

SCUBA Diving for Individuals with Physical Disabilities

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Years Included: 1996–2007

Databases: Academic Search Premier, CINAHL, Medline, PubMed, SPORTDiscus

Articles found/used: 28/6

Summary of Research Findings

Self-Contained Underwater Breathing Apparatus (SCUBA) diving is an increasingly popular recreational activity in the general population, and also for individuals with physical disabilities. Yet little has been researched related to SCUBA as a leisure activity, particularly in regards to the experience and involvement of individuals with physical disabilities. Therefore, this literature review involved six articles that covered a variety of topics including motivation for participation (Yarwasky & Furst, 1996), safety considerations and medical issues (Almeida, Bell & Sander, 2007; Cheng & Diamond, 2005; Schved, DeHaro, Drapeau & Schved, 2012), possible adaptations (Cheng & Diamond, 2005), social and psychological benefits (Carin-Levy & Jones, 2007) and the role of comfort in diving (Dimmock, 2009).

In these articles, SCUBA was discussed as it relates to individuals with diverse disabilities and health conditions including epilepsy (Almeida, Bell, & Sander, 2007), paraplegia/paraparesis (Cheng & Diamond, 2005; Yarwasky & Furst, 1996), quadriplegia (Yarwasky & Furst, 1996), hemophilia (Schved et al., 2011), cerebral palsy (Yarwasky & Furst, 1996), amputations (Yarwasky & Furst, 1996) and unspecified physical disabilities (Carin-Levy & Jones, 2007). Two of the articles were critical reviews (Almeida, Bell, & Sander, 2007; Cheng & Diamond, 2005), while the others were studies that utilized both qualitative (Carin-Levy & Jones, 2007; Dimmock, 2009) and quantitative (Schved et al., 2012; Yarwasky & Furst, 1996) methods.

Divers with disabilities indicated they were motivated to participate in SCUBA primarily for fun, but also for the emotional responses they received from participating (Yarwasky & Furst, 1996). Also, while it is often assumed that individuals are attracted to SCUBA based on the elements of risk and adventure, Dimmock (2009) concluded that divers experienced comfort during diving in four contexts, including: physical, social, psychological and visual.

Risks, medical issues and safety considerations vary greatly based on the individual's condition and/or disability (Almeida et al., 2007; Cheng & Diamond, 2005; Schved et al., 2012). As a result, participants should seek physician clearance/approval and be made aware of risk factors (Schved et al., 2012) and possible adaptations (Cheng & Diamond, 2005) so they can make informed decisions about participation (Almeida, Bell, & Sander, 2007). This is important, since Carin-Levy & Jones (2007) documented that SCUBA can contribute to enhanced self-concept, enhanced social experiences, feelings of freedom from impairment and optimal experiences for individuals with physical disabilities.

Knowledge Translation Plan

Recreation Therapists working with individuals with physical disabilities may have clients who indicate interest in scuba diving for a variety of reasons. Motivating factors might include adventure, underwater leisure experiences, social interaction, inclusion, leisure skill development, education and emotional rewards. Historically, many physical disabilities have been viewed as contraindications to SCUBA diving. However, current research indicates SCUBA is possible for many individuals with disabilities when they discuss safety and medical considerations with their health care team. Each client's medical situation should be considered individually, but therapists should be aware that the following conditions warrant heightened attention: people with hemophilia or on anticoagulants, individuals with epilepsy or at risk for seizures, those with decreased cardiovascular functioning, individuals with hemiplegia/paraplegia/quadriplegia, amputees and persons with latex allergies.

Persons with physical disabilities interested in SCUBA should consult with their physician and receive medical clearance as well as an overview of potential benefits and risks in diving. This is essential so the individual can make an informed decision regarding participation. Baseline functions should be evaluated so that monitoring, if necessary, can be done during diving trips. For people with disabilities, symptoms of decompression sickness often appear similar to neurological impairments, therefore it is important to closely monitor baseline functioning in persons with neurological impairments (Cheng & Diamond, 2005). A safe, accessible diving location is important for individuals with physical disabilities, and evaluating transportation and qualifications of a Professional Association of Diving Instructors (PADI) instructor should also be part of the planning and decision making process.

Diving partners are an essential component of the diving experience, so partners should receive appropriate education and training so they are knowledgeable about their partner's disability, are able to identify an emergency situation, and can properly assist if needed. Diving partners may also be able to monitor any changes to baseline functioning. Recreation Therapists can play a critical role in evaluating clients for any adaptive equipment that would be helpful for divers with disabilities, such as webbed gloves and

prosthetic flippers that enable divers to increase their physical independence and ease cardiovascular stress (Cheng & Diamond, 2005).

Despite potential risks, the benefits of SCUBA diving for individuals with physical disabilities are well documented in the literature. Individuals with disabilities have reported that SCUBA diving has enabled them to feel weightless in the water as it allows them to abandon their wheelchair and feel equal to others (Carin-Levy & Jones, 2007). Divers with disabilities have also reported enhancement of social experiences, improved self-concept, and the fun in performing a new task (Carin-Levy & Jones, 2007; Yarwasky & Furst, 1996). Since SCUBA diving can contribute to improved quality of life for individuals with disabilities (Carin-Levy & Jones, 2007), Recreation Therapists should consider ways they can support clients with physical disabilities who may be interested in this leisure experience.

References

- Almeida, M., Bell, G., & Sander, J. (2007). Epilepsy and recreational scuba diving: an absolute contraindication or can there be exceptions? A call for discussion. *Epilepsia*, 48(5), 851-858.
- Carin-Levy, G., & Jones, D. (2007). Psychosocial aspects of scuba diving for people with physical disabilities: an occupational science perspective. *Canadian Journal of Occupational Therapy*, 74(1), 6-14.
- Cheng, J., & Diamond, M. (2005). SCUBA diving for individuals with disabilities. *American Journal of Physical Medicine & Rehabilitation/Association of Academic Physiatrists*, 84(5), 369-375.
- Dimmock, K. (2009). Finding comfort in adventure: experiences of recreational SCUBA divers. *Leisure Studies*, 28(3), 279-295.
- Schved, J., De Haro, M., Drapeau, M., & Schved, M. (2012). Scuba diving is possible and safe for patients with haemophilia. *Haemophilia: The Official Journal of the World Federation of Haemophilia*, 18(1), 75-79.
- Yarwasky, L., & Furst, D. M. (1996). Motivation to participate of divers with and without disabilities. *Perceptual & Motor Skills*, 82(3), 1096-1098.

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