

# **The Influence of Adaptive Sports on Self-Efficacy**

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## **Influence of Disability on Occupation**

Physical disability is defined by the World Health Organization as a body impairment that limits activities and/or restricts participation (2017). A physical disability can have a negative impact on an individual's self-esteem and can prevent participation in recreational and social activities, that benefit physical and emotional wellness, thus creating the potential for isolation from peers (Murphy & Carbone, 2008; Post & Van Leeuwen, 2012). Approximately 22,444,000 people are living with physical disabilities in the United States (Brault, 2012), and only 25.6% are physically active (Holland, 2015). Both men and women with sensory impairments have the lowest level of participation in physical activity, although males with disabilities are more likely to engage in physical activity than woman with disabilities (Disabled World, 2016). Inactivity has the potential to increase chances of having both physical and psychological conditions such as high blood pressure and depression, and can also lead to social isolation and decreased quality of life for individuals with disabilities (Groff, Lundberg & Zabriskie 2009; Holland, 2015; Kemp, 2006). Research has shown that individuals with a disability often feel as though society defines them by their disability or treats them as though they are ill or are responsible for their disability. (Buljevac, Majdak, & Leutar, 2011). Adaptive sports have been shown to combat secondary medical conditions and promote self-efficacy through engagement in occupations such as health management and maintenance, work, play, leisure, and social participation and therefore are an important intervention to consider.

## **Adaptive Sports**

Adaptive sports are conventional sports that have been altered and modified to meet the needs of people with disabilities through a wide range of activities (Lastuka & Cottingham, 2016). Involvement in adaptive sports has a long lasting positive effect for people with

disabilities. According to Disabled Sports USA, individuals involved in adaptive sports programs have increased employment rates, more physically active lifestyles, and enjoy socializing more (2009). Additionally, regular participation in sports has shown to not only decrease depressive symptoms but also increase overall physical and mental well-being (Babiss & Gangwisch, 2009; Gisladdottir, Matthiassdottir & Kristjansdottir, 2013). Although involving able-bodied participants, Armstrong and Oomen-Early found that individuals who were involved in athletics as young adults, reported having a higher self-esteem and feelings of social connectedness than non-athletes, thus generalizing information about sports to individuals with varying abilities (2009).

Adaptive sports are shown to improve overall health, increase life satisfaction, decrease depressive symptoms, and develop a positive self and athletic identity in individuals with a disability (Groff, Lundberg, & Zabriskie, 2009). By providing a significant outlet for expression, adaptive sports contribute to development of self-perception, create a sense of group identity, and promote the ability to alter perception of disability (Groff and Kleiber, 2001). Adaptive equipment such as sit skis, sit ski cages, the block, varied handles, the boom, delgar slings, and outriggers allow individuals with different abilities to participate in adaptive water skiing both recreationally and competitively and keep an active lifestyle. Additionally, through adaptive sports individuals with disabilities and their care partners, friends, and family have opportunities to engage in mentoring experiences and networking in a safe environment with other skiers, peers, and trained volunteers.

### **Adaptive Sports and Self-efficacy**

According to psychologist Albert Bandura's self-efficacy theory, perceived self-efficacy is defined as peoples' beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives (Bandura, 1994). More

specifically, self-efficacy can be defined as one's belief in one's ability to succeed in specific situations or accomplish a task (Bandura, 1994). Bandura also states that human accomplishments and positive well-being require an optimistic sense of personal efficacy (1994). A study by Blinde and McClung (1997), explored the concept of self in athletes with a disability and found that partaking in recreational activities enhanced both physical and social self as well as increasing confidence, thus supporting involvement in adaptive sports has the ability to positively influence self-efficacy.

## **Research**

Students from Quinnipiac University's Occupational Therapy Department conducted research exploring the impact of adaptive sports, specifically adaptive water skiing, on self-efficacy. Using a combination of a semi-structured interview and Likert-type survey questions, exploration of the benefits of involvement in adaptive water skiing were investigated for six participants with physical disabilities who attend events with LOF Adaptive Skiers.

## **LOF Adaptive Skiers**

LOF Adaptive Skiers is a non-profit 501(c)(3) organization providing adaptive water and snow skiing to children, adults, and veterans with disabilities. Since 1992 LOF has been providing transformative experiences to individuals through both recreational and competitive skiing. LOF began when Founder and Executive Director Joel Zeisler was contacted by a Vietnam veteran who wanted to re-learn to waterski after a rocket-propelled grenade claimed his vision in the war. This veteran not only re-learned to ski but he also went on to win gold medals at both the World and US Disabled Water Ski Competitions. The mission of LOF remains to build lasting confidence and fulfillment through exposure and professional training

in recreational and competitive water and snow skiing for children, adults and veterans with disabilities (LOF Adaptive Skiers, n.d.).

### **Instrument Design and Data Collection**

The instrument for the qualitative portion of this study was a semi-structured interview developed by the investigators. The purpose of the interview was to allow for exploration of the impact of adaptive skiing on participants in relation to self-efficacy, psychosocial, and physical wellness. The instrument for the quantitative portion of this study was an investigator-developed survey consisting of demographic questions (e.g., disability, years living with disability, years participating in adaptive sports, and geographical location) and Likert-type frequency questions related to self-efficacy (e.g., perceived skill level, quality of life, and empowerment).

### **Participants**

Participants involved in the study included six adult (age 18 and older) ski participants from LOF Adaptive Skiers. The six participants' diagnoses included, spinal cord injury (high and low thoracic, both incomplete and complete), blindness, amputation (bilateral upper extremity transradial and wrist disarticulation and unilateral lower extremity below the knee), and high-functioning autism.

### **Results**

Themes that emerged from the transcribed interviews demonstrated that participation in adaptive water skiing provided a positive impact on quality of life and self-efficacy and supported social participation, mentoring opportunities, and health and well-being for the interviewed participants. After becoming involved in adaptive sports each participant reported an increase in their quality of life. Adaptive sports facilitated a sense of success, confidence

and provided an escape from their disability and everyday life. Participant 1 stated that after her injury, “I just thought my quality of life would be crappy...but my quality of life is actually better.” Successfully overcoming physical barriers challenged and encouraged future participation in new occupations for her as well as other participants.

Overwhelming consistency among participants surfaced that suggested involvement in adaptive water skiing provided motivation to engage in other endeavors that otherwise would not have been seen as achievable. Such endeavors included involvement in other sports, building relationships with others and becoming mentors for other people with physical disabilities. Participant 4 stated, “adaptive sports provide opportunities for a challenge and also empowers people to want to be able to do more in their lives.” Participant 2 supported that statement, saying that after involvement in adaptive skiing, “I was bound and determined to live the normal life I lived prior to my disability.” This increased occupational engagement often coincided with improved self-efficacy.

All participants also agreed that participation in adaptive water skiing has improved their physical well-being which has positively carried over into their everyday lives. Participant 3 said, “I lost some weight, I can feel my muscles... my heart is better, my cholesterol is better, my health in general is much better.” These physical benefits worked to reduce the potential for secondary medical conditions and, due to the nature of physical activity, yielded an increase in physical stamina, endurance, core stability and muscle strength as directly reported by participants.

Participants shared that family, support groups and LOF positively impacted their recovery. Undisputed agreement existed when the topic of support was explored. Participants felt that they both support each other and receive emotional support during adaptive water skiing.

Participant 3 stated that “we kind of, like, push each other.” Participant 5 talked about the LOF community, saying, “you’re just surrounded by people that want everyone to thrive to be successful at doing what they want to do within the sport” and “we push ourselves to be better at the sport.” These supports have turned into friendships and extend now to other facets in life. Data showed that multiple participants found themselves involved in mentoring programs following their injury and now have gone on to mentor newly injured or new skiers about opportunities. Sharing experiences with individuals going through the similar situations was also reported to be a mutual benefit. Participant 5 spoke to this when he said, “I’m not shy about talking about anything especially involved in educating individuals that are looking to learn more about SCI.” Participant 3 also talked about his mentoring experience when he said, “so that they can, you know, learn what I went through and also feel more confident with themselves.” Confidence for some had been instilled long before their injury; however for others it began to grow after the involvement in adaptive water skiing.

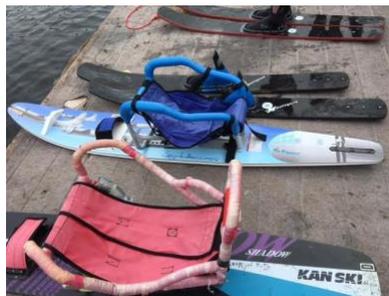
### **Quantitative Results**

Six participants participated in the survey with ages ranging between 19 and 72 years old. Five out of six participants’ diagnoses are acquired injuries (non-congenital) and one individual was born blind. All participants reported being involved in sports prior to their injury. Most participants reported travelling over an hour to get to the adaptive water skiing site. Years of involvement with adaptive water skiing varied. See Table 1.

Five out of five participants who suffered an acquired injury answered that they strongly agreed that participating in water skiing improved quality of life and improved physical wellness. All six participants stated that there was an improvement in psychological wellness, with four of the participants agreeing strongly. Four out of six participants stated that they have become more

active in the community after involving themselves in adaptive water skiing with participant 2 who noted that she was active prior to participation. Five out of six participants shared that participation in adaptive water skiing improved their self-esteem. Participant 1, who had a neutral response to the question, noted that this was due to positive self-esteem prior to participation in adaptive water skiing and after the injury. When asked why participants were involved in adaptive water skiing, several common responses were noted. See Chart 1.

The results of this study evoked a multitude of implications for occupational therapy practice and those involved with the rehabilitation process. The concept of self-efficacy, for many of the participants, related to breaking physical barriers that were thought to be impossible after sustaining their injury or even growing up with a congenital disability. Insight was gained into understanding the impact of participation in and perception of adaptive water skiing and self-efficacy, the effects of participation in adaptive water skiing both physically and emotionally, and potential areas in which the occupational therapy process can be included to holistically provide and enhance existing adaptive sports community based programs.



Pictures courtesy of LOF Adaptive Skiers

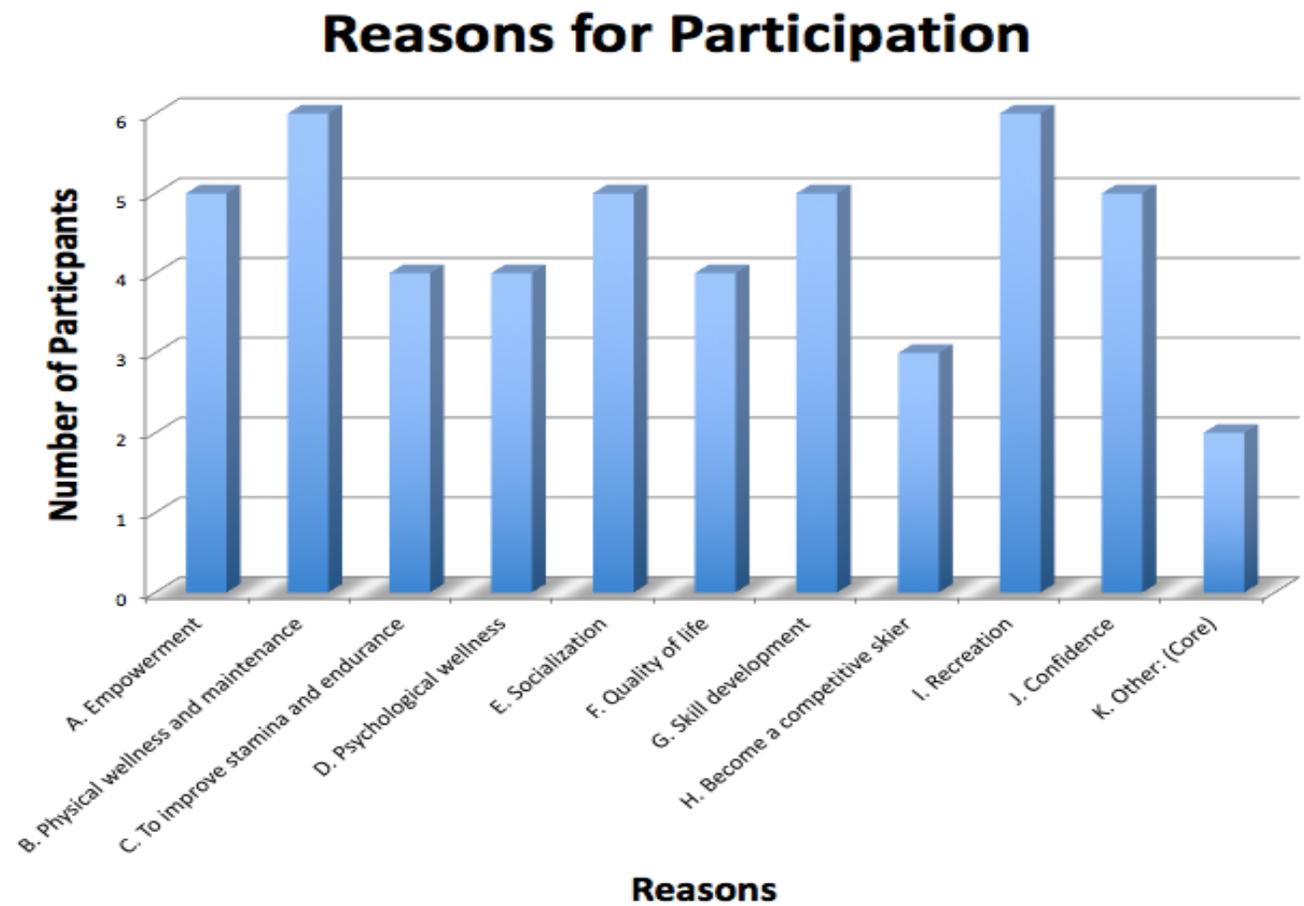
**Table 1:**

**Years Involved with Adaptive Skiing**

Years	Number of Participants
Less than 2	1
3-6	2
7-10	1
More than 10	2

**Chart 1:**

**Reasons for Involvement with Adaptive Skiing**



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