



The Effects of Scuba Diving on Occupational Performance in Individuals with Autism Spectrum Disorders

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Introduction

The purpose of the study was to determine how scuba diving affects individuals with Autism Spectrum Disorders (ASD), specifically their occupational performance and social participation. The perceived benefits of scuba diving from the perspectives of the individuals with ASD, their parents, and dive leaders were also included.

ASD is a neurobiological developmental disorder that impacts social interaction, sensory processing, language, and communication (Dubois, 2011). The limited research available on scuba diving and disabilities is mostly on individuals with physical disabilities, but none related to ASD. The researchers partnered with Diveheart Foundation, whose goal is to create opportunities for individuals of varying ages and disabilities to experience scuba diving as a therapeutic occupation. This study sought to examine individuals with ASD who participate in scuba diving through the Diveheart Foundation.

Methods

Ten participants with ASD, aged 11-28 years, their parents, and six dive leaders were recruited via electronic flyers, phone calls and email communication. Data were collected after approval by the Midwestern University Institutional Review Board. A qualitative interview approach was used to capture each participant’s experiences of scuba diving and to glean parents’ perspectives about their child’s participation in scuba diving. Each parent also completed the *Short Child Occupational Profile (SCOPE) Parent Report Form* to provide descriptive data about their child’s occupational performance. A focus group was held with the dive leaders about their experiences and perceptions of working with individuals with ASD scuba diving.

All interviews were transcribed verbatim to ensure accuracy. Each researcher reviewed each transcript independently to identify common words, phrases and themes, then they collectively ascertained salient themes. The themes were then compared within each group (participants, caregivers, and leaders), and across groups to identify overarching constructs.

Results from the SCOPE

Activity	Challenge	Strength	N/A
Showing enjoyment or happiness when playing or doing something he/she likes	1	7	2
Knowing what he/she likes; choosing a favorite toy, person, or activity	0	9	1
Continuing an activity even when it becomes difficult	8	2	0
Understanding and following routines	2	7	1
Doing things that are part of being a family member, friend or student	6	2	2
Using his/her voice or words to indicate wants and needs	1	9	0
Talking with friends, family and others to share thoughts or ideas	6	4	0
Interacting with others in an appropriate way	6	4	0
Choosing and using objects appropriately	1	9	0
Noticing and responding to things around him/her	1	7	2

Results: Themes

“Feeling better about myself and what I can do” – This theme was prominent in participant, parent, and dive leaders interviews. All participants expressed pleasure from scuba diving and a majority indicated they believed they were successful.

Participant: *“It just makes you feel good, like that I have done something new and I have tried something new and I liked it.”*

Parent: *“My son, in his day to day life, doesn’t smile like he does when he gets out of the water.”*

“(It’s good) to finally find something that you’re good at that other kids can’t even do, it’s a big deal.”

Leader: *“Within his universe now, he’s a Rock Star - he’s a diver. He can do anything now in his mind because he can dive. Wow! What else can I do? He starts thinking that way and that’s really what this is – a tool to help people imagine the possibilities in their lives...”*

Finding Sensory Freedom in the Water – Participants discussed the intensity of sensory experience when in the water, especially how being underwater felt. Parents noted observable changes in the participants during and after a scuba diving sessions.

Participant: *“When I’m under the water I get to. . . It’s just quiet down there and you actually get to think to yourself, you know?”*

Parent: *“.....the first few times were the most profound and its almost that calming effect that he gets out of it . . . It’s probably the most powerful therapy he has ever had. It’s certainly surpassed all the different types of sensory therapy that we have tried. You can’t even compare the two; this was far more productive than any of those.”*

Social Participation – Participants, parents, and Diveheart leaders identified scuba diving as a facilitator for social participation. Diving in groups, having friends within the Diveheart organization and positive interactions with dive leaders were some of the key social features identified by participants.

Parent: *“Diving is kind of an unusual sport.....and my son would be telling other people about it. So it’s this thing that they can talk about that they know something different than other people outside of the dive community, um, that gives them a sense of identity.”*

Leader: *“They start out very tunnel vision, not talking to anyone else or anything else like that. . . slowly but surely they moved to being social butterflies.”*

Not Defined by Disability, or “Everybody is Equal Underwater” - The meaning of scuba diving is not just a “leisure” or “skill-building activity”. While scuba diving does not, in and of itself, generalize to other occupations, each participant’s identity was redefined in new ways through this occupation. This theme was prominent among participants, parents, and Diveheart leaders.

Participant: *“it gives me a chance to do something I have never dreamed because of my disability. You can do something with others that are not disabled.”*

Parent: *“they are so much more capable of doing so many things, but so many times they are never given the opportunity or given the chance...”*

Another parent described scuba diving as a unique experience that “set him (her child) apart in a very unique way that is not defined by his disability”

Leader: *“It’s amazing in 15, 20 minutes we can have somebody using the ability they do have to move through the water independently . . . and it’s powerful.”*

“Everybody can be themselves and whatever disability they have is no longer significant when they are at the pool – it’s the same thing.”



Implications for OT

Scuba diving can promote performance and participation as an occupation-based intervention for individuals with ASD. Occupational therapists should be involved in the development of these scuba diving programs in order to ensure the their therapeutic value.

References

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