterfield et al., 2016; Berk & McGivern, 2016; Darcy & Dowse, 2013; Darcy, Lock, & Taylor, 2015; Darcy, Maxwell, & Green, 2016; de Jong, Vanreusel, & van Driel, 2010; Eime et al., 2017; Kingsley &
In general, studies show the benefits that sport participation can have on an individual’s physical, psychological, and social health (Eime, Young, Charity, & Payne, 2013). These benefits can include but are not limited to increased self-esteem, increased social interaction, and fewer depressive symptoms, emotional regulation, problem-solving, goal attainment, social skills, and academic performance (Eime et al., 2013; Holt, Kingsley, Tink, & Scherer, 2011). As such, there is a correlation between sport participation and those positive developmental indicators, regardless of ability level (Holt et al., 2011).

More specifically, sports are widely accepted as a highly effective way to encourage growth and development in youth throughout their childhoods (Hills, King, & Armstrong, 2007). Appropriate programs have proven to support the development of both psychosocial skills and of fitness habits that will last long past the end of adolescence (Wendling, Flaherty, Sagas, & Kaplanidou, 2018). Research supports these positive effects of sports participation and asserts the need for programs to provide the opportunity for all individuals to participate in sports in their own way, regardless of whether or not they have a disability (Geidne & Jerlinder, 2016).

In 2006, the United Nations ratified the Convention on the Rights of Persons with Disabilities which adopts “a broad categorization of persons with disabilities and reaffirms that all persons with all types of disabilities must enjoy all human rights and fundamental freedoms” (United Nations, n.d.). The Convention focused on a social
development dimension, which includes the topic of participation in sport for PwDs (United Nations, n.d.). Unfortunately, despite this Convention, many PwDs still do not participate in sport, in part due to the limited number of opportunities that exist to accommodate the adaptations that may be required for participation (“About U.S. Paralympics | U.S. Paralympics | USOC,” n.d.). In fact, according to Activity Alliance (2013), PwDs are twice as likely to be physically inactive than non-disabled people. In addition to this, cultural upbringing and other demographic factors can lead to an increased impact on sport participation for PwDs, and therefore could serve to limit participation in a variety of ways, regardless of opportunity (Al Khateeb, Al Hadidi, & Al Khatib, 2014; Gaad, 2004; Groce, 1999; Scheer & Groce, 1988; Waldschmidt, 2018).

**Statement of the Purpose**

The primary purpose of this study was to help to fill the gap in research related to the perceived constraints to participation that PwDs encounter, with a focus on youth. Knowledge gained from the study will assist industry professionals and policy makers in making informed programs and policies when it comes to the development and support of sport for PwDs (Masmanidis, Gargalianos, & Kosta, 2009). A secondary purpose of the study was to explore any relationships between demographics and other significant lifestyle factors and sport participation that may exist for PwDs and to help address social issues that may be serving as constraints. These findings will then help to improve how services are offered while also contributing to existing scientific studies.
Significance of the Study

This study is important because it fills the gap that currently exists in constraints research surrounding youth with disabilities. As seen through the references in this study, there is a wide range of subject focus within the leisure constraints segment of the research industry. While literature does exist with respect to general disability constraints (Craig & Bigby, 2015; Darcy et al., 2016; Hammell, 2015) and even more specifically, general disability sport constraints (Burns & Graefe, 2007; Darcy et al., 2015; de Jong et al., 2010; Jaarsma, Dijkstra, Geertzen, & Dekker, 2014; McLoughlin, Fecske, Castaneda, Gwin, & Graber, 2017), there is still limited information on disability constraints specifically related to youth.

Furthermore, while disability research has traditionally taken a medical or social theory of disability approach (Darcy et al., 2016), this study examined the differences in attitudes toward disability and perceived constraints across various demographics in the same geographical region by examining the results through a cultural framework rather than a medical or social.

Research Questions and Variables

With the knowledge of the current gaps in the literature, the researchers have developed the following research questions to guide the study.

Research Question 1: What type of constraints to sport participation most affect youth with disabilities in the Harrisonburg/Rockingham County area?
Research Question 2: Are there any correlations between the constraints that those individuals experience and the frequency of their sport participation?

In order to gain information on these questions, the researchers tested the independent variable, which was the type of constraints experienced, in comparison with the dependent variable, the frequency of participation.
II. Review of the Literature

Theoretical Framework

Typically, the two main theoretical models that are found in disability research are the medical and social models (Darcy et al., 2016). The medical model was developed first and suggests that health professionals play a role in defining disability (Scheer & Groce, 1988). On the other hand, the social model has shifted views of disability towards the relationships of an impairment with the processes of exclusion associated with social, cultural, political, and economic environments within an individual’s community (Darcy et al., 2015).

For the purposes of this research, the researchers attempted to fill a gap in the existing literature and examine constraints to disability sport participation through a cultural theoretical lens. When looking through this cultural lens, the researchers worked under the assumption that attitudes towards inclusion are affected by cultural beliefs and values (Gaad, 2004). Waldschmidt (2018) suggested that while disability literature in English-speaking countries seems to be relatively well established, other linguistic areas of the world are lagging behind. This is important to keep in mind because all societies have different explanations for how and why disabilities occur, how PwDs should be treated, and what roles and/or responsibilities those individuals should play in society (Groce, 1999). Groce (1999) suggested that these differences in attitudes are attributed to three categories: causality, valued and devalued attributes, and anticipated adult status.

One of the more commonly known instances of a disparity in cultural assumptions of disability may come in the form of attitudes towards infanticide, specifically geared...
Sport participation for people with disabilities (Scheer & Groce, 1988). Scheer and Groce (1988), along with Gaad (2004), suggested that cross-culturally, infanticide is often times justified by the belief that infants born with disabilities are representative of an evil spirit. This practice still does not eliminate the cycle of disability because many disabilities or impairments do not show up in infancy (Scheer & Groce, 1988). Furthermore, in more impoverished areas, it is difficult to determine the number of PwDs in general as a result of unreliable information on quantity and categories of disability, making it difficult to plan effective policies or programs to serve those individuals (Gaad, 2004).

In general, collectivist cultures tend to have a more negative view of disability which could affect the way a parent or guardian goes about getting care for their child (Al Khateeb et al., 2014). In contrast, in Nepal, policymakers have set a goal to include all children with mild to moderate disabilities in primary education (Gaad, 2004). Perceptions of disability depend on aspects that are not only related to the symbols and meanings, discourses, beliefs and attitudes of a culture, but also on the analysis of material concepts such as things, objects, machines, technologies, and institutions (Waldschmidt, 2018). Additionally, there are certain instances that can contribute to a PwD’s social participation, particularly economic capacity, criteria for achievement, and standards for success (Scheer & Groce, 1988).

These cross-cultural attitudes towards disability provide a challenge to the stereotypical notions of Western society (Scheer & Groce, 1988). In some communities such as those of Martha’s Vineyard in Massachusetts, USA and Roosevelt Island in New York City, New York, USA, patterns of behavior have developed that accommodate the presence of PwDs in their everyday lives (Scheer & Groce, 1988). With the cultural
theoretical perspective in mind, this study is intended to shed more light on attitudes towards disability present in the diverse community in which the study is being conducted. As Gaad (2004) pointed out, chances of inclusion and other educational opportunities are affected by the construction of society and the beliefs and values that are traditionally held within. By being cognizant that disability is a form of inequality and PwDs experience different forms of discrimination and exclusion within different societies, this study will help to reveal the effect that some of those cultural prejudices have on the constraints that are faced in regard to sport participation.

**Constraint Literature**

Physical health, interpersonal relationships, self-esteem and social recognition can all be positive outcomes associated with extended participation in sport (Agnew et al., 2016; Reverdito et al., 2017). While sport has traditionally been regarded as an avenue through which to break down barriers among individuals, research has shown that many times there are constraints to participation that affect certain groups more than others (Kingsley & Spencer-Cavaliere, 2015). As such, leisure constraints have been defined as "the factors that are assumed by researchers and perceived by individuals to inhibit or prohibit participation and enjoyment in leisure” (Alexandris & Carroll, 1997). It is important to explore these constraints through research to better inform policies and structural practices, such as programming and funding efforts, that influence the participation of individuals who are affected by existing constraints (Casper, Bocarro, Kanters, & Floyd, 2011; Darcy et al., 2015).

By definition, a constraint is “any factor which intervenes between the preference for an activity and participation” (Crawford & Godbey, 1987, p. 120). Leisure research
Sport participation for people with disabilities

discusses three different kinds of constraints: structural, intrapersonal, and interpersonal (Crawford, Jackson, & Godbey, 1991; Kimm, 2009). For the purpose of this study, the researchers focused on Crawford, Jackson, and Godbey’s (1991) Hierarchical Model of Leisure Constraints.

Crawford and Godbey (1987) defined the three different types of constraints as follows:

1. Intrapersonal constraints – “individual psychological states and attributes which interact with leisure preferences rather than intervening between preferences and participation”
2. Interpersonal constraints – “the result of interpersonal interaction or the relationship between individuals’ characteristics”
3. Structural constraints – “constraints as they are commonly conceptualized, as intervening factors between leisure preference and participation”

Crawford, Jackson, and Godbey (1991) then went on to develop the Hierarchical Model of Leisure Constraints, which suggests that constraints must be overcome in a hierarchy, starting with intrapersonal, followed by interpersonal and then structural. This model is further developed and explained as a system of constraints that do not specifically prevent participation completely, but one that may result in modified participation as an individual negotiates through each proposed level of constraint (Jackson et al., 1993).

There have been a variety of projects designed to test the Hierarchical Model in different contexts (Alexandris & Carroll, 1997; Gilbert & Hudson, 2000; Hawkins, Peng, Hsieh, & Eklund, 1999; Kocak, 2017; Nyaupane & Andereck, 2008; Nyaupane, Morais,
Sport participation for people with disabilities

& Graefe, 2004; Pennington-Gray & Kerstetter, 2002; Walker et al., 2007; Young, Ross, & Barcelona, 2017). The majority of these articles found that the model is applicable to their respective subjects, which range from tourism to outdoor recreation to university recreation (Gilbert & Hudson, 2000; Kocak, 2017; Nyaupane & Andereck, 2008; Nyaupane et al., 2004; Pennington-Gray & Kerstetter, 2002; Walker et al., 2007; Young et al., 2017). Of the articles that did not support the model, the main argument against it in both examples is that the hierarchy of constraints is not necessarily applicable universally (Alexandris & Carroll, 1997; Hawkins et al., 1999). Both articles suggested further development of the model through additional research (Alexandris & Carroll, 1997; Hawkins et al., 1999).

With this data in mind, it is important to recognize that the model may not be applicable in every context (Alexandris & Carroll, 1997; Hawkins et al., 1999). To better understand the overall concept, Figure 1 provides a visualization of the Hierarchical Model of Leisure Constraints and how the three factors affect one another as presented by Gilbert and Hudson (2000).

Figure 1.

A Hierarchical Model of Leisure Constraints (Crawford et al., 1991)
Intrapersonal Constraints

The first level of constraints as proposed by Crawford, Jackson and Godbey (1991) is intrapersonal constraints. Examples include stress, depression, anxiety, religiosity, kin and non-kin reference group attitudes, prior socialization into specific leisure activities, perceived self-skill, and subjective evaluations of the appropriateness and availability of various leisure activities (Crawford & Godbey, 1987, p. 122).

As noted by Crawford and Godbey (1987), intrapersonal limitations to access can oftentimes be affected by a lack of self-efficacy, or perceived self-skill. As presented by Wendling et al. (2018) one’s belief in his or her ability to advance to the next level of competition has become a substantial factor in continued participation. In some communities, youth who do not begin to develop their skills at a young age are more limited in their opportunities as they get older (Kingsley & Spencer-Cavaliere, 2015). As a result, self-exclusion can become a factor when youth do not believe that they possess the skill level necessary to compete (Kingsley & Spencer-Cavaliere, 2015). This is further supported by the idea that athletes who participate in both community based and varsity level sports perceive fewer barriers to participation than those who participate exclusively in community based sport (Casper et al., 2011).

Challenges related to ability level can also be factors that impact people with disabilities (Jaarsma et al., 2014). In some cases, it is possible to find programs that allow them to participate in sport with their non-disabled peers (McLoughlin et al., 2017). In other instances, constraints such as the disability itself, health, and lack of energy can be directly linked to a lack of participation (Jaarsma et al., 2014). It is important to note that these factors can be present for people without disabilities as well but may be
magnified for those who experience some kind of impairment (Darcy et al., 2015). Along with intrapersonal challenges, Darcy, Lock, and Taylor (2015) described the challenges to access that PwDs face through six other key constraint factors. These types of constraints will be further discussed with structural constraints.

**Interpersonal Constraints**

Once an individual is able to negotiate through the intrapersonal constraints that are affecting them, they must negotiate through any interpersonal constraints that they might experience (Crawford et al., 1991). These constraints may influence preference and/or participation in activities that require companionship or may be the result of interactions with other people such as significant others (parents, friends, family, etc.), peers, or classmates (Crawford et al., 1991). From a youth perspective, parents could potentially play a large role in interpersonal constraints (Phillips & Awotidebe, 2015). From a disability perspective, Darcy, Maxwell, and Green (2016) suggested that any type of significant other can have an impact on an individual’s desire to do a task or activity, regardless of what that activity may be.

With regard to potential impact of significant others, Philips and Awotidebe (2015) suggested that parents’ attitudes and beliefs toward certain sports and even physical activity in general can impact the attitudes, beliefs, and participation of their children. This parental influence can be either positive or negative, depending on the parent (Phillips & Awotidebe, 2015). In some cases, parents might not allow their children to use certain facilities or organizations, thereby limiting their child’s participation in the activities associated with those things (Phillips & Awotidebe, 2015).
On the other hand, some parents have indicated that they believe the benefits of participation are greater than the associated risks (Wendling et al., 2018). Still, Wendling et al. (2018) suggested that those risks could be significant factors in the choice of sport for an individual’s child. They go on to assert how interpersonal relationships in general can affect an individual’s drive to begin or continue participation (Wendling et al., 2018). This suggests that significant people such as peers and coaches can also play a role in a child’s experience, which ultimately could be a factor in his or her desire to continue participation or to quit sports altogether (Wendling et al., 2018).

Darcy, Maxwell, and Green (2016) further developed the interpersonal dimension of constraints from a disability perspective in their research related to the use of technology within the disability population. They reaffirmed that especially in an environment where a PwD is relying on a support system, the significant others in those relationships can have a profound effect on the preferences and attitudes of the PwD (Darcy et al., 2016).
### Table 1

**General Constraint Resources**

<table>
<thead>
<tr>
<th>Title/Author</th>
<th>Purpose</th>
<th>Instrument</th>
<th>Participants</th>
<th>Procedure</th>
<th>Main Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>The relationship of sport participation to provision of sports facilities and socioeconomic status: a geographical analysis</td>
<td>Examined the geographical association between provision of sport facilities and participation in sport across an entire Australian state</td>
<td>De-identified membership registration data obtained from state sport governing bodies of four popular team sports and then analyzed using correlation and regression methods</td>
<td>N= 488,693</td>
<td>Pearson correlation coefficients and associated scatterplots were used to examine the relationships between participation rates, facility provision and SES; General linear models (GLM) were used to predict participation rate from facility provision rate</td>
<td>Participation rate was positively associated with provision of facilities, although this was complicated by SES and region effects</td>
</tr>
<tr>
<td>The influence of the social environment on youth physical activity</td>
<td>To explore the social environmental factors that influence the physical activity participation among female school-going adolescents in the Western Cape</td>
<td>Focus group interviews</td>
<td>N= 55 school going adolescents</td>
<td>2 classes randomly selected from each grade or stratum from every school to develop focus groups. Sessions lasted approximately one hour and were concluded when the participants could not think of anything more to add</td>
<td>Physical activity participation was influenced by the social, economic and physical environments that these adolescents live in</td>
</tr>
<tr>
<td>“Just Let Me Play!”—Understanding Constraints That Limit Adolescent Sport Participation</td>
<td>Examining middle school students’ perceived constraints to sport participation</td>
<td>Quantitative electronically delivered survey</td>
<td>N= 2465 6-8th graders</td>
<td>Each school provided a computer room in which surveys were preloaded for students to complete the survey</td>
<td>The sociodemographic characteristics of middle school students appear to be a significant factor in their perception of constraints to sport participation</td>
</tr>
<tr>
<td>Study</td>
<td>Title</td>
<td>Research Question</td>
<td>Methodology</td>
<td>Sample Size and Details</td>
<td>Findings</td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
<td>-------------------</td>
<td>-------------</td>
<td>------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Kingsley and Spencer-Cavaliere, 2015</td>
<td>The Exclusionary Practices of Youth Sport</td>
<td>To understand the sport involvement of young people living with lower incomes</td>
<td>Qualitative interviews – group or individual</td>
<td>N= 16; 10 children (13 – 18 years), 6 parents</td>
<td>Sports settings generally require that young people acquire abilities early in life and continue to develop as they age; The economic circumstances in which youth grew up impacted participation; Describes the experiences of youth in sport when they possessed less cultural capital than others</td>
</tr>
<tr>
<td>Wendling, Flaherty, Sagas, and Kaplanidou, 2018</td>
<td>Youth athletes’ sustained involvement in elite sport: An exploratory examination of elements affecting their athletic participation</td>
<td>To identify the underlying structure of components affecting the sport participation of elite youth athletes from the USA</td>
<td>A questionnaire consisting of 23 items related to motives and barriers to participation and created for this study</td>
<td>N = 1258 (566 boys and 692 girls) (672 between 10 and 13 years old and 586 between 14 and 18 years old</td>
<td>Proposes a 6-component solution to generate a holistic representation of responses to reasons for participation. These include college and professional aspirations and competence beliefs, coach and peer relationships, pressures from parents and coach, intrinsic and self-determined extrinsic motivation, external barriers, and non-self-determined extrinsic motivation.</td>
</tr>
</tbody>
</table>
Structural Constraints

As the Hierarchical Leisure Model of Constraints suggests, structural constraints are viewed as the last step that must be overcome before participation (Crawford et al., 1991). Examples of structural constraints include family life-cycle stage, financial resources, season and climate, the scheduling of work time, and reference group attitudes about the appropriateness of certain activities (Crawford et al., 1991). Structural constraints are the most commonly conceptualized and therefore the most researched; however, there are a few key sections that most significant for the purposes of this study.

Constraints for Disabled Participants

For PwDs, these structural constraints may be more impactful than for people without disabilities (Burns & Graefe, 2007). Hammel (2015) stated that in general, PwDs who experience a lower quality of life report that their life is more diminished by factors such as reduced community mobility, reduced life opportunities, inadequate income, limited choices and control, loneliness, boredom, and others as a result of the prejudices and discrimination that they are faced with. Craig and Bigby (2015) found that in some cases, seeing if a person could “fit in” and was “manageable” was a key part to decide whether or not an individual was allowed to continue participating in each activity.

In Burns and Graefe’s (2007) study of constraints to outdoor recreation participation for PwDs, they concluded that in general, people who are more constrained are older, come from a lower income level, and tend to have fewer people living in their household. On the other end of the age spectrum, de Jong, Vanreusel, and van Driel (2010) suggested that, unlike the norm with sport for people without disabilities, adults with disabilities tend to have more opportunities to participate in sport than do youth.
McLoughlin, Fecske, Castaneda, Gwin, and Graber (2017) suggested that the issue not only involves a lack of programming in certain areas, but also a lack of awareness of which programs are most appropriate for which individuals. This supports the assertion that there is little research on how people with different disabilities are confronted with different constraints (Jaarsma et al., 2014). Craig and Bigby (2015) suggested that there are four key features of active participation for PwDs: equal membership status, mutual reward for participants with and without disabilities, the ability to work cooperatively toward a common goal, and the effective use of expertise to develop capacity.

With that being said, there are multiple different ways to program for PwDs, some of which are more appropriate for certain groups than others (Block et al., 2007). Three of the more notable methods are specialized programming, reverse inclusion programming, and inclusion programming (Block et al., 2007). Specialized programming includes programs that are designed and offered specifically for PwDs, for example Special Olympics (Block et al., 2007). Reverse inclusion can look similar, for example Special Olympics Unified Sports, which “joins people with and without intellectual disabilities on the same team” (Block et al., 2007; Special Olympics, 2015). Inclusion programming is then “about the participation of all children and young people and the removal of all forms of exclusionary practice” (Block et al., 2007; Kiuppis, 2018). As Block et al. (2007) asserted, many communities already have programs like these present, but oftentimes it is a matter of making families aware of their existence and how they can be accessible to their children. In fact, even with the existence of programs
like this, research has shown that sports tend to be an area of life in which PwDs have a significantly less favorable experience than people who are not disabled (Kiuppis, 2018).

U.S. Paralympics gives people with physical disabilities and visual impairments the opportunity to compete in sport on both the national and international scales while also supporting grassroots efforts in local communities (“About U.S. Paralympics | U.S. Paralympics | USOC,” n.d.). While the most visible activity of U.S. Paralympics is through elite sports programming, the majority of the Americans who are eligible to compete in Paralympic sport do not have an opportunity to participate in their communities, an issue that U.S. Paralympics has made an area of emphasis (“About U.S. Paralympics | U.S. Paralympics | USOC,” n.d.).
### Table 2

**Disability Specific Constraints Resources**

<table>
<thead>
<tr>
<th>Title/Author</th>
<th>Purpose</th>
<th>Instrument</th>
<th>Participants</th>
<th>Procedure</th>
<th>Main Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sport Participation for Elite Athletes with Physical Disabilities: Motivations, Barriers, and Facilitators</td>
<td>To identify the motivations, facilitators, and barriers to sports participation of elite athletes with a physical disability</td>
<td>Semi structured interview questions</td>
<td>N= 23; 17 males, 6 females, mean age: 24.3 years</td>
<td>Participants were recruited through flyers and email at a large university and through an adapted sport organization; initial participants provided additional participants through snowball sampling</td>
<td>Athletes attributed participation to constructs of self-determination theory as well as overcoming specific barriers such as cost, time constraints, and lack of opportunity</td>
</tr>
<tr>
<td>Barriers to and facilitators of sports participation for people with physical disabilities: A systematic review</td>
<td>To provide an overview of the literature focusing on barriers to and facilitators of sports participation for all people with various physical disabilities</td>
<td>Search using the following keywords: “people with disabilities,” “athletes,” “exercise,” “sports,” “physical activity,” “motivation” and “attitude” in combination with “barrier,” “obstacle,” “hurdle,” “constraint” and “facilitator,” “motivate,” “encourage,” “benefit,” “advantage,” and “stimulate.”</td>
<td>Search of articles within the following four databases: Medline, Embase, Cinahl, and SPORTDiscus</td>
<td>Inclusion criteria – studies focused on physical disability, focused on sport(s), activity, physical activity, or other general or specific sporting/exercising activity; Exclusion criteria – studies focusing on cognitive impairments, hearing/visual impairments, studies focusing on biomechanical or physiological aspects of physical disability</td>
<td>Personal barriers were disability and health; environmental barriers were lack of facilities, transport and difficulties with accessibility</td>
</tr>
<tr>
<td>Enabling Inclusive Sport Participation: Effects of Disability</td>
<td>To examine the constraints to sport participation for people</td>
<td>Sport and Active Recreation: Disability Participation &amp; Non-</td>
<td>N= 1046; 53% were people with disabilities, 47% were attendants or</td>
<td>Electronic snowballing technique; disability organizations were used</td>
<td>5 structural factors had the most significant constraining impact on</td>
</tr>
</tbody>
</table>

---

*Note: The above table contains a partial list of resources for understanding sport participation for people with disabilities.*
<table>
<thead>
<tr>
<th>Title</th>
<th>Description</th>
<th>Methodology</th>
<th>Findings</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sport participation for people with disabilities</td>
<td>and Support Needs on Constraints to Sport Participation</td>
<td>Darcy, Lock, Taylor, 2015</td>
<td>To increase the understanding of how sports clubs, include children and adolescents with disabilities in their activities. A systematic search of peer-reviewed articles</td>
<td>There are very few peer-reviewed studies that describe how children and young people with disabilities are included in sports clubs’ regular, ongoing activities. Three reasons why children with disabilities are included in sports clubs: to promote the participation of youth with disabilities in mainstream sports, physical activity, or contact between children with and without disabilities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Search using the following words: disability or impairment; children and young people; sports clubs, sports or organized sports; and inclusion</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Search of articles within the following databases: Ebscohost (Academic Search Elite, SPORTDiscus, PsycINFO, ERIC, CINAHL Plus with Full Text, MEDLINE, PsycARTICLES); Web of science; Proquest (Social Services Abstracts and Sociological Abstracts); and PubMed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inclusion criteria – must deal with organized, voluntary youth sport, young people with some sort of disability or impairment, should describe how children are included, activity should be regular and ongoing; exclusion criteria – papers regarding special programs, and reverse integration/inclusion</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>There is a two-way relationship between mainstream and elite disability sport; mainstream sports serve a supply function to elite sports and elite sports serve as an inspiration function to mainstream sports.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>N=16, responses were divided with respect to each individual sport</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Distributed via the sport federations, followed up with email and telephone</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Questionnaire, supplemented by interviews with industry professionals and consultation of official websites</td>
<td></td>
</tr>
<tr>
<td>Quality of life, participation and occupational rights: A capabilities perspective</td>
<td>To highlight briefly what is known about environmental impacts on quality of life among people with impairments</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Hammell, 2015</td>
<td>Disability citizenship and independence through mobile technology? A study exploring adoption and use of a mobile technology platform</td>
<td>To assess the usefulness of the ICT in the development of community integration, training and support of the participants with disability whose supports needs ranged from low to very high</td>
<td>Interpretative qualitative design</td>
<td>N=15; 7 women, 8 men; 10 with intellectual disability, 4 with physical disability, 1 with cognitive ability</td>
</tr>
<tr>
<td>Darcy, Maxwell, Green, 2016</td>
<td>Critical Realism in Social Work Research: Examining Participation of People with Intellectual Disability</td>
<td>Offers a practical application of critical realism in the context of intellectual disability</td>
<td>Observation and interviews; ethnomethodology</td>
<td>N=5</td>
</tr>
<tr>
<td>Bigby &amp; Craig, 2015</td>
<td>Constraints to Outdoor Recreation: Exploring the Effects of Disabilities on Perceptions and Participation</td>
<td>Examines the impact of disability on national forest visitation, participation in outdoor recreation, and perceived constraints</td>
<td>Quantitative survey (administered twice)</td>
<td>N1 = 2,005 N2 = 847</td>
</tr>
</tbody>
</table>
**Socioeconomic Status**

Opportunities to participate in sport can be affected by many different factors such as cost, geographical location, cultural constraints, discrimination, etc. (Kingsley & Spencer-Cavaliere, 2015). Oftentimes, these factors are not necessarily presented clearly in the sports world but perpetuated by underlying assumptions or insecurities of participants who are influenced by these issues (Kingsley & Spencer-Cavaliere, 2015). Financial constraints are one of the most often cited reasons for a lack of participation in sport. However, it is important to note that those economic barriers may serve as larger hurdles for people of certain ethnicities or other marginalized groups than they might for a typical, middle-class white child (Berk & McGivern, 2016).

Socioeconomic status can have a significant impact on one’s access to sport, both directly and indirectly (Berk & McGivern, 2016; Casper et al., 2011; Eime et al., 2017; Kingsley & Spencer-Cavaliere, 2015; Wendling et al., 2018). According to Wendling et al. (2018), Americans spend more than seven billion dollars a year on youth sport travel alone. This high cost of participating in a competitive sport continues to support the idea that living with a lower family income can negatively impact one’s ability to participate in sport or at least increase the number of constraints that need to be overcome in order to make the benefits associated with sport a reality (Kingsley & Spencer-Cavaliere, 2015). Many public organizations and clubs do create fee waiver programs that are designed to help offset the costs of participation for individuals of a lower socioeconomic status (Berk & McGivern, 2016). While these programs help some families to participate, they are oftentimes not taken advantage of due to a reluctance to provide financial information.
or a general lack of awareness of the existence of the program (Berk & McGivern, 2016; Kingsley & Spencer-Cavaliere, 2015).

The financial barriers that are mentioned throughout existing research do not have to be directly related to registration fees; oftentimes, individuals from lower socioeconomic classes have difficulty with transportation and other factors deemed necessary to be successful in a sport setting (Berk & McGivern, 2016; Casper et al., 2011). As noted by Foster-Simeon (2013), many times in an affluent community, parents are more likely to have the ability to pay for uniforms, equipment, and travel, as well as serve as volunteers in the fields of coaching, league management, field maintenance, and carpool drivers.

In contrast, many families with a lower socioeconomic status require that the adults, regardless of whether it is a one or two parent household, work longer shifts and may work more evenings or weekends, making it more difficult for them to take off work to provide the transportation necessary for their children to get to a sporting event (Berk & McGivern, 2016). For reasons such as this, participation for children in these situations has become increasingly limited to after-school programs, whereas community based programs and competitive leagues tend to be limited only to those with the ability to pay, reinforcing the idea that children who come from wealthier households have access to a wider variety of opportunities for sport participation (Casper et al., 2011). While the research supports the claim that socioeconomic status is a key factor in physical activity and sport participation, it is also important to explore other constraints that could affect individuals, particularly in regards to gender and ethnicity (Kingsley & Spencer-Cavaliere, 2015).
Gender and Ethnicity

As Casper, Bocarro, Kanters, and Floyd (2011) suggested, different ethnicities may have more substantial barriers (or perceptions of barriers) than others. In their study, Latino students suggested higher perceived constraints in multiple different categories than did their Caucasian and African American classmates (Casper et al., 2011). Interestingly, even with this evidence of the difference in perceived constraints, non-white athletes have shown to have higher athletic career aspirations than that of their white counterparts (Wendling et al., 2018). Furthermore, non-white children also reported higher levels of extrinsic motivation in regard to recognition and praise and perceived pressures to be successful (Wendling et al., 2018).

In 1972, the United States federal government instituted Title IX, a comprehensive federal law that prohibits discrimination on the basis of sex in any federally funded education program or activity (“Overview Of Title IX Of The Education Amendments Of 1972, 20 U.S.C. A§ 1681 Et. Seq.| CRT | Department of Justice,” n.d.). Since the institution of this policy, women and girls have seen significant growth in their presence in the sports world; however, they are still faced with many challenges and hardships as a result of gender as evidenced by the experiences of the United States’ Women’s National Soccer team’s case filed with the Equal Employment Opportunity Commission in 2016 (Wahl & Keith, 2016). Title IX was a major factor in creating what appears to be equal opportunity; however, many girls still perceive constraints as a greater limiting factor than boys (Casper et al., 2011).

As noted by Hinojosa-Alcalde, Andrés, Serra, Vilanova, Soler, and Norman (2018), female progression in athletics can be examined in three different contexts:
opportunity, power, and proportion. By examining these three concepts, one can better understand the barriers that face female athletes and eventually how they can be overcome in the future (Hinojosa-Alcalde et al., 2018).

While Title IX has helped to even out structural opportunities for female athletes, there are overarching cultural attitudes about a female athlete’s ability to successfully play a sport that perpetuate many societies around the world (Llopis Goig, 2008). As an example, one can look at the number of female youth soccer players in the world and the proportion of overall soccer participants that they make up and see that there is a significant gap in participation between male and female athletes (Mintert & Pfister, 2015). While that gap could be attributed to many different factors depending on geographic location, it is important to recognize the large difference that is present on a global scale, much like the cultural differences that affect views towards people with disabilities (Rauzon, 2002).

From a power standpoint, it is possible that the difference in physical statures coupled with the common dominance of male-defined standards tends to legitimize the perceived difference in sex when it comes to sport (Serra et al., 2018). By applying this idea to youth sport, one can then start to draw parallels between the idea that girls are more likely to be affected by external constraints (interpersonal and structural) and to perceive a lower level of advancement opportunities in sport than their male counterparts, barring any other factors that may be in effect as well (Wendling et al., 2018).
Table 3

**Gender and Ethnicity Specific Constraints Resources**

<table>
<thead>
<tr>
<th>Title/Author</th>
<th>Purpose</th>
<th>Instrument</th>
<th>Participants</th>
<th>Procedure</th>
<th>Main Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding the gendered coaching workforce in Spanish sport</td>
<td>Focus on understanding the demographic and labor characteristics of coaches in Spain</td>
<td>Online questionnaire; 18 items, divided into three sections: individual characteristics, professional characteristics, and labor market characteristics</td>
<td>N=1685; 1386 men, 299 women; median age: 32.9 years</td>
<td>Questionnaire distributed electronically through Escola Catalana de l’Esport, (organization in charge of training and education of Catalan coaches) and via Catalan Sports Federations via email to active coaches</td>
<td>Fewer women than men access and participate in coach education in Catalonia and the working status of women was different to that of men; understanding gender influences and policies can help to benefit diversity and enrichment of coaching and other fields</td>
</tr>
<tr>
<td>Learning and representation: the construction of masculinity in football. An analysis of the situation in Spain</td>
<td>Examines the construction of masculinity through football in Spanish society; to analyze whether the greater pluralism and heterogeneity that characterize the construction of the masculinities in Spanish social life are also present in the world of football</td>
<td>Qualitative interviews and field observation</td>
<td>N= 17 interviews with fans, 5 interviews with groups of fans, 4 with coaches, 5 with PE teachers, and 6 with professional footballers</td>
<td>Not given</td>
<td>Spanish football continues to be a space in which hegemonic masculinity is reproduced, due to the influence of various social agents who facilitate and induce the learning and representation processes of this hegemonic masculinity</td>
</tr>
<tr>
<td>The FREE project and the feminization of football: the role of women in the</td>
<td>Explores whether, how and why football can be a source of a single European identity</td>
<td>Qualitative interviews</td>
<td>N=12 Danish females</td>
<td>Respondents were approached during football matches and then initial respondents</td>
<td>Many women enjoy football, follow a team, will travel abroad to see them compete and</td>
</tr>
<tr>
<td>Title</td>
<td>Methodology</td>
<td>Purpose</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>----------------------------------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sport participation for people with disabilities</td>
<td></td>
<td>provided names (snowball sampling)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>European fan community</td>
<td>through the exploration of women and their role as fans in the European football community; explores if and how do women participate in the European football culture?</td>
<td>enjoy both the sport and the live atmosphere</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mintert and Pfister, 2015</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The (in)visibility of gender knowledge in the Physical Activity and Sport Science degree in Spain</td>
<td>Explores the construction of gender relations in sport and physical activity within the Physical Activity and Sport Science (PASS) degrees programs in Spanish universities</td>
<td>Purposeful sampling – the 16 universities with the longest history of offering PASS degrees in their region; discourse analysis was used to analyze the contents of each handbook or textbook</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serra, Soler, Prat, Vizcarra, Garay, Flintoff, 2018</td>
<td>Case study</td>
<td>PASS programs tend to omit gender knowledge despite national policies requiring that they be included; recontextualization processes tend to result in the marginalization of gender knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
III. Methods

Procedure

With the consideration of the existing research, researchers developed two hypotheses to accompany the aforementioned research questions:

1. The perceived constraints of individuals in the community are a majority structural with an emphasis on the socio-economic dimension of structural constraints.

2. If the participants perceive a higher level of constraints, they are less likely to have participated in organized sport frequently in the past.

To test these hypotheses, we surveyed PwDs in a mid-sized rural town in the mid-Atlantic region of the United States. The list was obtained through a partnership with a regional non-profit organization. This organization is comprised of individuals with a variety of disabilities and relies on self-identification for the purposes of classifying disability type. The survey was designed to examine the constraints that affect each individual and to determine the extent to which each individual has been able to negotiate through those constraints thus far. The research design was quantitative in nature and entailed a self-administered questionnaire that was derived from Darcy et al.’s (2015) Sport and Active Recreation: Disability Participation and Non Participation Study.

Participants

The population of the study was gained through convenience sampling and consisted of 860 emails obtained from the database of a local disability sport organization. The list was comprised of roughly 70% families, 20% teachers, and 10%
disability advocates within the community. Of those emails, only 242 potential participants actually received and opened the email. Surveys were completed either by the PwD themselves or with the assistance of a caretaker, parent, guardian, family member, or friend in order to allow accommodations for those individuals who may not be able to complete the information on their own.

**Instrument**

A modified version of Darcy et al.’s (2015) questionnaire used in his study “Enabling Inclusive Sport Participation: Effects of Disability and Support Needs on Constraints to Sport Participation” was utilized in order to avoid concerns of reliability and validity. The questionnaire was modified to fit the population and then was distributed to a panel of experts who examined the dimensions of each question, suggested any additions or deletions, and provided general feedback on the readability and ease of the questionnaire. The panel of experts consisted of three researchers (professors, physical education educators, and disability advocates) who had expertise in working with PwDs. The panel of experts also received a categorization form that listed the intended dimension of constraints that each item was meant to test in order to verify the validity of the categorical dimensions.

To allow for a more inclusive study, the questionnaire was available in English and Spanish. The Spanish version was created with the help of professionals within the Modern Foreign Languages department at a local university and participants were able to choose between the two versions when completing the questionnaire.

The instrument tested the independent variable (type of constraints experienced) in relation to the dependent variable (level or frequency of participation). The
questionnaire was divided into three sections. The first section gathered information regarding the individual’s primary and secondary disability (if applicable) as well as about his or her current frequency of sport participation.

Participants were then given a list of statements that were associated with each of the three dimensions of constraints (intrapersonal, interpersonal, and structural) and asked to respond with how frequently they felt they were affected by each constraint. Responses were collected using a six-point Likert Scale (where one = never and six = always). In addition to the specific constraints that had been pre-listed, participants were given the opportunity to write in any other constraints that they felt were particularly impactful for them as well as to share information on the opportunities that they were aware of in their community.

The third and final section of the questionnaire was designed to gather demographic information that would be used for analysis upon collection. Questions included gender, age, and ethnicity.

Along with the questionnaire, individuals received both a consent and an assent form documenting the purpose of the study, any risks associated with participation, and a confidentiality statement to ensure participants that their information would not be shared. The consent and assent forms were also translated into both English and Spanish to ensure that participants had an appropriate understanding of the study.

**Data Collection**

As with all studies involving minors, the questionnaires contained both a consent and an assent form. The study was submitted to the Institutional Review Board at James Madison University before any data collection was initiated. In an effort to reach as many
people as possible, surveys were distributed via MailerLite, an email software that is used by the organization to contact their database. Emails were sent directly from this software to eliminate any privacy issues with the distribution of personal information as well as to increase the potential response rate with the knowledge that the potential participants were familiar with the system.

Individuals were contacted with an introductory letter as well as a link developed through Qualtrics, an online survey platform, to access the questionnaire electronically. Participants were then routed to a filter question that determined the appropriate version of the consent and assent forms as well as the most appropriate version of the questionnaire.

The first distribution of the survey took place in May 2019 and was followed by a series of 3 follow up appeals. The first appeal went to 860 email addresses with 242 opens and 37 clicks on the survey. The second appeal was sent a week later and went out to 861 email addresses with 221 opens and 19 clicks on the survey. The third appeal was sent about two weeks later to 858 email address with 204 opens and nine clicks on the survey. After three appeals, the response rate was still relatively low, so the researchers sent out one final appeal about one month later to 840 email addresses with 225 opens and 29 clicks on the survey link.

**Data Analysis**

Statistical Analysis was done using SPSS. Both descriptive and inferential statistics (t-test, Pearson Correlation, Mann Whitney-U) were used to give a stronger understanding of the data that was collected. Descriptive statistics such as mean, median, mode, and standard deviation were used in order to paint a broad picture of the responses
received. This provided the researcher with a more general analysis of the current perception of disability constraints in the regional area.

A Pearson correlation was also conducted to establish $p$ in order to determine the relationship between the independent variable (constraints) and the dependent variable (level or frequency of participation). The coefficient $p$ determined the relationship between the variables, with negative one or positive one representing either a negative or positive correlation or zero representing no correlation between the variables. T-tests were used to show the relationships between constraints and satisfaction and desire levels, and the Mann-Whitney U test was used to analyze the relationship between gender and constraint.
IV. Results

A 27% response rate was achieved with 66 respondents (n=242), which was calculated by comparing the number of respondents to the number of people who actually received and opened the email. There was some missing data that may be explained by the following factors: an unwillingness to disclose information, an inability to understand the reason for the question, or simply a lack of motivation to complete the whole questionnaire. This is important to recognize as there are many factors that could play into accessing PwDs (Bowker & Tuffin, 2004; Kroll, 2011; Tisdall, 2012). With the assumption that the missing data is missing completely at random, pairwise deletion was utilized to run the analyses, meaning that all available data for each variable was analyzed in order to ensure that the most information possible was considered. Consequently, n varies from variable to variable to allow the most data to be used.

Data analysis was performed using descriptive and inferential statistics. Descriptive statistics are reported through the calculation of a mean, median, and standard deviation related to each dimension of constraints, and further developed by breaking down the subdimensions of structural constraints. A Pearson Correlation was completed to determine the relationships between each constraint and how they impact reported satisfaction levels.

Table 4 below shows the data most relevant to the presence of each type of constraint: intrapersonal, interpersonal, and structural. Based on the data, the interpersonal constraint was the most commonly reported constraint (M: 3.38, S.D: 1.29), followed by intrapersonal (M: 3.15, S.D: 1.23,), and then structural (M: 2.96, S.D: 1.16).
Table 4

*Descriptive Statistics Relating to Dimensions of Constraint*

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Intrapersonal</th>
<th>Interpersonal</th>
<th>Structural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>33</td>
<td>34</td>
<td>37</td>
</tr>
<tr>
<td>Missing</td>
<td>33</td>
<td>32</td>
<td>29</td>
</tr>
<tr>
<td>Mean</td>
<td>3.147</td>
<td>3.3799</td>
<td>2.9634</td>
</tr>
<tr>
<td>Median</td>
<td>3.1667</td>
<td>3.5</td>
<td>2.6333</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>1.23419</td>
<td>1.28604</td>
<td>1.15921</td>
</tr>
</tbody>
</table>

Furthermore, due to a wide variety of subdimensions that comprise the structural dimension of constraints, descriptive statistics were used to further analyze and understand the presence of this specific constraint. Specifically, statistics were run for the *community/organization, time, equipment, economic, and transportation* subdimensions.

Table 5

Descriptive Statistics Relating to Subdimensions of the Structural Constraint

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Community/ Organization</th>
<th>Time</th>
<th>Equipment</th>
<th>Economic</th>
<th>Transportation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid Responses</td>
<td>32</td>
<td>32</td>
<td>21</td>
<td>30</td>
<td>24</td>
</tr>
<tr>
<td>Missing Responses</td>
<td>34</td>
<td>34</td>
<td>45</td>
<td>36</td>
<td>42</td>
</tr>
<tr>
<td>Mean</td>
<td>3.2917</td>
<td>3.0313</td>
<td>2.3571</td>
<td>2.6278</td>
<td>2.5347</td>
</tr>
<tr>
<td>Median</td>
<td>3.25</td>
<td>3</td>
<td>2</td>
<td>2.25</td>
<td>2</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>1.34915</td>
<td>1.42946</td>
<td>1.48444</td>
<td>1.31793</td>
<td>1.57443</td>
</tr>
</tbody>
</table>

Researchers also examined the correlation between intrapersonal and interpersonal constraints, intrapersonal and structural constraints, and interpersonal and structural constraints, as referenced in table 6 below. Intrapersonal constraints were found to have a moderate positive correlation with both interpersonal, r=.566, p=.001, and structural, r=.508, p=.003. Interpersonal constraints were also found to be moderately positively correlated with structural constraints, r=.51, p=.002.

Table 6

Correlations Between Constraint Types

<table>
<thead>
<tr>
<th>Constraint Type</th>
<th>Intrapersonal</th>
<th>Interpersonal</th>
<th>Structural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrapersonal</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.566**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.001</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>33</td>
<td>32</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>Pearson Correlation</td>
<td>.566**</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.001</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>32</td>
<td>34</td>
</tr>
<tr>
<td>Structural</td>
<td>Pearson Correlation</td>
<td>.508**</td>
<td>.513**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.003</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>33</td>
<td>34</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).

Finally, the researchers analyzed for any relationships between constraints and reported satisfaction levels related to sport and active recreation participation. To do this,
the respondents were split into two different groups, satisfied (>=4) and unsatisfied (<4). After running a T-test examining these two groups, the findings revealed that those who were satisfied experienced a lower level of perceived constraints, particularly with respect to equipment.

Table 7

Satisfaction Levels in relation to Constraint Type

<table>
<thead>
<tr>
<th>Constraint Type</th>
<th>Satisfied N</th>
<th>M</th>
<th>SD</th>
<th>Unsatisfied N</th>
<th>M</th>
<th>SD</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrapersonal</td>
<td>18</td>
<td>2.7963</td>
<td>1.1737</td>
<td>15</td>
<td>3.5678</td>
<td>1.2087</td>
<td>-1.86^</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>19</td>
<td>3.1684</td>
<td>1.4655</td>
<td>15</td>
<td>3.6478</td>
<td>0.9997</td>
<td>-.10</td>
</tr>
<tr>
<td>Structural</td>
<td>20</td>
<td>2.6963</td>
<td>1.2493</td>
<td>17</td>
<td>3.2777</td>
<td>0.9883</td>
<td>-1.55</td>
</tr>
<tr>
<td>Organization/Community</td>
<td>16</td>
<td>3.0635</td>
<td>1.3073</td>
<td>16</td>
<td>3.5198</td>
<td>1.3934</td>
<td>-0.96</td>
</tr>
<tr>
<td>Time</td>
<td>18</td>
<td>2.625</td>
<td>1.4278</td>
<td>14</td>
<td>3.5536</td>
<td>1.2978</td>
<td>-1.90^</td>
</tr>
<tr>
<td>Equipment</td>
<td>10</td>
<td>1.45</td>
<td>0.68516</td>
<td>11</td>
<td>3.1818</td>
<td>1.55359</td>
<td>-3.24**</td>
</tr>
<tr>
<td>Economic</td>
<td>17</td>
<td>2.1667</td>
<td>1.23603</td>
<td>13</td>
<td>3.2308</td>
<td>1.21056</td>
<td>-2.36*</td>
</tr>
<tr>
<td>Transportation</td>
<td>14</td>
<td>2.2917</td>
<td>1.46094</td>
<td>10</td>
<td>2.875</td>
<td>1.74105</td>
<td>-0.89</td>
</tr>
</tbody>
</table>

* Note: p^ < .10, p* < .05

Additionally, the researchers examined the presence of relationships between desire to participate and the presence of constraints. After running a T test of those who responded affirmatively to wanting to participate more in sport and active recreation against those who responded negatively, the data showed that those who have a higher level of desire experience a higher level of constraints in comparison to their low desire and/or motivation counterparts, especially with respect to community/organization, structural, time, and transportation.
To further develop these relationships, the researchers ran a Pearson Correlation. A moderately negative correlation was found between satisfaction levels and the presence of structural constraints specifically related to the equipment subdimension of the constraint, \( r = -0.59, p < 0.001 \). There was also a negative correlation between the desire to participate more in sport and recreation and the presence of structural constraints overall, \( r = -0.41, p < 0.001 \), the *community* subdimension of structural constraints, \( r = -0.44 \), and the *time* subdimension of structural constraints, \( r = -0.42 \). These correlations can be seen in table 9 below.
Table 9

Correlations between Constraint Type and Satisfaction/Desire.

<table>
<thead>
<tr>
<th>Constraint Type</th>
<th>Pearson Correlation</th>
<th>Satisfaction</th>
<th>Desire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrapersonal</td>
<td>-0.179</td>
<td>0.319</td>
<td>0.267</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>-0.258</td>
<td>0.141</td>
<td>0.241</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>Structural</td>
<td>-0.123</td>
<td>0.467</td>
<td>0.012</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>Organizational/Community</td>
<td>-0.158</td>
<td>0.388</td>
<td>0.012</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>Time</td>
<td>-0.074</td>
<td>0.688</td>
<td>0.018</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>Equipment</td>
<td>-0.590**</td>
<td>0.005</td>
<td>0.207</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Economic</td>
<td>-0.137</td>
<td>0.472</td>
<td>0.433</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Transportation</td>
<td>-0.148</td>
<td>0.49</td>
<td>0.078</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>24</td>
<td>24</td>
</tr>
</tbody>
</table>

When considering the relation between gender identification and experienced or perceived constraints, a Mann-Whitney U analysis was conducted. In terms of statistical significance, a gender difference in ‘satisfaction’ at p<.10 was found. In terms of descriptive statistics, there are some differences between genders; however, no gender significance was found with barriers. This is a result of the small sample size and thus relatively large standard deviations. These statistics are illustrated in Table 10.
Not statistically speaking, there were differences in rankings of the barriers between genders. For male PwDs, interpersonal constraints (followed by *organizational*, structural and *time*-related constraints) were the biggest barriers while intrapersonal constraints (followed by interpersonal, *organizational* and *economic* constraints) were the most critical barriers for female PwDs. These rankings can be seen in Table 11.
Table 10

*Gender Identity in Relation to Levels of Constraints.*

<table>
<thead>
<tr>
<th></th>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
<th>Mann-Whitney U</th>
<th>Asymp. Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>20</td>
<td>2.84</td>
<td>14.7</td>
<td>294</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>12</td>
<td>3.58</td>
<td>19.5</td>
<td>234</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>32</td>
<td></td>
<td>84</td>
<td>0.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrapersonal</td>
<td>Male</td>
<td>21</td>
<td>3.57</td>
<td>18.12</td>
<td>380.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>12</td>
<td>3.16</td>
<td>15.04</td>
<td>180.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>33</td>
<td></td>
<td>102.5</td>
<td>0.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpersonal</td>
<td>Male</td>
<td>23</td>
<td>3.06</td>
<td>19.52</td>
<td>449</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>12</td>
<td>2.79</td>
<td>16.69</td>
<td>217</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>36</td>
<td></td>
<td>126</td>
<td>0.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural</td>
<td>Male</td>
<td>19</td>
<td>3.4</td>
<td>17.34</td>
<td>329.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>13</td>
<td>3.14</td>
<td>15.27</td>
<td>198.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>32</td>
<td></td>
<td>107.5</td>
<td>0.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community/Organization</td>
<td>Male</td>
<td>22</td>
<td>3.03</td>
<td>16.5</td>
<td>363</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>13</td>
<td>2.5</td>
<td>16.5</td>
<td>165</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>32</td>
<td></td>
<td>110</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Male</td>
<td>12</td>
<td>2.5</td>
<td>11.5</td>
<td>138</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>9</td>
<td>2.17</td>
<td>10.33</td>
<td>93</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>21</td>
<td></td>
<td>48</td>
<td>0.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td>Male</td>
<td>17</td>
<td>2.43</td>
<td>13.82</td>
<td>235</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>12</td>
<td>2.88</td>
<td>16.67</td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>29</td>
<td></td>
<td>82</td>
<td>0.37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic</td>
<td>Male</td>
<td>14</td>
<td>2.76</td>
<td>13.11</td>
<td>183.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>10</td>
<td>2.23</td>
<td>11.65</td>
<td>116.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>24</td>
<td></td>
<td>61.5</td>
<td>0.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation</td>
<td>Male</td>
<td>26</td>
<td>3.69</td>
<td>22.37</td>
<td>581.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>13</td>
<td>3.08</td>
<td>15.27</td>
<td>198.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>39</td>
<td></td>
<td>107.5</td>
<td>0.055⁺</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction</td>
<td>Male</td>
<td>26</td>
<td>1.27</td>
<td>22.37</td>
<td>581.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>13</td>
<td>1.08</td>
<td>15.27</td>
<td>198.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>39</td>
<td></td>
<td>136.5</td>
<td>0.338</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: ⁺p < .10
Table 11

*Constraints by Rank in Relation to Gender Identity.*

<table>
<thead>
<tr>
<th>Rank</th>
<th>Male</th>
<th>Male mean</th>
<th>Female</th>
<th>Female mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C – Interpersonal</td>
<td>3.57</td>
<td>C – Intrapersonal</td>
<td>3.58</td>
</tr>
<tr>
<td>2</td>
<td>S – Organization</td>
<td>3.39</td>
<td>C – Interpersonal</td>
<td>3.16</td>
</tr>
<tr>
<td>3</td>
<td>C – Structural</td>
<td>3.06</td>
<td>S – Organization</td>
<td>3.14</td>
</tr>
<tr>
<td>4</td>
<td>S – Time</td>
<td>3.03</td>
<td>S – Economic</td>
<td>2.88</td>
</tr>
<tr>
<td>5</td>
<td>C – Intrapersonal</td>
<td>2.94</td>
<td>C – Structural</td>
<td>2.79</td>
</tr>
<tr>
<td>6</td>
<td>S – Transportation</td>
<td>2.76</td>
<td>S – Time</td>
<td>2.50</td>
</tr>
<tr>
<td>7</td>
<td>S – Equipment</td>
<td>2.50</td>
<td>S – Transportation</td>
<td>2.23</td>
</tr>
<tr>
<td>8</td>
<td>S – Economic</td>
<td>2.43</td>
<td>S – Equipment</td>
<td>2.17</td>
</tr>
</tbody>
</table>

| Total Mean | 3.12 | Total Mean | 2.94 |
| C mean     | 3.18 | C mean     | 3.15 |
| S mean     | 3.06 | S mean     | 2.79 |
V. Discussion

Based on the results, one can deduce several findings and analyze them as they relate to what was previously found in the literature. These findings can be broken down into a few key points:

- The interpersonal constraint was the most commonly cited constraint.
- The community/organization subdimension of structural constraints is the most commonly experienced.
- There is a positive correlation between the presence of all three dimensions of constraints.
- There are negative correlations between satisfaction levels and equipment availability and between the desire to participate and the presence of structural constraints.
- The researchers were unable to identify a statistical gender significance in relation to barriers; however, there were differences in how each gender ranked different types of constraints.

The first finding was that the interpersonal constraint was the most commonly cited constraint, or barrier, to participation that PwDs experience related to their participation in sport or recreation activities. As the statistics show, the most commonly cited constraint was the interpersonal constraint, defined by Crawford and Godbey (1987) as “the result of interpersonal interaction or the relationship between individuals’ characteristics”, followed by the intrapersonal constraint, defined as “individual psychological states and attributes which interact with leisure preferences rather than intervening between preferences and participation”, and then followed by structural
constraints, “constraints as they are commonly conceptualized, as intervening factors between leisure preference and participation”.

This finding is of interest because if, based on Crawford, Jackson, and Godbey’s (1991) Hierarchical Model of Leisure Constraints, individuals cite interpersonal constraints as being the most commonly experienced, that would suggest that the intrapersonal constraints have been overcome. This claim is not entirely supported by the data, as it shows that intrapersonal constraints were the second highest most cited constraint type. This brings about a question of whether respondents who responded affirmatively for the presence of interpersonal constraints were also the ones who responded affirmatively for the presence of intrapersonal constraints. It is also possible that respondents responded to one or the other, not both, and are simply at a different stage of the Hierarchical Model. Unfortunately, without the presence of any qualitative data to support the statistics, it is difficult to know for sure what the root cause of those results is.

If we consider the statistics surrounding the presence of structural constraints, we could deduce that the Hierarchical Model is supported in regard to constraints to PwDs by the fact that many individuals perceive interpersonal constraints to be a factor in non-participation. In other words, the lower perception of structural constraints makes sense because a higher number of individuals have yet to navigate the interpersonal constraint. The Hierarchical Model would suggest that because they have not navigated those constraints, the perception of structural constraints may be lower, regardless of the actual presence of those constraints.
With these results in mind, it is important to consider that the instrument that was distributed to the population was intended to be completed by a PwD. Since the population consists largely of adolescents, it is possible that they do not entirely understand certain concepts related to non-participation or reasons relating to their participation or non-participation in sport and recreation. Specifically, it is important to recognize that the respondents may perceive their reason for non-participation as related to a parent or significant other, as referenced by Darcy, Maxwell, and Green (2016) and Phillips and Awotidebe (2015). While this may be the case, there may also be larger structural constraints that are affecting their participation that the respondents are unaware of as a result of their relationships with those significant others.

The results further break down the presence of certain subdimensions within the structural constraint dimension due to the relatively vague and wide encompassing definition of structural constraints. Based on these results, the community/organization subdimension was the highest reported experienced structural constraint. This concept is particularly interesting considering the questionnaire was distributed through a database for an organization that was specifically established to educate and provide recreation opportunities for PwDs in the local community. Without having qualitative data to further develop the reasons or specific examples of why community/organization may be a significant constraint, it is difficult to definitively say what may be the cause of this. The presence of this organization, as well as the presence of known experts in the community, does, however, lead to questions related to the magnitude of this constraint in areas that do not have any kind of central organization through which to distribute and find information on resources and available opportunities.
Also worth noting is the fact that all three dimensions of constraint 
(*intraperonal, interpersonal, and structural*) were reported to have a positive correlation with the others. This finding suggests that wherever one type of constraint is present, the others are present as well. This could certainly be true depending on how the respondents understood the questions; however, it is unclear if this information can be considered accurate. The intention of the study was to explore the perceived constraints; therefore, if one assumes that respondents no longer perceive certain constraints as inhibitive (due to the fact that participants have overcome them), this statistic would provide inconclusive evidence in regard to whether or not the Hierarchical Model can be supported.

On the other hand, it is possible that respondents answered the questions related to all constraints that they currently do or have experienced in the past, regardless of whether they have been able to negotiate through them. If this is the case, then this data does not support the universal application of the Hierarchical Model, a finding that is also suggested in Alexandris and Carroll (1997) and Hawkins et al. (1999). Instead, it supports the idea that all three of these constraints can co-exist in different situations and may all play roles in how an individual perceives their opportunity to participate in sport and recreation.

Another salient finding revealed a negative correlation between levels of satisfaction and the presence of one specific constraint. However, that correlation only applied to the *structural* constraint, specifically within the *equipment* subdimension. While not all PwDs may experience *equipment* as a constraint, this finding is particularly interesting when considering individuals with physical disabilities. For this specific
Sport participation for people with disabilities

population, lack of equipment can play a major role in satisfaction levels and could ultimately affect the desire to continue efforts to negotiate through constraints.

Furthermore, the presence of a negative correlation between satisfaction levels and overall structural constraints supports the claim that just because individuals do not participate in sport or recreation does not mean that they do not have a desire to participate. In fact, this statistic proves that individuals who perceive fewer constraints are more satisfied with their participation levels. It is important to keep in mind that this does not necessarily mean those individuals do participate. They may simply have no desire to participate, however, the lower level of constraints allows them to take ownership over their reason for non-participation, resulting in higher levels of satisfaction. Conversely, this statistic supports that individuals who perceive higher levels of constraints are not satisfied with their levels of participation. These individuals want to participate in sport and recreation, but the perceived constraints are posing barriers that are inhibiting them from realizing those desires.

From a cultural perspective, there was not sufficient data to complete an analysis related to ethnicity; however, the researchers were able to make deductions regarding descriptive statistics related to gender differences. The most notable finding from these statistics is that while males did rank the interpersonal constraint as the most commonly experienced constraint, females listed interpersonal constraints as number two, outranked only by intrapersonal constraints. This finding is of interest when thinking about the discussions of researchers such as Casper et al. (2011), Llopis Goig (2008), Mintert and Pfister (2015), and Serra et al. (2018), who have all conducted research relating to general sport participation for females. Further research to identify how being female
AND having a disability may be influencing each individual can be useful in isolating the factors that are actually creating the constraints.

While these findings are important, perhaps the most salient finding is that the community/organization subdimension was the most commonly cited structural subdimension. As discussed previously, the idea that this constraint is so prevalent can be found in other studies as well, notably Hammell (2015), McLoughlin, Fecske, Castaneda, Gwin, and Graber (2017), and Craig and Bigby (2015). What makes it the most intriguing is that this constraint continues to be an issue for PwDs despite the presence of both an organization created specifically to target and program for this population as well as known industry experts in the local community who work to champion these opportunities. This finding should lead researchers and industry professionals to rethink their ways of approaching marketing techniques, outreach, programming, and general social experiences for PwDs so as to better promote the services that they are offering.

**Limitations**

As with all research, there are limitations to this study. Due to the missing data, researchers were required to draw conclusions using pairwise deletion rather than having complete data for every respondent. By distributing via email, it is possible that many potential respondents did not receive the questionnaire as a result of inactive email addresses or a high volume of emails. Furthermore, the facilitation of the questionnaire online does not provide the respondents direct access to the researchers, and therefore may have caused difficulties in clarifying specific questions and/or compromised the ability of certain individuals to complete the questionnaire.
The difficulties collecting responses and relevant data also lend to the conclusion that the methodological approach utilized in this study may have served as a limiting factor to collecting responses. Future research efforts should consider this when developing the approach to data collection and analysis.

It is also important to note that constraints affect individual people in different ways. Individuals may perceive constraints differently depending on their backgrounds. By distributing the survey through a non-profit that targets PwDs, the respondents all have at least basic exposure to opportunities available to them. As a result, people who are registered with the group may experience more engagement with the disability sport community, as opposed to people who are not currently engaged with an organization. People may also experience constraints due to a variety of factors and therefore it may be difficult to isolate constraints experienced as a result of disability from constraints that may be experienced due to other factors. While the instrument was translated into two different languages, there are many languages that were not available that could serve as a limiting factor to the population.

Lastly, the use of the Hierarchical Model leads to questions related to the applicability of such a model due to its age and the significant societal and technological changes that have taken place since its development. Additional research would be useful to determine how relevant the model is to today’s society in relation to its relevance upon its development.
VI. Implications

As a result of this study, sport managers, recreation professionals, and physical education teachers can better provide and cater to individuals with disabilities, a population that is oftentimes marginalized. By understanding these issues, they can improve the services that are offered for PwDs in their respective fields and create a more inclusive culture overall.

As the findings show, the interpersonal constraint can be a major factor in the participation or nonparticipation of PwDs. Professionals should explore which factors are exactly causing the presence of these constraints. For example, a potential interpersonal constraint that could play a major role in this study is the fear of being ridiculed or not having friends with whom to participate. These constraints can be overcome by instituting programs that pair participants up with mentors or buddies and working to build a more social environment. These buddies can be PwDs or other individuals in the community who wish to get involved and participate in an activity; the most important part is intentionally pairing individuals who can connect and support each other in their involvements, making the activity or organization less overwhelming.

Another common interpersonal constraint is relationships with parents/significant others. In that case, physical education teachers can be even more impactful by expanding the focus and availability of school sponsored participation opportunities, both in class and in extracurricular activities. The increased ease of participation then, could lessen the responsibility and/or influence of the parent or significant other when it comes to desire and/or motivation to participate.
Furthermore, with the realization that the community/organization subdimension is the most commonly cited structural constraint, programmers need to explore other avenues through which to communicate the availability of programming to PwDs. Information can be dispersed through local schools, churches, and hospitals to reach the people who are regularly visiting those places. The creation of community ambassadors could also be valuable resources as organizations can then rely on those ambassadors to provide more grassroots marketing. This would allow them to connect with PwDs on a personal level while also providing a face and a voice for those involved in an organization, rather than being a mysterious unknown.

Nevertheless, the results also showed that there is a positive correlation between the presence of all types of constraints, meaning that while interpersonal constraints were the most commonly cited, all three dimensions of constraint exist and impact PwDs. With this in mind, professionals and organizations should always be in tune to what is going on within their community. Hosting open forums, local community days, or even simply having an anonymous comment box can all serve as approaches that can help to identify constraints in a community without having to self-identify, eliminating any concerns related to openly voicing struggles or barriers.

With negative correlations between satisfaction levels and equipment availability and between desire to participate and overall structural constraints, industry professionals will need to find a way to make sure that equipment is accessible and usable by everyone. Accessible parks and playgrounds and community centers that offer adapted equipment free of charge for community members are just two ways that this equipment constraint can be overcome. The institution of grant and donation programs to support wider access
to adaptive equipment, whether run through a public or private organization, can also be a good way to support individuals who may experience constraints related to equipment as a result of financial factors.

In regard to the final finding related to gender differences, this study highlights the idea that there may be some kind of inner struggle that is influencing females towards non-participation more so than males, oftentimes an issue related to confidence. Providing young women with role models who experience their same challenges may be a way to help overcome this specific influence. For example, this can be done by featuring a local community member who is female and has a disability on their advertisements, creating female ambassadors within the community, or simply placing larger emphasis on the successes of female athletes with disabilities. This visibility can then show and remind girls and women that they are capable and able to participate, and in turn help to negotiate through the intrapersonal constraints that may be inhibiting their participation.
VII. Conclusion

The purpose of this study was to identify and explore the constraints affecting PwDs in an effort to better understand how to serve this oftentimes marginalized population. Through the distribution and analysis of a questionnaire designed to quantify the presence of each constraint type, the researchers identified that there are a number of constraints that influence participation or non-participation within this population. While all forms of constraint are unquestionably present, there are some that are felt more than others, most notably interpersonal constraints and community/organization and equipment related constraints.

With this knowledge, industry professionals such as parks and recreation managers, sport managers, physical education teachers, and anyone else who may serve in a role that involves programming for PwDs can identify potential barriers to participation before they have an opportunity to impact the individuals for whom they are programming. This advanced knowledge can then limit the number and severity of constraints that must be negotiated through in order to achieve participation in active sport and recreation.
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https://doi.org/10.1109/APCC.2016.7581477


Sport participation for people with disabilities


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