Rise to the Challenge: Examining the Relationship of Swimming & Autism Spectrum Disorders

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Abstract

This study examined the personal interactions and experiences of six Virginia-based YMCA Aquatics Directors and Instructors in regards to the instruction of individuals with an Autism Spectrum Disorder (ASD). Overall, the main purpose of this study was to offer more insight into the rising challenges faced within the area of adapted aquatics specifically in relation to persons who are impacted by an ASD. This purpose included a hope that by heightening awareness, more research would be done and individuals would be assisted with greater ease and readiness when it comes to acquiring swim skills with a disability. Findings included a general feeling from instructors that although each had some exposure and experience in regards to the instruction of individuals with an ASD, more support could be beneficial. The manuscript also noted that the area of aquatics is included in the definition of physical education in the special education legislation and thus more importance can be placed on these finding

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Defining the Issue

Before examining current research and issues which exist involving Autism Spectrum Disorders (ASDs), it is important to define what this disorder is and the possible impacts it could have on acquiring life-saving skills. Autism is a developmental disorder that is diagnosed with varying repercussions due to its range of severity since it is a spectrum disorder. Some of its neurological ramifications include an impact on "communication, social interaction and repetitive and stereotyped behavior" (Autism Advocacy Coalition of Virginia, 2009). The range of this spectrum covers a high-functioning extreme known as Asperger's Syndrome, the most frequently associated Autistic Disorder and, the rarer but typically less severe, Pervasive Personality Disorder – Not Otherwise Specified (Centers for Disease Control and Prevention, 2010). An individual diagnosed with one of these spectrum disorders will likely have difficulty interacting with others in a socially conventional way, but he or she will not necessarily have symptoms or reactions similar to others with the same diagnosis (Centers for Disease Control and Prevention, 2010). As a result, it can be difficult to anticipate the needs of a person with an ASD.

In addition to everyday activities and basic, functional, daily living skills, the ability to swim is an important one for individuals with an ASD to attain. According to the National Autism

Association, teaching individuals to swim is a serious need because "drowning is a leading cause of death for a child or adult who has autism." This can likely be attributed to the fact that people with an ASD tend to "wander from parents and care providers" and "are often attracted to water sources such as pools, ponds, and lakes" (National Autism Association, 2005). Thus, because of the risks involved in association with not knowing how to swim, it is vital for people who have an ASD to address this issue. It is especially important for this population, because of its rising number of diagnoses, to assess the value of learning this potentially life-saving skill of swimming. It should also be noted that the area of aquatics is included in the definition of physical education in the special education legislation and as such is guaranteed to the student receiving special education students as part of physical education if the student is anticipated to benefit (IDEA, 2004).

Examining the Numbers: Autism Spectrum Disorders

Recent years have brought more attention to this range of disorders and, as such, care is now being taken to look at the increase of numbers and assess the prevalence of ASD. One decade ago, in 2000, the Centers for Disease Control and Prevention (CDC) formulated a group entitled the Autism and Developmental Disabilities Monitoring (ADDM) Network in order to track and analyze the numbers of diagnoses in certain areas of the United States and the impacts of the individuals with an ASD in those particular regions (Rice, 2006). This is helping provide an assessment on a national scale regarding ASDs in the United States.

Specifically in Virginia, there are some startling statistics to consider. The Commonwealth Autism Services surmises from available data that because approximately one person out of 100 is diagnosed with Autism Spectrum Disorder, proportionally 75,000 Virginia residents could, in all probability, have this developmental disability to some degree (Commonwealth Autism Services, 2005). While this statistic is staggering, the possibility of it is a valid one to consider. According to the CDC, the current mean estimate is for one in 110 to be diagnosed with an ASD (Center for Disease Control and Prevention, 2010). This approximation is also stated by the Autism Speaks (2010) website. Another statistic mentioned by this site is the frequency of male diagnoses over females; it is approximated "that in the United States alone, one out of 70 boys is diagnosed with autism." It may be difficult to say definitively, but studies suggest that males are more prone to this disorder (Autism Speaks, 2010). While this is an important conjecture to note, it is inconclusive data and should be regarded accordingly.

Autism has exponentially increased in recent years in the state of Virginia causing concern both for those directly impacted by this diagnosis and those who are merely aware of the issue or peripherally involved. In fact, "the disease frequency of autism now surpasses that of all types of cancer combined" which indicates the serious nature of this prevalent diagnosis (Virginia Public Schools Autism Prevalence Report, 2004). In 1992, there were only 571 recorded cases of Autism Spectrum Disorder in individuals between the ages of three and twenty-two years old in the state of Virginia. This number steadily grew at a moderate rate until the year 2000 when it reached a total of 2,228 individuals who were diagnosed with some degree of autism. After that year, the rate has been significantly more prominent, reaching 6,394 by the year 2006 (Autism Advocacy Coalition of Virginia, 2009). The overall population in the state of Virginia was recorded by the United States Census Bureau in 2000 as 7,078,515. By 2006, the Census reported Virginia as having a population of 7,642,884 (U.S. Census Bureau, 2008). Thus, over the span of six years

while the total state population increased by approximately eight percent, the population of individuals with an ASD almost tripled.

Examining the Numbers: Drowning

Because water is not a natural environment in which humans dwell, it makes sense that people need to be taught how to survive in this medium. It should also be a logical conclusion for one to consider that younger children are often the ones who drown. According to national data from the CDC in 2005, children between the ages of one and 14 died from drowning as the second most frequent cause of accidental death (Centers for Disease Control and Prevention, 2008). The Virginia Department of Health fact sheet regarding drowning explains that this makes sense because of children's natural tendencies in water. Consider these reasons for the heightened risk:

> Several factors put young children at high risk for drowning. Young children are physically top-heavy, active, curious and impulsive. They are also too young to understand that pools and standing water can be dangerous. Children under the age of five years do not struggle in the water. They can drown without making a sound. (Virginia Department of Health: Injury & Topics, 2009)

What this does not account for is the fact that children can be *taught* how to respond in the water and preventing opportunities for children to be left unattended near a body of water is also imperative. Regardless, deaths due to drowning are clearly a concern for this age group. According to the Virginia Department of Health, "swimming pools" – which were the second-most common location for these accidental drownings – "had the highest drowning rates with the younger age ranges of 1-4 and 5-9 years old" (Virginia Department of Health: Medical Examiner, 2010). With this in mind, it is imperative that precautions be taken regarding water safety for young individuals.

During the time span of a decade, from 1997 until 2006, there were 973 reported accidental deaths due to drowning in the state of Virginia. This information, reported by Virginia's Department of Health, also notes that of those deaths 82 percent were males (Virginia Department of Health: Medical Examiner, 2010). While there is not more available information as to the circumstances of these accidents, it is still a significant percentage of male victims compared to the remaining 18 percent for the females. The Virginia Department of Health reports that in 2006 males were more than three times as likely to drown as females. This same year listed 110 accidental drownings (Virginia Department of Health: Injury & Topics, 2009). While this information is not causational, the gender correlation is significant nonetheless.

It should be noted that the data presented here suggests an increased male prevalence for both ASD diagnoses and drowning rates; this is not information that should be ignored.

Methods

Participants

This study incorporated criterion sampling which chooses cases meeting established criteria, such as Aquatics Directors and Instructors with experience in terms of instruction of aquatics for individuals with an ASD diagnosis. This method is very strong in quality assurance (Patton, 1990).

Six Virginia-based YMCA Aquatics Directors and Instructors provided the insight into their personal interactions and experiences with individuals who have an ASD.

Data Collection

The process for conducting this research began with the researcher developing a survey and then contacting the nine YMCAs in the Greater Richmond, Virginia Area to procure the survey data. Before immediately speaking with the Aquatics Directors of these facilities, the researcher contacted the overall facility director to inform them of the study and request.

Once acquiring verbal consent from the YMCAs, the researcher proceeded to email a link of an on-line survey (Appendix A: Survey). From that point onward, it was merely a matter of waiting for the responses before reading them and analyzing the data to share the insights which they offered.

Results

There were a variety of responses from YMCAs. There was one facility that did not have a pool and one that did not have a program for children with an ASD because there had been no expressed need. Aside from those, there was only one which the researcher had no success with messages being returned to receive permission to send the survey link. The remaining six YMCA Aquatics Directors and Instructors provided the following insight into their personal interactions and experiences with individuals who have an ASD.

The four responses to the first question regarding, overall, how many swimmers with an ASD had received lessons at the instructor's YMCA were somewhat mixed with one indicating that there were no swimmers with an ASD, another indicating only three, another citing ten within this past year alone, and finally an approximation of about 15 students over the course of an instructor's 40 years spent teaching.

Four of the six swim instructors indicated that they had taught between one and five students with an ASD in the past five years. The remaining two responders each took the extremes of the spectrum options with one who had not taught any students with an ASD and the other who had taught between six and ten.

Only one of the individuals who participated in the survey had any friends or family members with an ASD.

Several individuals listed a lack of availability or awareness of classes with information on ASD, while others had had some exposure through work in the public school or by gathering information through colleagues.

In order to shape swim lesson plans fitting for students with an ASD, the instructors listed a number of responses regarding what research has helped them. One mentioned that he/she "started working with this group of learners before there was any research to go by." All of the four detailed responses cited personal experiences and the importance of recognizing individual differences as factoring into how to handle each lesson. One instructor also pointed out the value of asking for input from the parents in order to benefit from their knowledge of their own child's weaknesses and strengths.

There was a range of responses in terms of the comfort level which the instructors felt while teaching lessons for individuals with an ASD. This was also true for their perceptions of how easily they felt they could adapt their lesson to meet the needs of their individual learners. None, however, considered themselves extremely uncomfortable or as having great difficulty with these two respective personal assessments.

When asked about the main goals of these swim lessons and the order of skills generally taught in these lessons, all of the five instructors who responded cited the comfort level of the student as being a main focus or factor in the learning process.

The penultimate survey question inquired about the tone of voice used to address students with an ASD. The notable repeat phrases among the responses were "energetic" and "short" or "simple" as far as the level of detail involved in the instructions.

Finally, the survey asked for the range of responses from students with an ASD to the general instructions from the teachers. Although there was a variety, most of the responses from students were reported as positive though perhaps slower at progressing than students without an ASD.

In summary, these responses offer some limited insights into the current standings of what services are in place for teaching individuals with ASDs how to swim. While most instructors had some exposure and experience, more support could be beneficial.

Discussion

An overall assessment of the meaning behind the results of the survey indicates some concerns for aquatic instructors regarding their students with ASDs. The fact that there is one facility without a program in place at all seems less than ideal, but perhaps there really is no need for a program in that area. It is more concerning, however, that there seems to be a general pattern of independent discovery of how to handle this specific population of students rather than a guided approach based on research and tested methods.

With the limited needs expressed by most of the responses, it may not be imperative for all aquatic instructors to be experts at teaching students with an ASD, but resources should certainly be available in case the opportunity presents itself and an instructor needs assistance with how to handle a lesson. Since the majority of the instructors who responded did not have personal

relatives or close friends with an ASD, nor were they aware of much available information regarding the disorder or how to help those impacted by it, it makes sense that more of them felt moderately uncomfortable or neutral teaching this group of students than extremely comfortable. It is, however, certainly a positive sign that most of them reflected a personal sense of flexibility and adaptability with the lesson plans when working with a child who has unique needs because of an ASD.

Shared personal experiences are clearly valuable to instructors. One individual responded that he or she had "gained valuable knowledge through colleagues" and was "able to apply" this information. Aside from acquiring firsthand experience oneself, it should be common sense that receiving information from someone else who has gone through certain circumstances will be more valuable than simply reading or hearing abstract ideas and concepts. This is not to say that research in the field of ASDs is not important for those who are teaching, but it would be more beneficial for them to understand what methods have been tried and been successful or not with people who struggle in different ways on the spectrum of autism with learning how to swim.

It could also be beneficial for more publicity to be produced for individuals who have an ASD, or for one of their caregivers, to learn that these lessons are available and important. The relatively low numbers reported from this survey indicate that either there are not many individuals in this area with a diagnosis or they are not receiving swim lessons from the YMCA – or possibly at all.

At this point it is felt important to reiterate the point that the area of aquatics is included in the definition of physical education in the special education legislation and thus more importance can be placed on these findings.

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