

Spring 2018

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Erin Fenwick

University of Akron, enf13@zips.uakron.edu

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Recommended Citation

Fenwick, Erin, "The Impact of Being a Member of a Swim Team on Individuals with Down Syndrome" (2018).
Honors Research Projects. 740.

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The Impact of Being a Member of a Swim Team on Individuals with Down Syndrome

Erin Fenwick

University of Akron

Author Note

Erin Fenwick, Student, University of Akron

This research was conducted for a William's Honors College Research Project.

Correspondence concerning this article should be addressed to Erin Fenwick.

Contact: enf13@zips.uakron.edu

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Abstract

This paper explores the impacts of being a member of a swim team on individuals with Down syndrome through a literal replicated case study on two individuals with Down syndrome. By conducting structured interviews with both individuals, their parents, and coaches, as well as research from written articles, the impacts of participating on a swim team are identified by physical health, behavior, and self-perception. Physical health changes are measured by weight, energy level, and muscle tone. Both positive and negative behavior changes were shared to me by the parents and coaches. Self-perception changes are measured by levels of self-confidence and self-image. The overall findings of this paper suggests that, in these two cases, being a member of a swim team impacted both individual's life in numerous positive ways. However, because this was a small study, it should be replicated or researched further before concluding that being a member of a swim team has positive impacts for all individuals with Down syndrome.

The Impact of Swimming on Individuals with Down Syndrome

In this case study, I investigated the impact of physical health, behavior, and self-perception when being involved on a swim team as an individual with Down syndrome. Through a series of interviews conducted by myself with parents, coaches, and the individuals participating in the study, I analyzed the following: Physical health, behavior, and self-perception. These three main categories were chosen because they affect the quality of daily life of an individual. Each category was broken down into smaller areas to simplify the data collection process.

Physical health changes were measured by changes in weight, energy levels, and muscle tone. Obesity can become a problem for people with Down syndrome. According to an article from the US National Library of Medicine written by Dr. Katherine Froehlich-Grobe and Dr. Donald Lollar, “The combination of disability and weight gain can create a vicious cycle, posing additional health burdens and further restricting functioning and independence. Further, people living with disabilities may be at greater risk than their peers without disabilities for weight gain due to low levels of activity” (Froehlich-Grobe and Lollar, 2011, para 3). By learning how to exercise on a regular basis, individuals will be able to control their weight gain and keep themselves at an appropriate size and weight. Energy level is defined as: “the strength and vitality required for sustained physical or mental activity” (Lindberg, 2002, p.447). By exercising regularly, a person’s energy level can remain stable, minimizing times of great fatigue or high energy. For example, in an article about swimming and disabilities it was stated that, “Since water activity has a cardio component, participants can stretch muscles and increase their stamina” (Pools of Fun, 2018, Improved Stamina section, para. 1). This increased stamina will

help individuals continue to exercise and improve their physical health in a positive way. Muscle tone is defined as: “the normal level of firmness or slight contraction in a resting muscle” (Lindberg, 2002, p. 1466). Swimming can help increase muscle tone. Swimming is a low impact, high resistance exercise. According to Gene Callen, “Because water is 600-700 times more resistive than air, muscles can strengthen quicker. Resistance exercises in the pool can be more effective than those done on land” (Callen, 2015, Top 4 Benefits of Water Therapy section, para 1).

Behavior changes were measured by analyzing changes over the baseline levels of behaviors that were shared to me by the parents and coaches. Positive behavior changes can include:

For parents with children of any disability, recreational activities such as swimming helps the children improve their family connections. Even for adults, swimming boosts confidence and improves their social skills. Swimming with other people in a public pool enhances community spirit and it provides a chance to meet new people and develop social skills. Spending some time at the pool or the beach with family and friends also increases the shared memories and thus better mental health through socialization and intimacy. (Shir, 2015, Improved Behavioral Outcomes section, para 1)

Socialization and appropriate public behaviors are an important aspect of life to learn, understand and apply.

Changes in self-perception were measured by analyzing levels of self-confidence and self- image. Self-confidence is defined as: “a feeling of trust in one’s abilities, qualities, and judgment” (Lindberg, 2002, p. 1240). By being on a swim team, individuals with Down

syndrome are participating in an activity away from their parents or guardians. According to Daniel Shir, “being involved in recreational and competitive sports can greatly increase their independence. This in turn improves their self-confidence which leads to improved quality of life” (Shir, 2015, Improves Physiological Well Being section, para 1). Self- image is defined as: “the idea one has of one’s abilities, appearance, and personality” (Lindberg, 2002, p. 1241). Exercise and socialization can help increase an individual’s positive self-image. According to Kathleen Martin Ginis, a kinesiology professor at McMaster University in Ontario, Canada, “doing virtually any type of exercise, on a regular basis, can help people feel better about their bodies.” All three categories, physical health, behavior, and self-perception are connected. If an individual participates in a team sport, their physical health, behaviors, and self-perception will all benefit.

Method

Measurements were completed through a series of structured interviews based on observations by the parents, coaches, and individuals. Due to the nature of the data collection, there may have been bias included during the interview process. Two individuals took part in this case study. Both individuals are males who live in the Akron, Ohio area and are members of the Summit County Stars Special Olympic Swim Team (the ”Summit Stars”), which includes approximately 35 swimmers, all of whom have either Down syndrome or a similar disability. Case I informed me that his current age is 20 years old. Case II informed me that his current age is 35 and 1/2 years old.

Results

Case I

Case I began swimming at age 12. The first team he participated on was the Summit Stars. The parents explained that several reasons went into the decision to have their son participate in a team sport. They learned about the team from a family friend with a child of similar age and disability. They said it was a great atmosphere and the coaches allowed the swimmers to work at their own pace on their swimming abilities. In addition, the parents believed that participating on a team would be beneficial physically and socially for their son (Parents. Case I, personal communication, February 9, 2018).

Case I's parents were asked, "Before swimming did you have any concerns with the child's weight, energy levels, or muscle tone?". They did not have any concerns about their son's weight or energy levels. He has always been small and his energy has been healthy. They knew it would be an effective method to improve his low muscle tone. After swimming began, the parents saw that swimming helped increase his muscle tone (Parents. Case I, personal communication, February 9, 2018). The coaches noticed similar patterns of physical health in Case I. When he began Case I was a young, thin, energetic swimmer. As he has aged, his energy has calmed down and his skills in the pool have increased due to his ability to focus more clearly on tips and techniques coming from the coaches (Coaches, personal communication, February 12, 2018).

When asked, "Before joining the Summit Stars, did you have any concerns regarding your child's behavior?", the parents were able to describe several areas where improvement was necessary. Case I needed to be able to learn how to follow through. By placing him on a team, he would have to learn that he could not get out of practice anytime he wanted, that he is on a team and he is expected to participate the same as every other team member. He also needed to work

on sharing. By being on a swim team, he will learn how to share a lane and equipment with other teammates. Case I also needed to learn appropriate pool etiquette. After swimming had begun Case I's parents noticed that he was increasing his positive behavior in all areas of his life. Swimming on a team was helping him to release energy and be able to control his emotions more effectively. They also saw Case I applying lessons he learned being on a swim team to everyday life, such as sharing, making friends, and appropriate public behavior (Parents. Case I, personal communication, February 9, 2018). The coaches were asked to relay their observations on Case I's behavior as well. When he began, Case I was a typical 12-year-old in the sense that he had high energy and wanted to do his own thing. He was relatively noncompliant because he wanted to have a good time and be with friends and he was not interested in following the practice as required of him. As he has participated on the team he has matured greatly, both in the pool and socially. He participates in practice by listening to what the coaches are saying, and he is social with all the members of the team. Case I is also much less stubborn and more willing to try new strokes and techniques (Coaches, personal communication, February 12, 2018).

The parents were asked, "Have you observed any changes in your child's self-confidence or self-image since swimming began?" The parents responded that Case I is now excited and happy when he succeeds. His overall self-confidence and self-image have increased, especially when he learned that he could do something well. It took Case I a couple years to realize there is a relationship between his hard work and his success (Parents. Case I, personal communication, February 9, 2018). When the coaches began working with Case I they noticed he was timid and had a fear of the unknown. This fear made him unwilling to try new things in the pool. As time has passed Case I is almost always willing to try new things, unless he is having a bad day, in

which case he tends to progress backwards to his stubbornness. However, he is proud of his participation and success on the team. He also loves the muscles that swimming has helped him gain (Coaches, personal communication, February 12, 2018).

Case I also had comments to add. He believes swimming has helped him look better. He loves to show off his muscles. He also feels healthier since swimming began. Case I enjoys swimming. His favorite part about being on a team is to hang out with friends. He also enjoys when we practice diving off the block (Case I, personal communication, February 9, 2018).

Case I's parents believe the changes were the result of participation on a swim team. Case I has learned from the success he has had individually and being around peers on a regular basis. Participating on a swim team is an authentic opportunity to be in a social environment. His physicality, behavior, self-image, and socialization have all benefitted in positive ways since Case I began swimming. The pressure to achieve is not emphasized, but it is encouraged and appreciated. This helps give the swimmers a level of independence, such that the amount of success they have is up to them. Case I also has learned that everything does not need to involve mom and dad, they bring him and take him home, but during practice he is making his own choices (Parents. Case I, personal communication, February 9, 2018). The coaches have also noticed his maturity growth and blossoming personality. He is more social and aware of others. It is important to him to see his friends and have fun when he is at practice (Coaches, personal communication, February 12, 2018).

Case II

Case II began swimming at the age of 5 at a local summer program. He began swimming for the Summit Stars at 10 years old. The parents decided to have him participate in a team sport

mainly because his older siblings were on a swim team and he wanted to be like them. His whole family grew up swimming together, so he was comfortable in the water from a young age. The parents also believed that it would be good for his health, well-being, and social life to be around peers (Parents. Case II, personal communication, January 18, 2018).

Case II's parents were asked, "Before swimming did you have any concerns with the child's weight, energy levels, or muscle tone?". They did have weight concerns when he was a child. To help keep the weight under control the parents did not reward him with food. Instead they would reward him with activity such as going to ski or play tennis. With increased physical activity and limited sugar intake, Case II has generally been able to keep his weight under control. Today, Case II and his parents have an agreement that he is allowed to have one cup of soda a day as long as he keeps up his exercise. Keeping his weight under control was very important to the parents, they wanted to prevent him from falling into the stereotype of being overweight, as so many people with Down syndrome are. Case II has a thyroid disease, so he is on medication that affects his energy levels. Depending on the dose he may be very hyper, or he may be listless. He has the low muscle tone typical of people with Down syndrome. However, by swimming often he has been able to increase his muscle tone exponentially (Parents. Case II, personal communication, January 18, 2018). When Case II began swimming with the Summit Stars, his coaches noticed that he already had increased muscle tone and controlled weight because he had been swimming prior to joining this team. Since joining the Summit Stars, the coaches have noticed that when Case II goes through periods of less activity he will lose muscle tone and gain weight relatively quickly. However, he has been able to balance it out with periods

of high activity, regaining his muscle tone and lowering his weight. The coaches did not have any concerns about his energy levels (Coaches, personal communication, February 12, 2018).

When asked, “Before swimming, did you have any concerns regarding your child’s behavior?” the parents said “no”, because he began swimming at such a young age. However, they said that they have seen positive effects of swimming in his behavior as he has grown up. Swimming has engrained in him the understanding that if he works hard he will be able to succeed. He has seen his hard work in practice pay off when he wins a medal. Swimming also helped keep Case II even tempered and stable, so the expectation was that he would behave appropriately even if he did not want too (Parents. Case II, personal communication, January 18, 2018). The coaches said that Case II was unique in the sense of other opportunities that he participates in, such as snow skiing and karate. The coaches noted that when he began swimming with the Summit Stars he had an, “I’m going to win and it’s all about me” attitude, based on his higher swimming abilities and his unique experiences. As he has participated on the Summit Stars he has become more caring and compassionate to those around him on the team. He is also seen enjoying the moment and simply having fun (Coaches, personal communication, February 12, 2018).

The parents observed changes in Case II’s self-confidence and self-image since he began swimming on a team. He is more confident in his abilities. He had the opportunity to go to the Special Olympic World Games in China and that was a pivotal point for Case II. He came back and made the decision that he wanted to exercise and look good so he could be “fit for life” and he realized how important fitness is to him. Now he swims, golfs, skis, lifts weights, does karate and more to keep himself in shape (Parents. Case II, personal communication, January 18, 2018).

The coaches had similar observations. When Case II was in high school he was a member of his school's swim team. While this was beneficial socially and physically for him, he lost some of the feeling of success that Special Olympics had brought him. When he came back from the World Games he had a renewed sense of the faith and confidence he needed to show himself that he could succeed in the pool (Coaches, personal communication, February 12, 2018).

While being questioned directly, Case II stated that swimming has changed the way that he looks, feels, and behaves. Swimming keeps him in shape and "looking good". He feels good and believes that he is stronger and less tired because of swimming. He also said that he always behaves, even with the team does not. He enjoys swimming. He likes freestyle and breaststroke the most. He wants to become a coach. He likes to be a leader and give his teammates tips on swimming techniques. He wants the coaches to teach him how to be a good coach. His favorite part about being on a team is working hard and being a fast swimmer. He also likes being a role model and leader for his teammates (Case II, personal communication, January 18, 2018).

By being a member of a swim team, Case II has learned to respect others, be disciplined, and that hard work will pay off. He has been able to follow directions and live a more structured lifestyle. As he has aged he is not as serious compared to his competitive attitude in high school. This is a product of the team he is on, while the swimmers do work hard, there is a larger emphasis on having fun (Parents. Case II, personal communication, January 18, 2018). The coaches have noticed that the leadership side of Case II is growing. They believe he senses that he is older and more experienced. He wants to help his younger teammates learn and experience swimming to their fullest potential. He jumps at the chance to work with a teammate on stroke

technique. He is also looking to help coach outside of the pool periodically (Coaches, personal communication, February 12, 2018).

Discussion/Limitations - Bias

As indicated from the interviews, Case I and Case II benefitted greatly from participating on a swim team. They were able to keep their weight levels down, increase their muscle tone, and have a more positive self-perception. According to the Irish Nutrition and Dietetic Institution, “Excessive weight gain is a problem for many older children and adults with Down Syndrome” (“Down Syndrome and Nutrition”, 2015, para 8). By swimming on a regular basis, Case I and Case II were able to control their weight levels. “Down syndrome is usually identified at birth by the presence of certain physical traits: low muscle tone.” (“What is Down Syndrome?”, 2018, How is Down syndrome Diagnosed section, para 4). Case I and Case II increased their low muscle tone by swimming. Case I and Case II both saw an increase in positive behaviors throughout their time on a swim team. Case I is less noncompliant, more willing to try new things and more social. Case II has matured into a leader, he is willing and ready to help others whenever he has the opportunity. Case I and Case II both have a better work ethic and work hard each time they are in the pool. Swimming has helped Case I and Case II have self-confidence and a positive self-image. They are confident in themselves to try new strokes, drills, and dive techniques. This can be seen by their parents and coaches as well. Case I and Case II believe in themselves and it helps them succeed and be proud of their work in the pool. They both individually recognize their muscles and understand the link between swimming and “looking good” demonstrating their positive self-image. Swimming contributed to these changes by teaching each individual to link their hard work and their success. Case I and Case II

are then able to take their success and behaviors from the pool and apply these skills to everyday life. According to Nancy A. Murphy, Paul S. Carbone and the Council on Children with Disabilities, “The participation of children with disabilities in sports and recreational activities promotes inclusion, minimizes deconditioning, optimizes physical functioning, and enhances overall well-being.” (Murphy and Carbone, 2008, para 1).

Bias may have occurred during the data collection process. Both individuals that participated in the study are males, swimmers, and grew up in the Akron area. In addition, the interview questions were answered by people with close relationships with the individuals, their parents, coaches, and themselves. The parents support swimming on a team, or they would not have their child participate on a swim team. The coaches support swimming as well, or they would not take their time to teach others and be a part of the swim team atmosphere.

Based on the findings of this study, it appears that the two individuals, their parents and coaches believe that swimming has resulted in improvements across a number of important areas. Because there are only two individuals represented in this study, it may be beneficial to consider additional research so that the potential benefits of swimming for individuals with Down syndrome can be further investigated.

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