AN ABSTRACT OF THE THESIS OF

Bridgette M. Schram for the degree of Master of Science in Kinesiology presented on June 12, 2018.

Title: Relationship between disability orientation and participation of children with disabilities in aquatic programs

Abstract approved:

______________________________________________________

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Increased physical activity (PA) in children has been linked to improved quality of life, as well as the establishment of life-long PA habits that lead to improved health outcomes. The literature suggests that children who participate in organized sport programs engage in more PA than children who do not. Notably, only 33% of children with disabilities participate in organized programs for two or more hours each week, compared to 76% of children without disabilities. Numerous barriers limit the participation of children with disabilities in organized sport programs, which can be broken down into personal and environmental factors. Characteristics of an aquatic environment have the potential to minimize some of these barriers. A programs’ leadership is important in creating an inclusive environment and may remove these barriers. Disability orientation, an individual’s attitude towards persons with disabilities, has been discussed in prior research as a factor that shapes and influences behaviors. However, few studies have fully examined the relationship between an individual’s disability orientation and their behavior. Therefore, the purpose of this
study was to examine the association between an aquatic program leadership’s
disability orientation and the opportunities offered for children with disabilities, and
their participation, in aquatic programs. This study also measured potential variables
that may influence the relationship between the aquatic director’s disability
orientation and the participation of children with disabilities in aquatic programs.
Lastly, the relationship between the aquatic directors’ disability orientation and their
intentions to provide opportunities for children with disabilities in their aquatic
programs was examined. A survey was completed by 185 aquatic directors from
across the United States. The survey consisted of items measuring the disability
orientation of the aquatic director, using the Questionnaire on Disability Identity and
Opportunity (QDIO), as well as items measuring the accessibility of the facility for
individuals with disability, program marketing for opportunities available to children
with disabilities, staff competency with children with disabilities, and delegation of
financial resources to support opportunities for children with disabilities.
Additionally, the aquatic directors’ self-efficacy in providing opportunities for
children with disabilities and intentions to provide opportunities for children with
disabilities were measured. Logistical and linear regressions were completed to
identify the relationships between key variables, and to examine for modification
effects. The results found that the aquatic director’s view on the medical model was
not directly associated with providing opportunities for children with disabilities (OR
= 0.76, \( p = 0.59 \)) or the proportion of children with disabilities participating in their
aquatic programs (\( \beta = -0.44, \ p = 0.15 \)). Additionally, no direct relationship was found
between the aquatic director’s view of the social model and providing opportunities
for ($OR = 0.25, p = 0.64$) or the participation of ($\beta = 0.00, p = 0.97$) children with disabilities in their aquatic programs. The relationship between disability orientation and the proportion of children with disabilities participating in the aquatic program was not influenced by the four moderating variables. Further, no significant relationship was found between the director’s self-efficacy or intentions and the participation of children with disabilities. However, the results revealed a significant relationship between the aquatic directors’ disability orientation and their intention to provide opportunities for children with disabilities ($\beta = 0.50, p < 0.01$). This suggests that aquatic directors with higher scores on the social model had greater intentions to provide opportunities to children with disabilities in their programs. Although a direct link between aquatic directors’ disability orientation and their behaviors are inconclusive, findings reveal a new and important link between disability orientation and intentions. Future studies should examine this link further, as well as evaluate improved measurements of aquatic director behavior. A better understanding of behavior by leadership in physical activity organizations could improve understanding and decrease barriers to participation from children with disabilities.
Relationship between Disability Orientation and the Participation of Children with Disabilities in Aquatic Programs

by
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I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

Bridgette M. Schram, Author
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Chapter 1: Introduction

Participating in physical activity is linked to numerous positive health benefits, including reduced risk of cardiovascular disease (Powell, Thompson, Caspersen, & Kendrick, 1987), lower cholesterol and blood pressure (Kawabe, Murata, Shibata, Hirose, & Tsujioka, 2006; Strong et al., 2005), and increased quality of life for various populations (Hamm & Yun, 2018; Norris, Carroll, & Cochrane, 1992; Wafa et al., 2016). Starting physical activity while young not only promotes these benefits early but can help create life-long healthy habits (Moore et al., 2003). It is recommended that children participate in at least 60 minutes of physical activity each day in order to receive the benefits of physical activity (US Department of Health and Human Services, 2008).

Failing to meet the recommendations for physical activity is of increased concern for children with disabilities because they are at risk of developing secondary conditions (Rimmer, Yamaki, Lowry, Wang, & Vogel, 2010). Secondary conditions are preventable, indirect physical and mental outcomes resulting from a primary disabling condition (Krause & Bell, 1999; Wilber et al., 2002). Some of the most common secondary conditions experienced are increased cholesterol, risk of diabetes and cardiac disease, as well as symptoms of depression and anxiety (Kinne, 2008; J. Rimmer, Chen, & Hsieh, 2011; Rimmer et al., 2010). Risk for all of these secondary conditions is ameliorated by increased physical activity (Mitra, Wilber, Allen, & Walker, 2005; Wilber et al., 2002). Yet, the majority of children with disabilities fail to meet the recommended amounts of physical activity (Einarsson et al., 2015; Foley, Bryan, & McCubbin, 2008; Maher, Williams, Olds, & Lane, 2007; Ryan, Forde,
Hussey, & Gormley, 2015a) and engage in significantly less moderate to vigorous activity (Jung, Leung, Schram, & Yun, 2018) than their typically developing peers.

Children obtain almost 25% of their weekly physical activity in organized sports programs (Wickel & Eisenmann, 2007) and children who participate in sport programs outside of school show increased amounts of weekly activity than those who do not participate in sports programs (Eichinger, Schneider, & De Bock, 2017). However, children with disabilities participate in less hours of organized sport programs than children without disabilities. Einnarson et al (2015) found that only 33% of children with disabilities participated in two hours or more of organized sport programs, compared to 76% of children without disabilities. Personal and environmental factors have been identified as barriers or facilitators of participation in physical activity for children with disabilities (Barr & Shields, 2011; Bloemen et al., 2015; Columna, Rocco Dillon, Norris, Dolphin, & McCabe, 2017; Rimmer et al., 2004).

Personal factors are those that come from the individual and/or family and often consist of cost, time conflicts, intention of engaging in physical activity, self-efficacy and health condition type and severity. Environmental factors are those controlled by things outside of the family or individual, including availability of programming, accessibility, and accommodation of programs. The most common environmental barriers influencing the participation of children with disabilities are perceived availability and accessibility of existing programs (Barr & Shields, 2011; Bloemen et al., 2015; Columna et al., 2017; Rimmer et al., 2004). Accessibility encompasses architectural, communication and attitudinal considerations, including
the program’s preparation for accommodating individuals with various impairments, physical accessibility of the facilities, self-efficacy of staff to work with persons with disabilities, and the availability of information and resources regarding programs for individuals with disabilities.

Mackenzie et al. (2016) identified leadership as one of the main influences in the extent to which a program provides an inclusive environment. Based on the perception of program staff, the leadership of the program supported the participation of children with disabilities by hiring appropriate staff, providing opportunities for professional development, and ensuring the necessary resources were financially available (Mackenzie et al., 2016). These reports show a link between program leadership and the environmental factors that influence participation of children with disabilities.

Aquatic programs provide a great opportunity for children with disabilities to engage in organized physical activity while minimizing some of the personal factors that can serve as limitations. The buoyancy of the water decreases gravity’s effects on the individual, allowing movement in the water that is otherwise limited on land (Lai et al., 2015). The water also allows for the unloading of joints and increased postural support for individuals with poor postural control or balance, allowing for increased independence and opportunities to interact with peers (Kelly & Darrah, 2005). The water can provide a setting that decreases the personal barriers experienced when children with disabilities try to engage in physical activity. However, this does not mean all aquatic programs provide opportunities for participation in the programs for
children with disabilities. It is important to utilize and maximize the benefits of aquatic programs for children with disabilities.

Disability orientation, or an individual’s view toward people with disability (Olkin, 2002), is described by the medical model and the social model in current literature (Abberley, 1987; Beaudry, 2016; Boorse, 1977; Darling, 1979; Darling & Heckert, 2003; Nind, Flewitt, & Payler, 2010; Olkin, 2002). The medical model approaches disability by identifying the symptoms and/or etiology of the condition (Boorse, 1977). With a long term goal of eliminating the disability, those who align with the medical model often view the individual’s impairments as deficits (Darling, 1979). The social model introduces the idea that disability is a result of social influences interacting with an individual’s impairment (Nind et al., 2010). Those who align with the social model may believe that the individual does not need to “fit” into society, but that society should accommodate to the needs of the individual (Darling & Heckert, 2010). An individual’s alignment with both the medical and social disability models, or their disability orientation, is believed to have an influence on their behaviors towards people with disabilities. However, limited research has been conducted to examine this relationship. Dirth and Branscombe (2017) examined the relationship between disability orientation and perception of disability related issues and policy supporting accessibility for individuals with physical disabilities. The authors reported individuals who strongly align with the social model are more likely to support pro-disability policy than individuals with strong alignment to the medical model. This study demonstrates an important link between disability orientation and
personal beliefs, however it neglects to connect beliefs to an individual’s behaviors towards persons with disability.

There are multiple theoretical frameworks, including the Theory of Planned Behavior (Ajzen, 1985) and the Theory of Triadic Influence (Flay & Petraitis, 1994), that suggest an individual’s intentions directly influence or translate to behavior. This relationship has been supported by many previous literature in adapted physical activity (Jeong & Block, 2011; Jin & Yun, 2013; Taylor & Yun, 2012). To date, disability orientation has not been incorporated into these models in the context of organized physical for children with disabilities. Knowledge of how program directors’ disability orientation influences their behaviors towards promoting the participation of children with disabilities in their program would help guide future research and interventions targeting methods to decrease barriers.

The purpose of this study was to examine the association between aquatic program directors’ disability orientation and the opportunities offered for children with disabilities, as well as their enrollment rate. The secondary objective of this study was to examine other factors to further explore how aquatic program directors’ disability orientation impacts program offerings and the participation of children with disabilities. To fulfill this purpose, the following research questions are explored.

*Research Question 1:* To examine the association between the aquatic program director’s disability orientation and participation of children with disabilities in their aquatic programming.
Working hypothesis 1: There is a significant relationship between aquatic program opportunities and the director’s view on the social model of disability.

Working hypothesis 2: There is a significant relationship between the participation of children with disabilities in the aquatic program and the program directors’ view on the social model of disability.

Working hypothesis 3: There is a significant relationship between aquatic program opportunities for children with disabilities and the director’s view on the medical model of disability.

Working hypothesis 4: There is a significant relationship between the participation of children with disabilities in the aquatic program and the program directors’ view on the medical model of disability.

Research Question 2: To identify the potential factors that moderate the relationship between the aquatic director’s disability orientation and the participation of children with disabilities in their aquatic programs.

Working hypothesis 5: The accessibility of the physical environment for individuals with disabilities, program marketing for opportunities available to children with disabilities, quality of staff in working with children with disabilities, and delegation of financial resources to support opportunities for children with disabilities will have significant moderation effects on the relationship between the participation of children with disabilities and the aquatic director view on the social model of disability.
Working hypothesis 6: The accessibility of the physical environment for individuals with disabilities, program marketing for opportunities available to children with disabilities, quality of staff in working with children with disabilities, and delegation of financial resources to support opportunities for children with disabilities will have significant moderation effects on the relationship between the participation of children with disabilities in the aquatic programs and the aquatic director view on the medical model of disability.

Research Question 3: To examine the relationship between the aquatic program director’s self-efficacy to provide and their intentions to provide opportunities for children with disabilities and the participation of children with disabilities in their aquatic programs.

Working hypothesis 7: The self-efficacy of the aquatic director to be able to provide opportunities for children with disabilities in their program and the intentions of the aquatic director to provide opportunities for children with disabilities in their program will have a significant influence on the participation of children with disabilities in the aquatic programs.

Research Question 4: To examine the relationship between the aquatic program directors’ disability orientation and their intention to provide opportunities for children with disabilities in their aquatic programs.

Hypothesis 8: The aquatic director’s social model score will be significantly correlated to their intentions to provide opportunities for children with disabilities in their aquatic programs.
Hypothesis 9: The aquatic director’s medical model score will be significantly correlated to their intentions to provide opportunities for children with disabilities in their aquatic programs.

Delimitations of Study

• This study delimits physical activity opportunities of children with disabilities within aquatic program.

• This study delimits the perception of aquatic program directors in the United States who have been in their current responsibilities for over 1 year.

• This study delimits aquatic program directors who are responsible for the development, implementation, and evaluation of programs and/or the management of employees through hiring, firing, and training responsibilities.

Assumptions of Study

• That each participant answered the survey honestly and to the best of their knowledge.

• That the survey has obtained a sample that is representative of the U.S. population of aquatic program directors.

• The survey was able to obtain the accurate information, including a measurement of the opportunities for and participation of children with disabilities in the aquatic programs, aquatic director’s disability orientation, and the factors and barriers to participation in an aquatic program.
**Limitations**

- Participants may interpret the term disability differently. This may affect how the program directors responded on the survey.

- There is no validity evidence for the proportion measurement representing the participation of children with disabilities in aquatic programs.

- Low reliability coefficients for the disability orientation scales may affect the relationship between disability orientation and children with disabilities’ opportunities or participation in aquatic programs.

- Those who filled out the survey may already have an interest in providing opportunities in their program to children with disabilities. This could bias the observed observation, decreasing the variability and hiding a true relationship.

**Operational Definitions**

- Disability orientation – how an individual views disability, measured by the level of agreeance with the medical model and the social model, separately.

- Self-efficacy – the belief or confidence one has in themselves to produce a specific result or perform a certain task.

- Barriers – factors that may reduce the participation for children with disabilities.

- Program – an organized physical activity opportunity offered through an organization.

- Organization – independently run entity that could offer multiple programs and could have multiple facilities that either collaborate together or run as separate entities.

- Facility – the location where program(s) are offered.
• Subjective norm – the social expectation an individual receives from outside factors to produce a specific result or perform a certain task.

• Intention – an individual’s actual intent on following through on a behavior or indication that the individual desires and is ready to achieve a desired outcome.
Chapter 2: Literature Review

The purpose of this literature is to provide background knowledge about the study conducted. Currently, children with disabilities don’t achieve the recommended amount of physical activity (Einarsson et al., 2015). A better understanding of the factors influencing their participation in physical activity programs is needed. A review of the available literature is outlined and described in subsequent sections to provide context for the current study. This content will be organized in the following order: physical activity in children with disabilities, barriers in physical activity for children with disabilities, aquatics and physical activity, and disability orientation.

Physical Activity in Children with Disabilities

Physical activity is linked to multiple lifelong health benefits. It has been shown to help reduce cholesterol and blood pressure, as well as increase bone health (Kawabe et al., 2006; Strong et al., 2005). Participating in regular physical activity is also connected to lower obesity rates (Moore et al., 2003; Raitakari et al., 1997; Rowlands, Eston, & Ingleedew, 1999; Strong et al., 2005), which in turn reduces the risk for cardiovascular disease and diabetes (Powel et al., 1987). Not only does physical activity assist in reducing these negative physiological outcomes (Strong et al., 2005), it also promotes better quality of life (Hamm & Yun, 2018; Norris et al., 1992; Wafa et al., 2016). Wafa et al (2016) studied 78 children ages 9 – 11 years. They reported that the quality of life reported by children with disabilities was lower than their peers without disabilities. Findings also revealed a positive correlation between time spent in moderate to vigorous activity and quality of life. The effect of
physical activity on quality of life may be the result of better overall health, a
decrease in depressive symptoms and anxiety, or an increase in self-concept (Brown,
Welsh, Labbe, Vitulli, & Kulkarni, 1992; Strong et al., 2005; Wafa et al., 2016).

Starting physical activity participation while young will not only start these
benefits early but can help create habits to establish a healthy lifestyle (Moore et al.,
2003). In order to receive the beneficial outcomes of physical activity, the Center of
Disease Control (CDC) recommends all children should participate in 60 minutes of
moderate to vigorous activity daily (US Department of Health and Human Services,
2008). The majority of children with disabilities fall significantly below the minimal
physical activity recommendations in order to receive the health benefits (Buffart,
Roebroeck, Rol, Stam, & Van den Berg-Emons, 2008; Einarsson et al., 2015; Rintala
et al., 2011; Shields, Dodd, & Abblitt, 2009).

Not only do children with disabilities fail to meet the recommended amounts
of physical activity, multiple studies reveal that children with disabilities get
significantly less overall physical activity than their typically developing peers
(Einarsson et al., 2015; Foley et al., 2008; Maher et al., 2007; Ryan, Forde, Hussey, &
Gormley, 2015b). When measuring the physical activity levels of children aged 7-12
years across different settings, Foley et al. (2008) found that the children with
intellectual disabilities were getting significantly less overall physical activity than
their peers while at school (recess and physical education classes), after school and in
their weekend routine. However, other studies have shown insignificant differences
between children with and without disabilities (Kwan, King-Dowling, Hay, Faught, &
Cairney, 2016; Rintala et al., 2011; Whitt-Glover, O’Neill, & Stettler, 2006a). Whitt-
Glover and colleagues (2006) measured the physical activity of 28 children with Down syndrome between the ages of 3 and 10 years, along with their siblings without disabilities. After tracking their physical activity for 7 days using an accelerometer, there appeared to be no difference in physical activity levels between the children with and their siblings without Down syndrome. In a longitudinal study examining physical activity across 2 years, Kwan et al. (2016) found that physical activity decreased as individuals aged and was consistent between the children with and without movement impairments. There have also been studies showing that children with disabilities may engage in similar amounts of low intensity physical activity as peers, but engage in lower amounts of moderate to vigorous intensity physical activity (Jung et al., 2018; Whitt-Glover, O’Neill, & Stettler, 2006b). Results are inconsistent about the magnitude of the disparity in physical activity levels between children with disabilities and their peers.

Children with disabilities are at risk for developing secondary conditions (Rimmer et al., 2010). Secondary conditions are physical and mental outcomes indirectly resulting from a primary disabling condition (Krause & Bell, 1999). These secondary conditions are preventable (Wilber et al., 2002) and include outcomes such as chronic pain, fatigue, various infections (Kinne, 2008; Wilber et al., 2002). Obesity, and associated conditions, are also secondary conditions children with disabilities experience heightened risk. Additionally, mental health secondary conditions experienced by children with disabilities include depression, low self-esteem and anxiety (Kinne, 2008; J. H. Rimmer et al., 2010; Rimmer et al., 2004). Physical activity can reduce the risk for these potential secondary conditions for
children with disabilities through improved physical health (Wilber et al., 2002) and mental wellness (Mitra et al., 2005). It is thus imperative that factors influencing the physical activity levels of children with disabilities are understood and used to establish effective physical activity promotion programs.

**Barriers in Physical Activity for Children with Disabilities**

With the importance of physical activity, it is important to note where and how children typically acquire physical activity. Wickel and Wisenmann (2007) found that typically developing children obtain approximately 27% from physical education and recess and 50% from unplanned activities, while 23% of physical activity comes from youth sport and physical activity programs. These numbers show the importance opportunities outside of the school environment play in obtaining physical activity.

Parents of children with disabilities report many barriers and facilitators to participation in physical activity opportunities by their children with disabilities. (Barr & Shields, 2011; Bloemen et al., 2015; Columna et al., 2017). Rimmer and colleagues (2004) found 178 barriers and 130 facilitators to participation in physical activity for individuals with disabilities through interviews conducted with individuals with disabilities, architects, fitness and recreational professionals, and city planners. The top perceived barriers and facilitators identified can be subdivided into personal and environmental factors. Personal factors are those that come from the individual and/or family and often consist of cost, time conflicts, intention of engaging in physical activity, self-efficacy and health condition type and severity
(Bloemen et al., 2015; Columna et al., 2017). Bloeman and colleagues (2015) interviewed parents of children with visual impairments and found that parent encouragement was a major facilitator of physical activity for their child. They also found familial constraints, such as schedule, understanding of the disability, and the child’s abilities serve as major barriers to participation. Limitations and health conditions presented by the child’s impairment were also common barriers identified by parents (Barr & Shields, 2011; Bloemen et al., 2015).

Environmental factors refer to factors that are controlled by things outside of the family or individual (Bloemen et al., 2015). One of the most commonly cited environmental barriers reported was the accessibility of existing programs, followed by the availability of physical activity and sport programs for individuals with disabilities. (Barr & Shields, 2011; Bloemen et al., 2015; Columna et al., 2017; Rimmer et al., 2004). Accessibility includes a physical accessibility of a facility or building, programs structured and prepared to accommodate various impairments, and the availability of information and resources regarding programs for individuals with disabilities (Barr & Shields, 2011; Bloemen et al., 2015; Columna et al., 2017; Rimmer et al., 2004). Notably, structured programs that offered appropriate accommodations and modifications, regardless of if they were designed as inclusive or disability specific programs, were reported as the largest environmental facilitator for participation in a physical activity program (Barr & Shields, 2011). Furthermore, Columna and colleagues (2017) found an emerging theme of parents identifying underqualified staff as a major barrier to their child with disabilities continued participation in physical activity programs.
Many of these environmental factors are the responsibility of the organization’s leadership, and if addressed could improve the participation of children with disabilities in physical activity. Of the ten themes for barriers and facilitators identified by Rimmer et al (2004), eight could be at least partially be linked to the decisions made by the organization’s leadership. These factors included; built environment, cost, equipment, information available, education and training, attitudes and perceptions, and policies and procedures. Identified barriers to serving children with diverse abilities in an educational setting, as reported by educators, include inadequate pre-service training (Frankel, 2004), insufficient knowledge of the child and his/her needs (Grace, Llewellyn, Wedgewood, Fenech, & McConneel, 2008; Valentine, Rajkovic, Dinning, & Thompson, 2011), and directors who do not promote an inclusive setting (Grace et al., 2008).

When examining inclusive behavior in an Australian early learning center, Mackenzie, Cologon and Fenech (2016) state the need for intentional leadership for implementing inclusion. Inclusive practices were viewed by the program staff to come “from the top down,” and to be associated with the hiring of staff with inclusive attitudes, proper decision making, and effective management of finances for adapted resources and trainings. Decisions witnessed by the staff from the organization’s leadership included the acceptance of children with various impairments into the program, planning activities that were appropriate and accommodated all skill levels, as well as ensuring the appropriate resources were available to staff. Finally, staff valued the leaderships placing financial priority on purchasing resources that were
unavailable, professional development opportunities for the staff, and the employment of additional support staff when needed.

**Promotion of Physical Activity through Aquatics**

The aquatic environment has activities that can be enjoyed across the ages, from infants to elderly. For infants, swimming has been found to promote hand eye-coordination as well as static balance and have positive effects on motor skill development (Lai et al., 2015; Sigmundsson & Hopkins, 2010). For adults, aquatic based exercises have shown health benefits, similar to that of running (Chase, Sui, & Blair, 2008), including improvements in aerobic capacity, muscle mass, endurance and flexibility (Westby, 2001).

Water has the ability to encourage independent movement in different ways than a land-based exercise. Thus, aquatic programs provide an important opportunity for promoting physical activity and health in populations that experience movement limitations. The buoyancy of the water decreases gravity’s effects on the individual, allowing movement in the water that is otherwise limited on land (Sigmundsson & Hopkins, 2010). Sigmundsson and Hopkins (2010) reported that the promotion of hand-eye coordination and vestibular stimulation created through the low gravity of the water helped improve balance and prehension of infants. The decreased impact and joint loading (Lin, Davey, & Cochrane, 2004) also creates a perfect setting for physical activity and physical therapy in special populations, such as disability, older populations and injury. Lin and colleagues (2004) found that an aquatic intervention
exercise program for 66 older adults with arthritis showed decreased loading in the water helped decrease pain and increase exercise.

Aquatic programs have the capability of reducing some of the personal and environmental barriers that occur in physical activity programs for children with disabilities. The unique properties of the water create an environment that allows for movement with all types of disabilities. These properties, including its buoyant and resistant nature (Lin et al., 2004; Sigmundsson & Hopkins, 2010), provide a perfect setting to promote free movement and physical activity that minimizes some difficulties relating to disability type or severity and increase accessibility. The unloading of joints and additional postural support afforded by water can provide a positive environment for individuals with poor postural control (Kelly & Darrah, 2005) to engage in high intensity activity. The buoyancy also provides a weightless feeling, allowing a person to stretch or lift limbs that have restrictive movement on land, promoting greater independence and variability in physical activity.

The ability to move independently can grant the opportunity to engage and interact with peers. Pan (2011) conducted a study in which 15 children with autism spectrum disorder and their siblings participated in a 14-week aquatic program. In addition to increases in motor skills and physical fitness, children with autism spectrum disorder demonstrated gains in social functioning (Pan, 2011). Another benefit to an aquatic intervention contributes to the fact that the water is fun. It is a new environment, one that children with disabilities may not get to participate in often (Lai et al., 2015). Lai et al (2015) found an increase in physical activity enjoyment from a group of 11 children with cerebral palsy.
Disability Orientation

Disability models are attempts at conceptualizing the various viewpoints individuals have towards disability (Olkin, 2002). The models describe how an individual may define the cause or treatment of a disability. There are several models that have evolved and developed over the years, including the medical and social models. A person’s disability orientation identifies how closely they align with these models (Darling & Heckert, 2010).

The medical model approaches disability through first identifying the symptoms or impairments of the disability, with the goal of healing (Boorse, 1977). The impairments the individuals’ faces are often viewed as deficits. For some one using or viewing disability through a medical lens, this creates a long term goal of eliminating the disability to improve “normalcy” (Darling, 1979). Generally, the medical model tries to help the individual adapt to the environment. Those who support the model state that working towards normality is not inherently a negative thing, but refers to statistical differences between a person and the rest of the population (Boorse, 1977). Without this comparison, it would be difficult for medical professionals to identify the need for services and procedures that enhance their patient’s experience and functionality in everyday life. Those against this model argue that it portrays disability as an undesirable factor and oppresses individuals with disabilities (Abberley, 1987).

The social model introduces the idea that disability is a result of social influence based on an individual’s impairment (Nind et al., 2010). The impairment is the physical, developmental, cognitive or social barrier that resides within the
individual. Disability emerges when the environment imposes restrictions on a person with an impairment. In other words, when the environment is accessible, regardless of the presence of an impairment, disability is reduced. As stated by Beaudry (2016), individuals have impairments but society creates an environment that forces them to be a detriment to the individual. A social model approach suggests individuals with impairments do no need to adapt to society, but instead society should “accommodate their differences” (Darling & Heckert, 2010). The social model seeks to “fit” the environment to the needs of the individual, providing ways to enhance their participation. Although praised by many, the social model is not without its critiques. Beaudry (2016) argued that it tends to separate the magnitude of influences that impairments can have on an individual’s life. They claim it dismisses the role or importance disability can play in a person’s identity, and the claim that society constructs disability can minimize a person’s disability identity (Beaudry, 2016). Anastasiou and Kauffman (2011) also claim that in reference to special education, the social model approach fails to identify the complexity of disability for each individual’s needs, which could be detrimental for long-term development in an inclusive setting.

The moral model stems from historical and religious contexts, which relates disability to sin and shame (Olkin, 2002). It views disability as a defect caused by wrongdoing or as a test a faith, using spiritual or divine approaches as attempts to address the disability. In developed countries, the relevancy of this model is decreasing due to evolved viewpoints (Olkin, 2002).
Thomas (2004) developed the social model a step farther in what she termed the social relational understanding of disability. In this approach, the idea of disability being influenced by society’s perception of impairment remains the same, however, Thomas’ model maintains the experiences and identity that occurs for a person with an impairment in three ways (Cologon & Thomas, 2014). First, an individual can experience disability from restrictions that are socially applied and prevent participation. Second, these social restrictions, along with other behaviors, can have a negative impact on the individual’s feeling of self and potential. Third, Thomas’ deviates from the social model by considering the direct effect the impairment has on the individual, especially how they cope living in their social environment. A social relational approach makes the argument that “inclusion is not exceptional or challenging, it is embedded” into the environment (Mackenzie et al., 2016).

The integrated model is a newer approach that combines the view points of the social and medical models into one (Anastasiou & Kauffman, 2011; Roush & Sharby, 2011; Sisti, 2014). It introduces the idea that each hold importance in improving the well-being and quality of life for individuals with disabilities and identifying there may be a time and place for each to be utilized. Sisti (2014) proposes a naturalist (medical) and social model hybrid model would be beneficial since both have the shared goal of improved quality of life for the individual. He argues the naturalist model brings forth hard facts that could reinforce the beliefs of the social model. The International Classification of Functioning, Disability and Health (ICF) was created as an attempt to improve medical professionals’ viewpoint on disability (Roush & Sharby, 2011). The ICF incorporates environmental and
personal factors, as well as the impairments, in the way and amount the individual participates (Drum, Krahn, & Bersani, 2009). It has now been adopted by some in the medical field, with the American Physical Therapy Association adopting it in 2008 (Roush & Sharby, 2011).

There are multiple articles discussing these models and their relevance to the quality of life and rights for individuals with disabilities (Anastasiou & Kauffman, 2011, 2013; C. Beaudry, 2015; Levitt, 2017; Oliver, 1998; Roush & Sharby, 2011; Sisti, 2014). However, limited empirical studies have been conducted applying disability orientation and/or the use of the models into practice. A survey to measure disability orientation was developed by Darling and Heckert (2010) called the Questionnaire on Disability Identity and Opportunity (QDIO). The original survey consists of 4 main parts: disability pride, exclusion, social model and medical model. The social model has 7 questions using a Likert type scale and the medical model has 8 questions. After development, Darling and Heckert (2010) conducted the survey with 388 individuals with disabilities to identify trends in disability orientation according to age. They found age was not a predictor of model orientation. Goodrich and Ramsey (2012) used the QDIO survey to measure perceptions of service quality among consumers with disabilities, finding that high disability pride related to more positive perceptions of accessibility. Further, high disability exclusion was related to more negative perception of accessibility and higher medical model scores were positively related to impressions of accessibility. In contrast, social model scores were not significantly associated with impressions of accessibility (Goodrich & Ramsey, 2012). Few studies have examined the implications of these findings in
practice. Mackenzie et al (2016) found that an early childhood education center that adopted a social relational approach had a high adherence to an inclusive setting. This study found a highly inclusive early childhood education center in Melbourne, Australia. Through interviews, observations and document analysis, the philosophies and teaching philosophy taken by the staff and management were found to closely align with the beliefs held in the social relational model (Mackenzie et al., 2016).

Dirth and Branscombe (2017) connected disability orientation to policy support when surveying individuals without disabilities. In this study, the relationship between disability orientation and participants’ stance on pro-disability policies was examined. Finding indicated that alignment with the medical model reduced support for disability policy by encouraging the status quo. In contrast, the social model encouraged support of disability policy. They also found awareness of structural disablism as a mediator to the support of pro-disability policy. Other results of their study showed that those that aligned with the medical model identified the diagnosed condition as the reason for experiencing difficult situations, while those aligning with the social model identified social factors as the main contributor to negative experiences. However, according to the survey, individuals aligning with the social model were no more likely to look for social solutions to the problem than those aligning with the medical model (Dirth & Branscombe, 2017).
Chapter 3: Methods

Participants

Participating in this study were 185 aquatic directors, or similar management positions, from across 27 different U.S. states. To participate, the participants had to be in a leadership position that included the management of programs through program development, program evaluation, staff hiring, and/or staff training. They also needed to have worked at the organization for more than 1 year. Participant ages fell between the ages of 20 and 68 years old (X=41.2, SD=10.9). Seventy six percent of the directors identified as female, 83.7% identified as white, and 17.4% identified as a race or ethnicity other than white. Only 3.5% of aquatic directors identified as having a disability, however, 98.8% claimed they knew someone with a disability. Regarding their position, 54.8% of the aquatic directors had held their position for over 5 years. Over 80% of aquatic directors surveyed were involved in program development, evaluation and the hiring and training of staff, each measured independently. A summary of all demographic information can be found in Table 3.1.

Aquatic Program

Aquatic directors were located across 27 states, representing all regions of the United States. Of these organizations, 24.4% were started in the last 10 years, while 45% of them have been in business for over 25 years. Organizations included local parks and recreation, major recreational franchises that include pools, for-profit organizations, country clubs with pools, and YMCAs. The most common types of organization represented were non-profits (41.7%) and organizations through
Table 3.1
Director Demographics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>41.2 ± 10.9</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td><em>n=171</em></td>
</tr>
<tr>
<td>Female</td>
<td>130 (76.0)</td>
</tr>
<tr>
<td>Male</td>
<td>39 (22.8)</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>2 (1.2)</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
<td><em>n=172</em></td>
</tr>
<tr>
<td>American Indian, Native American, or Alaska Indian</td>
<td>1 (.6)</td>
</tr>
<tr>
<td>Asian</td>
<td>3 (1.7)</td>
</tr>
<tr>
<td>Black or African American</td>
<td>11 (6.4)</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>10 (5.8)</td>
</tr>
<tr>
<td>Pacific Islander or Native Hawaiian</td>
<td>20 (10.4)</td>
</tr>
<tr>
<td>White or Caucasian</td>
<td>144 (83.7)</td>
</tr>
<tr>
<td>Other</td>
<td>5 (2.9)</td>
</tr>
<tr>
<td><strong>Identifies as having a disability</strong></td>
<td><em>n=172</em></td>
</tr>
<tr>
<td>Yes</td>
<td>6 (3.5)</td>
</tr>
<tr>
<td>No</td>
<td>166 (96.5)</td>
</tr>
<tr>
<td><strong>Know someone with a disability</strong></td>
<td><em>n=173</em></td>
</tr>
<tr>
<td>Yes</td>
<td>171 (98.8)</td>
</tr>
<tr>
<td>No</td>
<td>2 (1.2)</td>
</tr>
<tr>
<td><strong>Frequency of Interaction</strong></td>
<td><em>n=168</em></td>
</tr>
<tr>
<td>Daily</td>
<td>39 (23.2)</td>
</tr>
<tr>
<td>1-2 times/week</td>
<td>79 (47.0)</td>
</tr>
<tr>
<td>1-2 times/month</td>
<td>25 (14.9)</td>
</tr>
<tr>
<td>1-2 times/year</td>
<td>18 (10.7)</td>
</tr>
<tr>
<td>less than 1 time a year</td>
<td>7 (4.2)</td>
</tr>
<tr>
<td><strong>Roles and Responsibilities at Organization</strong></td>
<td><em>n=176</em></td>
</tr>
<tr>
<td>Program Evaluation</td>
<td>158 (89.8)</td>
</tr>
<tr>
<td>Hiring Instructors</td>
<td>140 (79.5)</td>
</tr>
<tr>
<td>Training of Staff</td>
<td>149 (84.7)</td>
</tr>
<tr>
<td>Program Development</td>
<td>163 (92.6)</td>
</tr>
<tr>
<td><strong>Years at Organization</strong></td>
<td><em>n=173</em></td>
</tr>
<tr>
<td>1-2 years</td>
<td>35 (20.2)</td>
</tr>
<tr>
<td>3-5 years</td>
<td>41 (23.7)</td>
</tr>
<tr>
<td>6-10 years</td>
<td>44 (25.4)</td>
</tr>
<tr>
<td>11 &amp; up</td>
<td>53 (30.6)</td>
</tr>
</tbody>
</table>

*Note.* Due to missing sums of demographic value is less than 185.

**Participants could choose more than one category; therefore the results are greater than total number of participants.

Due to missing values, the total number of participants fluctuates in each category.
community, or local parks and recreation, departments (31.9%). When identifying the aquatic programs, an attempt was made to balance between urban and rural population to the national proportion of 80% and 20%. This resulted in 74% of survey responses coming from an urban area and 26% were from a rural setting. See table 3.2 for a breakdown of responses by state.

Table 3.2. Responses by State and Recruitment Round

<table>
<thead>
<tr>
<th></th>
<th>Midwest</th>
<th># of surveys</th>
<th>Northeast</th>
<th># of surveys</th>
<th>South</th>
<th># of surveys</th>
<th>West</th>
<th># of surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Round 1</strong></td>
<td>Iowa</td>
<td>1</td>
<td>Maine</td>
<td>0</td>
<td>Florida</td>
<td>8</td>
<td>California</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Michigan</td>
<td>6</td>
<td>Pennsylvania</td>
<td>9</td>
<td>Georgia</td>
<td>6</td>
<td>Idaho</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Minnesota</td>
<td>6</td>
<td>Virginia</td>
<td>6</td>
<td>S Carolina</td>
<td>2</td>
<td>Washington</td>
<td>7</td>
</tr>
<tr>
<td><strong>Round 2</strong></td>
<td>Illinois</td>
<td>8</td>
<td>Delaware</td>
<td>0</td>
<td>Kentucky</td>
<td>1</td>
<td>Colorado</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Nebraska</td>
<td>2</td>
<td>Maryland</td>
<td>5</td>
<td>Mississippi</td>
<td>3</td>
<td>Oregon</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Ohio</td>
<td>8</td>
<td>Massachusetts</td>
<td>0</td>
<td>Texas</td>
<td>12</td>
<td>Utah</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>New Jersey</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Wyoming</td>
<td>0</td>
</tr>
<tr>
<td><strong>Addtl States</strong></td>
<td>New York</td>
<td>1</td>
<td>Arkansas</td>
<td>2</td>
<td>Arizona</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Louisiana</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N Carolina</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tennessee</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total # of programs</strong></td>
<td>31</td>
<td>21</td>
<td>38</td>
<td>61</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. From reported zip codes (N=151)

*States not contacted though the recruitment process. May have been recruited through social media or passed along through word of mouth of participants.

Holding seasonal (42.5%) or monthly (28.1%) trainings for employees seemed to be the most common, with 20.7% of organizations offering trainings once a year or less. Marketing strategies utilized by the organizations were also identified. The two most common forms of marketing were web-based, with 96.9% of organizations using a website, and 80.9% using social media campaigns. Organization information can be found in Table 3.3.
Table 3.3 Organization information

<table>
<thead>
<tr>
<th>Years Organization has existed</th>
<th>n=142</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5 years</td>
<td>17 (12.0)</td>
</tr>
<tr>
<td>6-10 years</td>
<td>23 (16.2)</td>
</tr>
<tr>
<td>11-25 years</td>
<td>32 (22.5)</td>
</tr>
<tr>
<td>26-49</td>
<td>30 (21.1)</td>
</tr>
<tr>
<td>older than 50 years</td>
<td>40 (28.2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Organization*</th>
<th>n=192</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community or City Parks and Recreation</td>
<td>52 (31.9)</td>
</tr>
<tr>
<td>Non-profit</td>
<td>68 (41.7)</td>
</tr>
<tr>
<td>For-profit</td>
<td>37 (22.70)</td>
</tr>
<tr>
<td>Public</td>
<td>21 (12.9)</td>
</tr>
<tr>
<td>Private/Membership based</td>
<td>39 (23.9)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequency of Staff Trainings</th>
<th>n=160</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>7 (4.4)</td>
</tr>
<tr>
<td>Annual - once/year</td>
<td>26 (16.3)</td>
</tr>
<tr>
<td>Seasonal - 3-4 times/year</td>
<td>68 (42.5)</td>
</tr>
<tr>
<td>Monthly</td>
<td>45 (28.1)</td>
</tr>
<tr>
<td>Bi-weekly</td>
<td>8 (5.0)</td>
</tr>
<tr>
<td>Weekly</td>
<td>6 (3.8)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marketing Strategies*</th>
<th>n=162</th>
</tr>
</thead>
<tbody>
<tr>
<td>Website</td>
<td>157 (96.9)</td>
</tr>
<tr>
<td>Flyers</td>
<td>118 (72.8)</td>
</tr>
<tr>
<td>Partnership with other organizations</td>
<td>106 (65.4)</td>
</tr>
<tr>
<td>Booths at community events</td>
<td>83 (43.2)</td>
</tr>
<tr>
<td>Radio/TV ads</td>
<td>23 (14.2)</td>
</tr>
<tr>
<td>Newspaper ads</td>
<td>27 (16.7)</td>
</tr>
<tr>
<td>Social media</td>
<td>131 (80.9)</td>
</tr>
<tr>
<td>None</td>
<td>3 (1.9)</td>
</tr>
</tbody>
</table>

Note. *Participants were able to choose more than one

Instrument

The survey, with 62 questions, collected descriptive data about the aquatic director and their program, as well as the multiple variables. The demographic information about the aquatic program director was obtained through questions about their personal demographics and their position at the organization. Personal demographics include gender, age, ethnicity and race, and disability status. Questions
regarding their position at the organizations inquired about how long they had been employed and their responsibilities in their current role.

To measure the aquatic program directors’ views of disability, the Questionnaire on Disability Identity and Opportunity (QDIO) (Darling & Heckert, 2010) survey was used. The original QDIO has 4 sections; disability pride, exclusion, social model and medical model. This study only utilized the questions in the social and medical model sections of the survey, with eight questions that measure the level of adherence to the medical model, and seven questions that measure their level of adherence to the social model. Each question used a Likert scale from one to five (strongly disagree to strongly agree). Answers from each model section were averaged to give the aquatic director’s score, one for each model. In the original study, reliability of a Cronbach’s $\alpha=0.72$ for the social model, and a Cronbach’s $\alpha=0.63$ for the medical model (Darling & Heckert, 2010). A factor analysis conducted in the previous study supported that the questions loaded onto the appropriate factor. Internal consistencies from this study for social model and medical model were $\alpha=0.67$ and $\alpha=0.65$, respectively.

The dependent variables for this study were opportunities for children with disabilities and the participation of children with disabilities in the aquatic program. Opportunities offered for children with disabilities was measured by a single item asking if they offered program opportunities for children with disabilities with a dichotomous “yes” or “no” answer. Participation of children with disabilities in the aquatic program was measured through a proportion. This participation proportion was calculated using survey items asking the approximate number of children that
participated in their programs in the last year and the approximate number of children with disabilities that participated in their programs in the last year.

Potential moderators that may affect the relationship between aquatic director disability orientation and participation of children with disabilities in the aquatic program included the quality staff, marketing, facility accessibility, and financial considerations. Each moderator variable was measured using a Likert-type scale, ranging from one to five (strongly disagree to strongly agree). All potential moderators were identified using the literature, specifically literature examining potential barriers; staff quality (Barr & Shields, 2011; Columna et al., 2017; Mackenzie et al., 2016; Rimmer et al., 2004), marketing (Barr & Shields, 2011; Bloemen et al., 2015), facility accessibility (Cardinal & Spaziani, 2003; Goodrich & Ramsey, 2012; Rimmer et al., 2004), and financial (Rimmer et al., 2004). Four survey items inquired about staff qualifications and experiences working with children with disabilities. Internal consistency of staff quality was $\alpha = 0.83$. Four survey questions captured the program marketing and advertisement of opportunities for children with disabilities, with a Cronbach’s alpha coefficient of $\alpha = 0.90$. These items inquired about the inclusion of children with disabilities and the opportunities available into the organizations marketing strategies. Participants were asked if individuals with disabilities were represented in their marketing, and if the same marketing mediums were used to promote opportunities for children with disabilities as all other programs. The accessibility of the facility for individuals with disabilities consisted of 4 questions, inquiring about the accessibility of the parking lot, pool space, and locker rooms, as well as the needed equipment to accommodate for individuals with
disabilities. The items measured were adapted from articles by Goodrich and Ramsey (2012) and Cardinal and Spaziani (2003) to fit an aquatic facility. Reliability for the accessibility questions yielded a $\alpha = 0.76$. Finally, financial availability and delegation by the organization to promote and support programs for children with disabilities was evaluated using 4 items with a $\alpha = 0.74$.

Self-efficacy and intentions were also measured. Self-efficacy measured the aquatic directors’ belief in their ability to provide and support opportunities for children with disabilities through teaching, accommodating, and training. The 5 questions about self-efficacy were designed with guidance from Rhodes et al (2003). Some example questions are: “I am comfortable addressing and providing accommodations or modifications to allow for participation of children with disabilities in our program” or “I believe I have the ability and knowledge to train instructors how to teach children with disabilities safely and effectively”. The internal consistency was a $\alpha = 0.75$. For this study, intentions measured the program director’s intentions, or actionable plans, to provide and promote opportunities for children with disabilities. The 4 questions regarding intentions were developed with guidance from Rise et al’s (2003) study on implementation intentions and resulted in a Cronbach’s $\alpha = 0.84$.

**Recruitment Procedures**

Two methods were used for the recruitment of aquatic program directors, (a) an online search, and (b) the use of social media. For the online-search, 1028 swim lesson programs were identified through two separate rounds of online searches. In the
first round, 527 organizations were contacted from 12 states, resulting in 105 survey responses. In the second round, 501 organizations were contacted from 14 states, resulting in 101 responses. A total of 26 states were randomly selected from 4 regions of the United States (west, south, midwest, northeast). Twenty-one of these states had participants respond to the survey. Six additional states were reached through social media posts or word of mouth by other participants, totaling 27 states represented. Detailed information can be seen on Table 3.2.

The second recruitment method, the use of a social media campaign using the website Facebook, resulted in 17 additional survey responses. A group page was created with posts that allowed individuals to share. Additionally, after completing the survey, each participant was asked to include a message on their social media page with a link to the survey.

All participants filled out an online questionnaire, administered and collected via Qualtrics (Provo, UT, 2002). For the first recruitment strategy, the online search, an initial email was sent to the identified organizations. This email had general information, along with a link to the survey. Two follow up emails were sent out approximately 5-7 days after the previous email. For the second recruitment method using social media, a Facebook group was created with information and the survey link. A social media post was created and shared once a week for 3 weeks.

Two hundred and thirty-one individuals initially started the online survey. After reading the introduction letter, nine of these individuals chose not to continue participating. Eligibility requirement eliminated 35 individuals, 28 of which had worked at their organization for less than a year, and 7 of which did not meet the job
responsibilities of being responsible for, or involved in, the management of programs through development, evaluation, and/or implementation at an aquatics facility and/or in the management of staff through hiring and training.

**Statistical Analysis**

For the dependent variable of program offering, frequencies of the opportunities offered for children with disabilities at the aquatic program, a dichotomous variable was calculated, along with the frequencies of the types of programs offered for children with and without disabilities. For the participation of children with disabilities in the aquatic program, descriptive statistics were calculated for the approximate number of children participating in programs without disabilities, children participating in programs with disabilities, and for the proportion of child with disability participation. Mean scores and standard deviations were collected for all of the social model and for the medical model scores. In addition, the mean and standard deviation for each of the moderator variables (staff, marketing, accessibility and financial) and for the factors (self-efficacy and intentions) was calculated. Prior to the main inferential analysis, Pearson Moment Correlation was employed to examine the simple relationship between the dependent variables and all independent variables. A pair-wise deletion was used to deal with missing values.

To examine the relationship between aquatic director disability orientation and opportunities offered for children with disabilities two logistical regression were employed. For both models the dependent variable was if the aquatic directors offered opportunities for children with disabilities in their programs. The independent
variables were the aquatic directors’ scores on the social model and the medical model, separately. To examine the relationship between disability orientation and the participation of children with disabilities in the aquatic programs, two multiple regressions were employed. The dependent variable was the proportion of children with disabilities participating in the programs. The independent variables were the aquatic directors’ scores on the social model and medical model, separately.

To identify a potential moderation effect between the director’s disability orientation and the participation of children with disabilities, eight independent moderation analyses were conducted using the Process macro (version 3.0), a computational procedure program designed for moderation and mediation analysis using a multiple regression model approach (Hayes, n.d). The interactions were estimated using a regression coefficient and bias-corrected Bootstrap confidence intervals with 5000 samples. Two sets of moderation analyses were conducted to examine the following potential moderating factors: the quality of staff, accessibility, financial, and marketing, separately. The first set of moderation analysis tested for moderation effects in the relationship between the aquatic director’s alignment with the social model and the participation of children with disabilities in aquatic program. In the second set of the moderation analyses, moderation effects were examined for the relationship between the aquatic director’s alignment with the medical model and the participation of children with disabilities in aquatic program.

To identify the relationship between other potential factors and the participation of children with disabilities in aquatic programs, a multiple regression was utilized. The dependent variable was the proportion of children with disabilities
participating in the aquatic program. The independent variables were the aquatic
directors’ self-efficacy of providing opportunities for children with disabilities, and the
aquatic director intentions of offering and promoting opportunities for children with
disabilities, separately.

For the final research question, a multiple regression was used to examine the
relationship between disability orientation and the director’s intentions to provide
opportunities for children with disabilities. The dependent variable was the director’s
intentions. The independent variable was the director’s disability orientation, with a
score given for the social model and one given for the medical model, separately.
Data analysis was conducted using SPSS 23.0 statistical software.
Chapter 4: Results

A large majority (92.6%) of aquatic programs responded that they offer opportunities in their programs for children with disabilities. This is in contrast to general beliefs and literature that a lack of opportunities in physical activity programs for children with disabilities is one of the major barriers to physical activity participation. When comparing the program offering for children with disabilities to those offered to the general public, it found that 87.7% of organizations offer private lessons to all children while 91.9% of organizations that offer lessons to children with disabilities offer private lessons. When looking at different sized group lessons disability only classes were offered less often than inclusive or non-disability classes. Table 4.1 outlines the offerings of the organizations.

Table 4.1

<table>
<thead>
<tr>
<th>Offerings for children without disabilities</th>
<th>Offerings for children with disabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do they offer</td>
<td></td>
</tr>
<tr>
<td><strong>n=163</strong></td>
<td></td>
</tr>
<tr>
<td><strong>n=162</strong></td>
<td><strong>Yes</strong></td>
</tr>
<tr>
<td><strong>150 (92.6)</strong></td>
<td><strong>No</strong></td>
</tr>
<tr>
<td><strong>12 (7.4)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Inclusive</strong></td>
<td><strong>Specialty</strong></td>
</tr>
<tr>
<td><strong>n=149</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Private lessons</strong></td>
<td></td>
</tr>
<tr>
<td><strong>143 (87.7)</strong></td>
<td><strong>137 (91.9)</strong></td>
</tr>
<tr>
<td><strong>Small group</strong></td>
<td></td>
</tr>
<tr>
<td><strong>143 (87.7)</strong></td>
<td><strong>107 (71.8)</strong></td>
</tr>
<tr>
<td><strong>Medium group</strong></td>
<td></td>
</tr>
<tr>
<td><strong>93 (56.7)</strong></td>
<td><strong>53 (35.6)</strong></td>
</tr>
<tr>
<td><strong>Large group</strong></td>
<td></td>
</tr>
<tr>
<td><strong>47 (28.7)</strong></td>
<td><strong>18 (9.4)</strong></td>
</tr>
</tbody>
</table>

*Note.* Directors were allowed to choose more than one option causing sums greater than n=149.

Inclusive classes include both children with and without disabilities.

Specialty classes include only children with disabilities.

Small group were specified as 2-5 children per class

Medium group were specified as 6-12 children per class

Large group were specified as 13 or more children per class
Out of the 162 organizations represented, 12 (7.4%) did not offer programs for children with disabilities. When looking at the participation proportion, 90 out of the 119 programs that provided participation numbers reported that only seven out of 100 children participating in their aquatic programs as having disabilities (x =0.10, SD =.20). Four of the programs reported a proportion of 1.0, likely representing exclusively adapted programs. See Figure 4.1, 4.2, and 4.3 for the distribution of the total participation rates for children with and without disabilities, and the relative proportion of children with disabilities participating.

**Figure 4.1.** Total Participation of Children in Organization
Figure 4.2 Participation of Children with Disabilities

Figure 4.3. Disability Participation Proportions*

Note. *Proportions of children with disabilities participating in the aquatic programs
A Pearson correlation was run between all variables. There was no significant relationship between the aquatic directors’ view on the medical model and all other variables. The aquatics directors’ views on the social model were significantly related to the facility accessibility and the intentions of the aquatic director to provide opportunities for children with disabilities. The results also revealed significant correlations between the aquatic director’s view on the social model and program marketing for children with disabilities, and financial support of opportunities for children with disabilities. Results can be seen in Table 4.2.

Measurement of the aquatic director’s disability orientation produced two scores, one for the medical model and one for the social model. Aquatic directors had an average score of 2.95 (SD = 0.57) on the medical model and an average score of 3.72 (SD = 0.58) on the social model. The logistic regression showed no significant relationship between either disability orientation score and the opportunities offered for children with disabilities. This means neither the aquatic directors’ view on the social model (OR = 0.76, 95% CI [0.28, 2.0]), nor their view on the medical model, (OR = 1.29, 95% CI [0.44, 3.75]), are related to them providing opportunities to children with disabilities. The results also showed no significant relationship between the proportion of children with disabilities participating in aquatic programs and aquatic directors’ disability orientation (R = 0.14, F(2, 111) = 1.09, p = 0.34. Neither the social model nor medical model scores for the aquatic directors were related to the proportion of children with disabilities served in the program (β = .001, p=0.97 and β = -0.04, p=.15, respectively). The results can be seen in Table 4.3.
Table 4.2. Correlation matrix of all dependent and independent variables

<table>
<thead>
<tr>
<th></th>
<th>Medical Model</th>
<th>Social Model</th>
<th>Staff</th>
<th>Marketing</th>
<th>Accessibility</th>
<th>Financial</th>
<th>Self-Efficacy</th>
<th>Intentions</th>
<th>Offering</th>
<th>Participation</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Model</td>
<td>-</td>
<td>-0.07</td>
<td>-0.01</td>
<td>-0.24</td>
<td>-0.03</td>
<td>-0.13</td>
<td>-0.13</td>
<td>-0.07</td>
<td>0.04</td>
<td>-0.14</td>
<td>2.95</td>
<td>0.57</td>
</tr>
<tr>
<td>Social Model</td>
<td>-</td>
<td>0.10</td>
<td>0.17*</td>
<td>0.27**</td>
<td>0.16*</td>
<td>0.13</td>
<td>0.31**</td>
<td>-0.05</td>
<td>0.01</td>
<td>3.72</td>
<td>0.58</td>
<td></td>
</tr>
<tr>
<td>Staff</td>
<td>-</td>
<td>0.46**</td>
<td>0.14</td>
<td>0.31**</td>
<td>0.54**</td>
<td>0.41**</td>
<td>-0.16*</td>
<td>0.08</td>
<td>3.35</td>
<td>1.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing</td>
<td>-</td>
<td>0.26**</td>
<td>0.57**</td>
<td>0.37**</td>
<td>0.61**</td>
<td>-0.23**</td>
<td></td>
<td>0.15</td>
<td>2.51</td>
<td>1.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessibility</td>
<td>-</td>
<td>0.40**</td>
<td>0.29**</td>
<td>0.41**</td>
<td>-0.01</td>
<td>-0.07</td>
<td></td>
<td>4.01</td>
<td>0.95</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial</td>
<td>-</td>
<td>0.49**</td>
<td>0.63**</td>
<td>-0.17*</td>
<td>0.08</td>
<td></td>
<td></td>
<td>3.15</td>
<td>0.86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>-</td>
<td>0.48**</td>
<td>-0.19*</td>
<td>0.11</td>
<td>4.08</td>
<td>0.73</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intentions</td>
<td>-</td>
<td>-0.16*</td>
<td>0.12</td>
<td>3.11</td>
<td>0.96</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offering (dichotomous)</td>
<td>-</td>
<td>-0.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participation (proportion)</td>
<td>-</td>
<td>0.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note.
**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Table 4.3. Relationship between DO and Behavior Measures

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>OR</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Model</td>
<td>0.76</td>
<td>0.59</td>
<td>0.28</td>
</tr>
<tr>
<td>Medical Model</td>
<td>0.25</td>
<td>0.64</td>
<td>0.44</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participation</th>
<th>β</th>
<th>SE</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Model</td>
<td>-0.44</td>
<td>0.03</td>
<td>0.15</td>
<td>-0.10</td>
</tr>
<tr>
<td>Medical Model</td>
<td>0.00</td>
<td>0.03</td>
<td>0.97</td>
<td>-0.57</td>
</tr>
</tbody>
</table>

For the moderating variables measured, the quality of staff in working with children with disabilities had an average score of 3.35 (SD = 1.02) out of five. The marketing of programs and opportunities for individuals with disabilities had an average score, across all organizations, of 2.51 (SD =1.10) out of five. The accessibility of the facility had an average score, across all organizations, of 4.01 (SD =0.95). The delegation of financial resources to support opportunities for children with disabilities an average score of 3.15 (SD =0.86). The moderator analysis for each variable revealed no change in the relationship between the aquatic director’s disability orientation and the participation of children with disabilities in aquatic programs. The results of the moderation analyses when the social and medical model score was the primary predictor variable are reported in Table 4.4 and Table 4.5, respectively.
### Table 4.4. Results of Moderation Analysis for Social Model

<table>
<thead>
<tr>
<th></th>
<th>$\beta$</th>
<th>SE</th>
<th>$p$</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Model</td>
<td>0.00</td>
<td>0.09</td>
<td>0.99</td>
<td>-0.19</td>
</tr>
<tr>
<td>Staff</td>
<td>0.17</td>
<td>0.11</td>
<td>0.88</td>
<td>-0.20</td>
</tr>
<tr>
<td>Social Model x</td>
<td>0.00</td>
<td>0.03</td>
<td>0.99</td>
<td>-0.06</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>$\beta$</th>
<th>SE</th>
<th>$p$</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Model</td>
<td>0.00</td>
<td>0.06</td>
<td>0.99</td>
<td>-0.13</td>
</tr>
<tr>
<td>Marketing</td>
<td>0.04</td>
<td>0.10</td>
<td>0.73</td>
<td>-0.17</td>
</tr>
<tr>
<td>Social Model x</td>
<td>0.00</td>
<td>0.03</td>
<td>0.92</td>
<td>-0.05</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>$\beta$</th>
<th>SE</th>
<th>$p$</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Model</td>
<td>0.04</td>
<td>0.09</td>
<td>0.67</td>
<td>-0.15</td>
</tr>
<tr>
<td>Accessibility</td>
<td>0.18</td>
<td>0.09</td>
<td>0.85</td>
<td>-0.16</td>
</tr>
<tr>
<td>Social Model x</td>
<td>-0.01</td>
<td>0.02</td>
<td>0.72</td>
<td>-0.06</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>$\beta$</th>
<th>SE</th>
<th>$p$</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Model</td>
<td>0.08</td>
<td>0.08</td>
<td>0.34</td>
<td>-0.09</td>
</tr>
<tr>
<td>Financial</td>
<td>0.13</td>
<td>0.11</td>
<td>0.22</td>
<td>-0.08</td>
</tr>
<tr>
<td>Social Model x</td>
<td>-0.03</td>
<td>0.03</td>
<td>0.27</td>
<td>-0.09</td>
</tr>
</tbody>
</table>

### Table 4.5. Results of Moderation Analysis for Medical Model

<table>
<thead>
<tr>
<th></th>
<th>$\beta$</th>
<th>SE</th>
<th>$p$</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Model</td>
<td>0.07</td>
<td>0.09</td>
<td>0.47</td>
<td>-0.12</td>
</tr>
<tr>
<td>Staff</td>
<td>0.12</td>
<td>0.08</td>
<td>0.16</td>
<td>-0.05</td>
</tr>
<tr>
<td>Medical Model x</td>
<td>-0.04</td>
<td>0.03</td>
<td>0.21</td>
<td>-0.09</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>$\beta$</th>
<th>SE</th>
<th>$p$</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Model</td>
<td>0.00</td>
<td>0.07</td>
<td>0.99</td>
<td>-0.14</td>
</tr>
<tr>
<td>Marketing</td>
<td>0.06</td>
<td>0.07</td>
<td>0.39</td>
<td>0.08</td>
</tr>
<tr>
<td>Medical Model x</td>
<td>0.01</td>
<td>0.02</td>
<td>0.56</td>
<td>-0.06</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>$\beta$</th>
<th>SE</th>
<th>$p$</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Model</td>
<td>-0.16</td>
<td>0.11</td>
<td>0.14</td>
<td>-0.38</td>
</tr>
<tr>
<td>Accessibility</td>
<td>-0.10</td>
<td>0.08</td>
<td>0.21</td>
<td>-0.26</td>
</tr>
<tr>
<td>Medical Model x</td>
<td>0.03</td>
<td>0.03</td>
<td>0.26</td>
<td>-0.02</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>$\beta$</th>
<th>SE</th>
<th>$p$</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Model</td>
<td>-0.10</td>
<td>0.10</td>
<td>0.35</td>
<td>-0.30</td>
</tr>
<tr>
<td>Financial</td>
<td>-0.03</td>
<td>0.09</td>
<td>0.78</td>
<td>-0.20</td>
</tr>
<tr>
<td>Medical Model x</td>
<td>0.01</td>
<td>0.03</td>
<td>0.68</td>
<td>-0.05</td>
</tr>
</tbody>
</table>
The self-efficacy of the director to provide opportunities for children with disabilities had an average score of 4.08 (SD =0.73) out of five. The intentions of the aquatic director to provide opportunities to children with disabilities had an average score of 3.11 (SD =0.96). Two multiple linear regressions were employed to identify if (1) the self-efficacy of the aquatic director in providing opportunities for children with disabilities in their aquatic programs, and (2) the intention of aquatic director to provide opportunities for children with disabilities to provide opportunities for children with disabilities, were linked to program the participation of children with disabilities, separately. Neither self-efficacy nor intentions to provide opportunities for children with disabilities significantly predicted the participation of children with disabilities (R = 0.13, F (2, 108) = 0.911, p = 0.41). Results are outlined in Table 4.6.

| Table 4.6. Relationship between Factors and Participation |
|---------------------------------|----------|----------|----------|----------|
|                                 | β        | SE       | p        | 95% CI   |
| **Self-Efficacy**               | 0.02     | 0.03     | 0.54     | -0.04    | 0.07     |
| **Intentions**                  | 0.02     | 0.02     | 0.45     | -0.03    | 0.06     |

Answering the last research question, a linear regression revealed that the program directors’ disability orientation had a significant, positive relationship with the aquatic directors’ intention to provide opportunities for children with disabilities. Aquatic directors with a higher social model score had increased intentions of providing opportunities for children with disabilities in their aquatic programs. Table 4.7 shows the results of this linear regression.

| Table 4.7. Relationship between DO and Intentions |
|---------------------------------|----------|----------|----------|----------|
|                                 | β        | SE       | p        | 95% CI   |
| **Social Model**                | 0.50     | 0.13     | <0.01    | 0.24     | 0.76     |
| **Medical Model**               | -0.87    | 0.13     | 0.51     | -0.35    | 0.17     |
Chapter 5: Discussion

This study found that there was no relationship between the disability orientation of the aquatic program directors and opportunities to participate in aquatic program for children with disabilities. There was also no evidence to support a link between disability orientation and the participation of children with disabilities in the aquatic programs. This finding challenges the notion that an individual’s viewpoint of disability directly influences behaviors. However, this study revealed a connection between the aquatic director’s disability orientation and their intentions to provide opportunities for children with disabilities.

While proponents of the social model have long advocated that this approach to disability promotes the removal of barriers constructed by society that may prevent participation (Finkelstein, 1980; Oliver, 1990, 1996), the present study is the first to directly examine this relationship. Challenging this assertion and its own hypothesis, this study does not support a direct connection between the disability orientation and behavior. This finding is consistent with Dirth and Branscombe (2017), who found that individual’s disability orientation does not influence their behavior towards disability policy, meaning they were not more likely to look for social solutions to structural disability if they scored high on the social model. Collectively, the results of the current study, along with the study by Dirth and Branscombe (2017), may indicate that there is not a direct link between an individual’s disability orientation and their behavior.

Another potential explanation for these results can be found when evaluating the use of the proportion of children with disabilities participating in the aquatic
programs. In this study, opportunities for children with disabilities and the participation of children with disabilities in the aquatic programs were used as indirect measurements of the aquatic directors’ behavior. There are several limitations to this approach. First, it assumes that the aquatic directors at every organization have enough influence for this level of impact. Although Mackenzie et al (2016) showed leadership served an important role in the implementation of inclusion practices, the level of involvement by the director in each responsibility may vary by organization, and depend on size and organizational structure. Secondly, the measures used assume that all aquatic directors are fully involved in their programs and able to accurately report the participation numbers for children with and without disabilities. Lastly, it assumes that the aquatic directors have a direct relationship to the participation of children with disabilities in their program. In an organization, a multitude of barriers could influence the proportion of children with disabilities participating in the aquatic program, with the aquatic director being only one. These lead to the idea that the measures used for aquatic director behavior may not have provided an accurate measurement and biased the findings.

There is evidence to support the inclination that the proportion of children with disabilities participating in the program may not have directly measured aquatic director behavior. As seen in table 4.2, the participation of children with disabilities measurement was not significantly correlated to any other variable. However, significant correlations were found between the opportunities or offerings for individuals with disabilities, and multiple other variables. This disconnect is further highlighted when looking at intentions. According to numerous theories, intentions
has a direct link to behavior (Ajzen, 1985, 1991; Flay & Petraitis, 1994). Jeong and Block (2011) surveyed physical educators to examine the predictors of inclusive teaching behaviors in their classroom. They found that the teacher’s intentions to provide an inclusive classroom was the only direct predictor of implementing inclusive practices. In the current study, intentions are highly correlated with all variables, except for the aquatic directors’ disability orientation score with the medical model and with the participation of children with disabilities. A linear regression also showed no relationship between the directors’ intentions and the participation of children with disabilities. This shows further evidence that the proportion of children with disabilities participating in the program may not have been accurate for measuring aquatic director behavior. A proper measurement of aquatic director behavior may result in improved findings in the relationship with the aquatic director’s disability orientation.

An interesting finding of this study is the link between the aquatic director’s disability orientation, specifically their view of the social model, and their intentions to provide opportunities for children with disabilities in their aquatic programs. This connects the social model approach of disability to the positive intent of providing opportunities for children with disabilities. This is an important step forward in identifying the role of disability orientation in improving outcomes for individuals with disabilities. Within the current literature, links have only been found to beliefs or awareness, challenging the claims that the social model approach may eliminate societal barriers that decrease participation in social activities (Oliver, 1990, 1996). Dirth and Branscombe (2017) found that the social model served as a catalyst for
increased awareness of structural discrimination, with a positive association between the social model and the individual’s awareness of disablism. Logan, Bogart, Ross, and Woekel (in review) found that individual’s views on the social model were positively linked to their belief that self-mobility is a fundamental human right. This current study extends this connection a step farther, linking the social model to intentions.

The number of children participating in aquatic programs is an important outcome. There are many claims that state individuals with disabilities have fewer opportunities to engage in physical activity than their typically developing peers, particularly in research on barriers to physical activity (Barr & Shields, 2011; Bloemen et al., 2015; Columna et al., 2017; Jaarsma, Dijkstra, Geertzen, & Dekker, 2014). Contradictory to these claims, this study found that 92.6% of organizations offered opportunities for children with disabilities. It is important to note, however, that opportunities may not equate to participation in the aquatic program. This study also revealed that 75% of organizations had a disability proportion of 0.07 or less, suggesting that only 7 out 100 children that participate in the aquatic program are children with disabilities. Considering the number of children with disabilities in schools is currently 13% of the population (National Center for Education Statistics, 2015), and 22% of U.S. population is estimated to have a disability (Center for Disease Control, 2014), a clear gap can be seen in participation of children with disabilities in aquatic programs.

With the high number of opportunities available in the aquatic programs but low participation, there is an apparent disconnect between the programs and families.
Factors preventing children with disabilities and their families from walking through the program’s front door need to be considered. Many barriers that may limit participation have been identified in the literature, usually being divided into environmental and personal categories. Responsibility of the environmental barriers typically falls to the organization involved. Lack of information and resources regarding the programs available to children with disabilities is an environmental barrier commonly reported (Bloemen et al., 2015; Columna et al., 2017; Jaarsma et al., 2014; Rimmer et al., 2004). A lack of proper communication regarding opportunities available could be a potential contributing factor to the low participation rates demonstrated by this study.

When trying to identify reasons that may prevent initial participation by children with disabilities in a physical activity program, it is important to look beyond the environment. Personal factors can play a large role in participation. Studies looking at barriers for children with disabilities found that family and parent sourced barriers were also common. Concerns about safety (Columna et al., 2017), protective parents (Bloemen et al., 2015) and concerns over their child’s skills and abilities (Bloemen et al., 2015) were among those listed. In a study completed by Pitchford et al (2015), parent perceptions of physical activity were found to predict the level of activity in which their children with disabilities engaged. This finding demonstrates the importance of considering all types of barriers when trying to improve physical activity participation among children with disabilities. Using the examples listed, improving communication to both inform and educate parents about available
programs could potentially increase participation rates among children with disabilities.

Limitations of this study include a selection bias, wherein participants who completed the study may already have a higher interest in disability focused programming. This could cause the opportunities to be inflated from rates actual in the general population. It could also skew the disability orientation findings towards higher social model scores. It is also recognized that the term disability is broad, which can create a limitation in reporting. Those in a program setting may have limited access to diagnoses or information that would allow them to comfortably report certain disabilities, potentially under reporting the participation of children with disabilities. In addition, the reliability of Darling and Heckert’s the QDIO (2010) survey is understudied. Although this study produced similar reliability results as past studies, low reliability coefficients could limit the strength of the relationship between disability orientation and the dependent variables.
Chapter 6: Conclusion

This study was one of the few that examined the effect of disability orientation on behaviors. Although results did not find a direct link to behaviors, disability orientation, social model scores and intentions. This finding opens up the door for future studies to better understand the role the social model could play in shaping behaviors. It is recommended that future studies seek to identify a better measurement for program leadership behavior. With the health disparities that exist for children with disabilities, it is important to be mindful that increased participation in physical activity programs by children with disabilities is the desired outcome. To accomplish this, future research should also consider investigating the link between director’s behavior and the behavior or outcomes of the organization.
Bibliography

Abberley, P. (1987). The concept of oppression and the development of a social theory of

(pp. 11–39). Springer.

Decision Processes, 50*(2), 179–211.

Anastasiou, D., & Kauffman, J. M. (2011). A social constructionist approach to disability:

between impairment and disability. *Journal of Medicine & Philosophy, 38*(4), 441–
459.

Barr, M., & Shields, N. (2011). Identifying the barriers and facilitators to participation in
physical activity for children with Down syndrome. *Journal of Intellectual Disability

Experiences to Support Teacher Education for Diversity. *Educational
Considerations, 43*(1), 29–35.


when aiming to improve participation in physical activity in children with Spina
015-0265-9


Chapter 8: Appendix

Appendix A. IRB Approval

Human Research Protection Program
& Institutional Review Board
#308 Kerr Administration Bldg, Corvallis OR 97331
(541) 737-8008
IRB@oregonstate.edu
http://research.oregonstate.edu/irb

<table>
<thead>
<tr>
<th>Date of Notification</th>
<th>03/15/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notification Type</td>
<td>Approval Notice</td>
</tr>
<tr>
<td>Submission Type</td>
<td>Initial Application</td>
</tr>
<tr>
<td>Principal Investigator</td>
<td>JoonKoo Yun</td>
</tr>
<tr>
<td>Study Team Members</td>
<td>Bridgette Schram</td>
</tr>
<tr>
<td>Study Title</td>
<td>Factors influencing opportunities offered to children with disabilities in an aquatic setting</td>
</tr>
<tr>
<td>Review Level</td>
<td>FLEX</td>
</tr>
<tr>
<td>Waiver(s)</td>
<td>Documentation of Informed Consent</td>
</tr>
<tr>
<td>Risk Level for Adults</td>
<td>Minimal Risk</td>
</tr>
<tr>
<td>Risk Level for Children</td>
<td>Study does not involve children</td>
</tr>
<tr>
<td>Funding Source</td>
<td>None</td>
</tr>
</tbody>
</table>

APPROVAL DATE: 03/14/2018  EXPIRATION DATE: 03/13/2023
A new application will be required in order to extend the study beyond this expiration date.

Comments:

The above referenced study was reviewed and approved by the OSU Institutional Review Board (IRB). The IRB has determined that the protocol meets the minimum criteria for approval under the applicable regulations, state laws, and local policies.

This proposal has not been evaluated for scientific merit, except to weigh the risk to the human subjects in relation to potential benefits.

Adding any of the following elements will invalidate the FLEX determination and require the submission of a project revision:

- Increase in risk
- Federal funding or a plan for future federal sponsorship (e.g., proof of concept studies for federal RFPs, pilot studies intended to support a federal grant application, training and program project grants, no-cost extensions)
- Research funded or otherwise regulated by a federal agency that has signed on to the Common Rule, including all agencies within the Department of Health and Human Services
- FDA-regulated research
- NIH-issued or pending Certificate of Confidentiality
- Prisoners or parolees as subjects
- Contractual obligations or restrictions that require the application of the Common Rule or which require annual review by an IRB
- Classified research
- Clinical interventions
Appendix B. Instrument: Survey Questions

Project Title: Factors influencing participation of children with disabilities in aquatic programs
Principal Investigator: Joonkoo Yun Student Researcher: Bridgette Schram
Purpose: Children with disabilities report lower levels of physical activity, with multiple factors influencing their participation in physical activity programs. Aquatic programs provide an opportunity to engage in physical activity, minimizing limitations. However, numerous barriers exist that influence participation. The person who leads the program through evaluation or management of employees plays an important role in the available offerings and opportunities available to children with disabilities. Understanding the perception of and barriers faced by the aquatic director is key to understanding how to alleviate these factors that may limit participation of children with disabilities.

This study aims to identify the relationship between various factors and the opportunities offered for children with disabilities.

Activities: You will be asked to complete this online survey on factors influencing participation of children with disabilities in an aquatic program. The survey will contain questions concerning your demographics, program information of the organization for which you work and other factors that could influence participation.

Time: Completion of this survey will take approximately 15 minutes.

Benefit: There is no direct benefit to you for completing this survey. However, your participation will increase understanding of factors limiting participation of children with disabilities in aquatic programs, and hopefully allow for the creation of interventions aimed at reducing barriers.

Voluntary and Confidentiality: Participation in this survey is voluntary and all surveys will be anonymous and kept confidential.

Contact: If you have any questions about this research project, please contact Bridgette Schram at schramb@oregonstate.edu. If you have any questions about your rights or welfare as a participant, please contact the Oregon State Institutional Review Board (IRB) office at (541) 737-8008 or by email at IRB@oregonstate.edu.

Would you like to participate in this study?

☐ Yes

☐ No

Skip To: End of Survey If Project Title: Factors influencing participation of children with disabilities in aquatic pr... = No

End of Block: Consent

Start of Block: Eligibility Screening

At your current aquatic program, does your current role include at least one of the following responsibilities: hiring of instructors, delivering or organizing staff training, program evaluation, or program development?

☐ Yes

☐ No

Skip To: End of Survey If At your current aquatic program, does your current role include at least one of the following re... = No
Have you worked in your current position for 1 year or longer?

- Yes
- No

Skip To: End of Survey if Have you worked in your current position for 1 year or longer? = No

Aquatic Leadership demographics

The following questions are to gather information about you, as someone in a leadership role for an aquatic program. This helps us understand who our participants are when interpreting the data. Please answer the following questions to the best of your ability.

Select the following roles you are responsible for in your position: (Mark all)

- Program Evaluation
- Hiring of instructors
- Training of staff
- Program development
- Other main roles: ____________________________
- None of the above
Number of years in your current position with organization:

- under 1 year
- 1-2 years
- 3-5 years
- 6-10 years
- 11 years and over

*Skip To: End of Survey if Number of years in your current position with organization: = under 1 year*

How old are you in years

Gender

- Male
- Female
- Prefer not to answer
What ethnicity and/or race do you identify as?

- [ ] American Indian, Native American or Alaska Native
- [ ] Asian
- [ ] Black or African American
- [ ] Hispanic or Latino
- [ ] Pacific Islander or Native Hawaiian
- [ ] White
- [ ] Other ________________________________
- [ ] Prefer not to answer

Do you consider yourself to have a disability?

- [ ] Yes
- [ ] No

Do you know someone with a disability?

- [ ] Yes
- [ ] No

Display This Question:

If Do you know someone with a disability? = Yes
How often do you interact with that person (choose the individual you interact with the most)?

- Daily
- 1-2 times a week
- 1-2 times a month
- 1-2 times a year
- Less than 1 time a year

End of Block: Aquatic leadership demographics

Start of Block: Disability Orientation

For the following questions, refer to your own definition of disability when answering. Please answer the questions as honestly as possible. There are no right or wrong answers and this survey is anonymous.
Please indicate the extent to which you agree or disagree with each statement below by selecting your response.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>If I had a choice I would prefer not to have a disability</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I feel sorry for people with disabilities</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I wish someone would find a cure for all disabilities</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Doctors and other medical professionals know what is best for people with disabilities</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>People with disabilities need to learn to adjust to living in a world in which most people are not disabled</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Indicate the extent to which you agree or disagree with each statement below by selecting your response.

<table>
<thead>
<tr>
<th>People should try to hide their disability whenever they can</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>People should try to overcome their disabilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The most important thing for people with disabilities is to accept what they cannot change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of accessibility and discrimination by employers are the main reasons why disabled people are unemployed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It isn't easy for people with disabilities to be treated as &quot;normal&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Indicate the extent to which you agree or disagree with each statement below by selecting your response.

<table>
<thead>
<tr>
<th>People with disabilities need to fight for their rights more than non-disabled people</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The biggest problem faced by people with disabilities is the attitudes of other people</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All buildings should be accessible to people with disabilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am familiar with the Americans with Disabilities Act (ADA) and think it is a good law</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am familiar with the Disability Rights Movement and support its goals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Organization information  The following items are intended to gather information about the organization or facility in which you work. Organization refers to an independently run entity that could have one single facility or have multiple facilities that collaborate together. The facility refers to a single location of programming offered by the organization.

If you oversee multiple facilities/locations for the organization you work, please choose the facility in which you serve the most customers when answering the following questions. Please answer the questions honestly and to the best of your ability. If you do not have access to the information for a question, please skip that question.

Zip Code of Facility

________________________________________________________________

What year did your facility open?

________________________________________________________________

Which one of the following most closely describes your aquatic facility's type of organization? (mark all that apply)

☐ Community or City Parks and Recreation

☐ Non-profit

☐ For-profit

☐ Public

☐ Private/Membership based

☐ Other: ____________________________________________________________
What type of classes did your facility offer for children in the last year (Jan 2017-Dec 2017)? (select all that apply)

- [ ] Private Swim Lessons
- [ ] Small Group Swim Lessons (2-5 children)
- [ ] Medium Group Swim Lessons (6-12 children)
- [ ] Large Group Swim Lessons (13 or more children)
- [ ] Other Aquatic Programs: ________________________________________________

What is the approximate number of children who have attended aquatic programs through your facility in the last year (Jan 2017-Dec 2017)?

________________________________________________________________

What is the approximate number of in-house trainings you have held for your staff in the last year (Jan 2017-Dec 2017)?

- [ ] None
- [ ] 1-2 (Annually)
- [ ] 3-8 (Seasonally or quarterly)
- [ ] 9-17 (Monthly)
- [ ] 18-25 (Bi-Weekly)
- [ ] 25 or more (weekly)
What advertising/marketing tools did you use to promote your aquatic programs in the last year (Jan 2017-Dec 2017)? (check all that apply)

- Website
- Flyers
- Communication with or partnership with organizations in the community
- Booths at community events
- Radio/TV ads
- Newspaper ads
- Social media campaigns or posts
- Other: ________________________________________________
- None

End of Block: Organization Information

Start of Block: Organization Disability Information

For the remaining questions, use the following definition of disability provided by the CDC: A disability is any condition of the body or mind (an impairment) that makes it more difficult for the person to perform certain activities and interact with the world around them. This can be visible or invisible and could affect them physically or cognitively.

Does your facility offer lessons for children with disabilities?

- Yes
- No

Skip To: End of Block if For the remaining questions, use the following definition of disability provided by the CDC: A disability is... = No
What is the approximate number of children with disabilities who have attended aquatic programs through your facility in the last year (Jan 2017-Dec 2017)?

__________________________

What type of classes did your facility offer for children with disabilities in the last year (Jan 2017-Dec 2017)? (select all that apply)

☐ Private Swim Lessons

☐ Small Group Swim Lessons (2-5 children) that include BOTH children with disability and without disability in the same class

☐ Medium Group Swim Lessons (6-12 children) that include BOTH children with disability and without disability in the same class

☐ Large Group Swim Lessons (13 or more children) that include BOTH children with disability and without disability in the same class

☐ Other Aquatic Programs that include BOTH children with disability and without disability in the same class: ______________________________

☐ Small Group Swim Lessons (2-5 children) designed SPECIFICALLY for children with disabilities

☐ Medium Group Swim Lessons (6-12 children) designed SPECIFICALLY for children with disabilities

☐ Large Group Swim Lessons (13 or more children) designed SPECIFICALLY for children with disabilities

☐ Other Aquatic Programs designed SPECIFICALLY for children with disabilities

________________________________________________

☐ Other ______________________________________
The individuals with disabilities that have been involved in the aquatic programming at your facility in the last year (Jan 2017-Dec 2017) have been associated with or diagnosed with the following (select all that apply):

- [ ] Amputation(s)
- [ ] Paralysis of one or more limbs
- [ ] Autism
- [ ] Cerebral Palsy
- [ ] Down Syndrome
- [ ] Traumatic brain injury
- [ ] Other intellectual disability
- [ ] Spina Bifida
- [ ] Other: ________________________________________________
- [ ] None
- [ ] I don't know

End of Block: Organization Disability Information

Start of Block: Potential Factors - Quality of Staff

**Potential factors influencing participation**  The following items are designed to understand the potential factors and barriers that could limit opportunities for children with disabilities in your organization and/or will limit participation in programs. Please answer these questions as honestly as possible and to the best of your ability. There are no right or wrong answers and this survey is anonymous. If you do not have access to the information, you may skip that question.
Indicate the extent to which you agree or disagree with each statement below by selecting your response.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of my staff at my facility have the skills and abilities to safely and effectively work with children with disabilities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All of the staff at my facility is comfortable working with children with disabilities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My organization offers or promotes professional development opportunities to improve staff skills and abilities in safely and effectively working with children with disabilities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The staff at my facility has the knowledge to implement modifications and accommodations to support participation of children with disabilities when needed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

End of Block: Potential Factors - Quality of Staff

Start of Block: Potential Factors - Marketing
Indicate the extent to which you agree or disagree with each statement below by selecting your response.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My organization/facility markets and advertises opportunities for children with disabilities</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Every time aquatic programs at your facility/organization are advertised and marketed, opportunities for children with disabilities are included or mentioned</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>My organization/facility has a marketing and advertising strategy that is specific to promoting aquatic program opportunities for children with disabilities</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Children with disability are visually represented in our marketing and advertising mediums</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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</tbody>
</table>

End of Block: Potential Factors - Marketing

Start of Block: Potential Factors - Accessibility
Indicate the extent to which you agree or disagree with each statement below by selecting your response.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My organization has the resources and equipment to provide the necessary accommodations or modifications to support participation of children with disabilities in our aquatic programming</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The facility and parking lot are accessible for all disabilities (including parking spaces, widened doors, an alternative to stairs, room to navigate, and braille signage)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The facility's restrooms and locker rooms are accessible for all disabilities (including space to navigate and accessible stalls and showers)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The pool and deck are accessible for all disabilities (including space to navigate and a safe entrance into the pool via a lift, zero entry, stairs instead of ladder)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My organization/facility has finances built into the budget to allocate towards programs offering opportunities for children with disabilities</td>
<td>Strongly disagree</td>
<td>Somewhat disagree</td>
<td>Neither agree nor disagree</td>
<td>Somewhat agree</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>---</td>
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<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Offering aquatic programs for children with disabilities is financially difficult</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My organization/facility gives the financial support needed to offer and provide opportunities for children with disabilities in our aquatic programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My organization/facility provides the financial support needed to market and advertise opportunities for children with disabilities in our aquatic programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Indicate the extent to which you agree or disagree with each statement below by selecting your response.

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I believe I have the skills and abilities to safely and effectively teach children with disabilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am comfortable addressing and providing accommodations or modifications to allow for participation of children with disabilities in our aquatic programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believe I have the ability and knowledge to train instructors how to teach children with disabilities safely and effectively</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Providing aquatic program opportunities for children with disabilities is difficult for me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have the ability and control to find ways to increase opportunities and participation for children with disabilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

End of Block: Potential Factors - Self Efficacy
## Potential Factors - Intentions

Indicate the extent to which you agree or disagree with each statement below by selecting your response.

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I intend to prioritize increasing aquatic program options to children with disabilities in the next 12 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I, and/or my organization, have purchased or have plans to purchase equipment specific for use in accommodating children with disabilities in our aquatic programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I, and/or my organization, have made plans on how we will involve children with disabilities in our aquatic programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I, and/or my organization, have developed a marketing plan with a goal of reaching children with disabilities and improving their participation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In your opinion, what is the factor that has the greatest influence on limiting your ability to offer opportunities for children with disabilities?

- Financially able to support accommodations and modifications
- Ensuring an accessible facility
- Knowing the correct accommodations and modifications
- Finding staff with interest in working with children with disabilities
- Finding staff with experience in working with children with disabilities
- Training the staff on how to effectively work with children with disabilities
- Getting children with disabilities to participate in our programs
- My own limited interest
- Getting support from my organization
- Other ________________________________

Thank you for completing the survey! If you have multiple locations, the person in charge of programming and/or employees at different locations is also eligible to take this survey.

Feel free to share this survey with other aquatic program directors and managers. We also have a Facebook page to help with ease of sharing, with the links provided below:

https://www.facebook.com/aquaticdisabilityresearch

http://oregonstate.qualtrics.com/jfe/form/SV_e8WhZgCO6HLgKTb
Appendix C. Recruitment Emails

Email address:

Subject: Recruitment for Research Study – Improving participation from children with disabilities

Dear (organization contact/aquatic director):

Aquatic programs provide a great opportunity for ALL children to engage in physical activity including children with disabilities. However, there are many barriers and challenge to provide adequate service to children with disabilities. The person in charge of program and employee management has an important role in the offerings and opportunities available. Understanding the perception and barriers faced by those in this role is important in finding ways to alleviate these factors limiting participation from children with disabilities. Therefore, we are conducting a research study to help aquatic programs successfully offer opportunities for children with disabilities.

We invite you to participate in a confidential survey so your thoughts and opinions can be heard. The survey should take approximately 15 minutes to complete. The survey will include questions related to the general information of the director and organization, as well as the offerings and factors that could limit participation. Please click the link: Factors and Barriers Limiting Participation for Children with Disabilities.

If the link is not working you may cut past the following link: xxxx xxxx

Participation in this study is voluntary, and you may skip any questions that you do not want to answer. If you decide to participate, you are free to withdraw at any time. If you have any questions about the study, please contact Bridgette Schram at schramb@oregonstate.edu. If you have any questions regarding rights or welfare as a participant please contact Oregon State University Institutional Review Board (IRB) office at (541) 737-8008 or email at IRB@oregonstate.edu. This research has been reviewed and approved by the Oregon State University IRB Office. Thank you for your time and consideration.

Sincerely,

Bridgette Schram
schramb@oregonstate.edu

PI: Joonkoo Yun
Study Title: Factors influencing opportunities offered to children with disabilities in an aquatic setting.
First follow up email

Subject: Improving participation from children with disabilities – Research study

Dear >>>>

I am sending this email to follow up our invitation for participation in a research entitled *Factors influencing opportunities offered to children with disabilities in an aquatic setting.*

If you have already responded, thank you and please ignore this email. To maintain confidentiality, we are not able to keep track of your responses and I apologize for multiple emails.

If you have not responded yet, I would like to invite you to participate in our study. The purpose of study is help identify and understand potential factors that may limit opportunities and participation of children with disabilities in aquatic programming. The survey should take approximately x minutes to complete. Please click the link: Factors and Barriers Limiting Participation for Children with Disabilities.

If the link is not working you may cut past the following link: xxxx xxxx

Participation in this study is voluntary, and you may skip any questions that you do not want to answer. If you decide to participate, you are free to withdraw at any time. If you have any questions about the study, please contact Bridgette Schram at schramb@oregonstate.edu. If you have any questions regarding rights or welfare as a participant please contact Oregon State University Institutional Review Board (IRB) office at (541) 737-8008 or email at IRB@oregonstate.edu. This research has been reviewed and approved by the Oregon State University IRB Office. Thank you for your time and consideration.

Sincerely,

Bridgette Schram
schramb@oregonstate.edu

PI: Joonkoo Yun
Study Title: Factors influencing opportunities offered to children with disabilities in an aquatic setting.
Second follow up email

Subject: Improving participation from children with disabilities – Research study

Dear >>>>

This is the final email following up on our invitation to participate in an online research survey entitled *Factors influencing opportunities offered to children with disabilities in an aquatic setting.*

Again, if you have already responded, thank you and please ignore this email. To maintain and confidentiality, we are not able to keep track of your responses and I apologize for multiple emails.

If you have not responded yet, I would like to invite you to participate in our study. The purpose of study is help identify and understand potential factors that may limit opportunities and participation of children with disabilities in aquatic programming. The survey should take approximately x minutes to complete. Please click the link: Factors and Barriers Limiting Participation for Children with Disabilities. If the link is not working you may cut past the following link: xxxx xxxxx

Participation in this study is voluntary, and you may skip any questions that you do not want to answer. If you decide to participate, you are free to withdraw at any time. If you have any questions about the study, please contact Bridgette Schram at schramb@oregonstate.edu. If you have any questions regarding rights or welfare as a participant please contact Oregon State University Institutional Review Board (IRB) office at (541) 737-8008 or email at IRB@oregonstate.edu. This research has been reviewed and approved by the Oregon State University IRB Office. Thank you for your time and consideration.

Sincerely,

Bridgette Schram
schramb@oregonstate.edu

PI: Joonkoo Yun
Study Title: Factors influencing opportunities offered to children with disabilities in an aquatic setting.
Appendix D. Social Media Recruitment Posts

**Advertisement 1:** Help promote physical activity for all! Aquatic directors/managers need to complete online survey. Results will be used to help alleviate barriers for participation in physical activity programs by children with disabilities. [Link to Survey]

To participate in this study, you must:

- Be responsible for employee and/or program management and development
- Have been in this role at your organization for at least 1 year.

Participation in this study involves:

- Completing an online survey, which takes approximately 15 minutes.

To find out more information, contact Bridgette Schram at schramb@oregonstate.edu

**Advertisement 2:** Aquatic directors/managers needed to complete survey! Help provide valuable insight to barriers faced by aquatic programs in providing opportunities for children with disabilities. [Link to Survey]

To participate in this study, you must:

- Be responsible for employee and/or program management and development
- Have been in this role at your organization for at least 1 year.

Participation in this study involves:

- Completing an online survey, which takes approximately 15 minutes.

To find out more information, contact Bridgette Schram at schramb@oregonstate.edu

**Advertisement 3:** Final Call for aquatic program directors/managers! Complete survey to help improve limiting factors to participation of children with disabilities in programs. [Link to Survey]

To participate in this study, you must:

- Be responsible for employee and/or program management and development
- Have been in this role at your organization for at least 1 year.

Participation in this study involves:

- Completing an online survey, which takes approximately 15 minutes.

To find out more information, contact Bridgette Schram at schramb@oregonstate.edu