

Examining Scuba Diving as Recreational Therapy: A Case Study

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Abstract

This case study explores the therapeutic potential of recreational scuba diving for individuals with disabilities, specifically looking at the lived experiences of a 78-year-old male with a spinal cord injury resulting in paraplegia. Through qualitative methods, including narrative and thematic analysis, this study examines the participant's engagement with adaptive scuba as well as other adapted sports offered by the Patricia Neal Innovative Recreation Cooperative (IRC). Key themes that emerged from the data include physical and emotional freedom, social connection, identity reconstruction, and emotional growth. The participant described scuba diving as a uniquely liberating experience that facilitated a sense of weightlessness, increased mobility, and a reconnection to pre-injury interests. Furthermore, the social aspect of diving- particularly intergenerational interactions with student divers- enhanced his sense of community and belonging. These findings support the integration of scuba diving into recreational therapy programs, highlighting its potential to address physical, psychological, and social goals. The study offers valuable implications for recreational therapists seeking to broaden their interventions with evidence-based, engaging modalities that promote resilience, empowerment, and quality of life.

Table of Contents

CHAPTER 1	1
INTRODUCTION AND GENERAL INFORMATION	1
<i>Introduction</i>	<i>1</i>
<i>Historical Background of Recreational Therapy</i>	<i>1</i>
<i>Problem Statement</i>	<i>3</i>
<i>Purpose</i>	<i>3</i>
<i>Significance</i>	<i>3</i>
<i>Research Question</i>	<i>4</i>
CHAPTER 2	5
LITERATURE REVIEW	5
<i>Adaptive Sports</i>	<i>5</i>
<i>Scuba Diving History</i>	<i>5</i>
<i>Benefits of Scuba Diving</i>	<i>7</i>
<i>Impacts of Scuba Diving on Mental Health</i>	<i>8</i>
<i>Impacts of Scuba Diving on Physical Well-Being</i>	<i>9</i>
<i>Scuba Diving for Individuals with Disabilities</i>	<i>10</i>
<i>Barriers to Participation</i>	<i>11</i>
<i>Evidence-Based Practice in RT</i>	<i>12</i>
CHAPTER 3	15
<i>Methodology</i>	<i>15</i>
<i>Ethical Considerations</i>	<i>16</i>
CHAPTER 4	18
<i>Case Presentation</i>	<i>18</i>

<i>Thematic Analysis</i>	19
<i>CHAPTER 5</i>	22
<i>Implications for Practice</i>	22
<i>Recommendations for Program Development</i>	22
<i>Suggestions for Future Research</i>	24
<i>REFERENCES</i>	26
<i>VITA</i>	31

CHAPTER 1

INTRODUCTION AND GENERAL INFORMATION

Introduction

Recreational therapists utilize various facilitation techniques and evidence-based practices to “address the assessed needs of individuals with illnesses and/or disabling conditions, as a means to psychological and physical health, recovery and well-being” (NCTRC, 2024). Recreational therapists work with diverse populations in clinical and community settings using activity-based interventions such as adaptive sports and aquatic therapy. Recreational therapists often work with individuals with disabilities, so it is important to understand disability. For this research project, the social model is the lens through which disability is considered. The social model “explains the characteristic features of disability in terms of a relation between an individual and his/her social environment” meaning that “it is society which disables physically impaired people” (Wasserman, 2023). Adaptive sports are designed to reduce or eliminate these restrictions for individuals with disabilities. Scuba diving is underwater diving where divers use a Self-Contained Underwater Breathing Apparatus (SCUBA gear) to breathe. There is research suggesting that scuba diving can yield significant benefits for one’s mental and physical health (Carrêno et al., 2020). Despite this, only a small percentage of the population has ever been scuba diving (Denny, 2024).

Historical Background of Recreational Therapy

Recreational therapy has evolved significantly over the last hundred years, transforming from informal leisure programs into a structured, evidence-informed profession focused on enhancing health and well-being. The start of recreational therapy can be traced back to post-World War I and II, when injured soldiers in Veterans Affairs (VA) hospitals began participating

in recreational activities as part of the rehabilitation process. These early programs showed that leisure could do more than entertain — it could help people recover physically and emotionally. That realization sparked interest in making recreation a more intentional part of healthcare.

In the 1950s and 60s, recreational therapy began gaining momentum. Practitioners began connecting leisure-based activities with therapeutic goals. This also led to the establishment of professional associations and the development of academic training programs. During this time, formal training programs began to appear, and eventually, the National Therapeutic Recreation Society (NTRS) was established in 1966 (Mansfield, 2025).

Then, in 1981, the National Council for Therapeutic Recreation Certification (NCTRC) was created (Mansfield, 2025). This marked a shift toward professional certifications, ensuring that practitioners meet defined competencies in treatment planning, facilitation, and evaluation. Today, recreational therapists work across a wide range of settings including hospitals, rehabilitation centers, community agencies, nonprofit organizations, long-term care facilities, and more. They use individualized, activity-based interventions to support recovery and promote physical, emotional, cognitive, and social functioning.

The evolution of recreational therapy reflects a broader shift in healthcare toward holistic and person-centered care. Recreational therapists have responded by seeking out new, engaging methods that speak to the individual needs and interests of their clients. One of those newer methods is adaptive scuba diving — an activity that combines physical challenge, relaxation, and social connection in a way that's uniquely therapeutic for many individuals, especially those with disabilities.

Problem Statement

Recreational therapists are constantly looking for new and interesting activities to engage their clients and encourage them to pursue various recreation and leisure pursuits. Although scuba diving has the potential to offer numerous benefits for individuals with disabilities, it is not widely used as a form of recreational therapy. This study is designed to show that individuals with disabilities can participate in scuba diving and that it is a great experience that can provide mental, physical, and social benefits.

Purpose

The purpose of this case study is to gain a deep insight into the impact that scuba diving can have as recreational therapy for an individual with a disability. From this insight, we want to demonstrate the real-world implications of the benefits of scuba diving as a recreational therapy modality that should be utilized by recreational therapists as a valuable experience for individuals with disabilities.

Significance

The field of recreational therapy is constantly growing and shifting to incorporate new and unique activities that may yield benefits for the participants. Scuba diving is an activity that less than 1% of the population in the United States have participated in, meaning that, for most, it offers a very new and interesting opportunity (Kieran, 2023). As such, it could be a great way to get individuals with disabilities motivated and excited to participate in recreational therapy. In addition to novelty that may increase motivation, scuba diving has the potential to offer a wide array of benefits ranging from physical to psychological and even social (Gunter et al., 2023).

Research Question

RQ1: Does participating in recreational scuba diving yield therapeutic benefits for individuals with disabilities?

CHAPTER 2

LITERATURE REVIEW

Adaptive Sports

Getting active is one of the best tools that human beings have to stay healthy, but this is often a difficult task, especially for individuals with disabilities. Adults with disabilities are at a high risk for physical inactivity as “only 53% report engaging in at least one 10-minute bout of aerobic physical activity in a week compared with 74% of nondisabled adults” (Lape et al., 2018). This is why adaptive sports are so important because they give people with disabilities that opportunity as well as the means to participate in physical activity.

In addition to the physical health benefits, there are many psychological, emotional, and social benefits to participating in adaptive sports. Some adaptive athletes describe participating in adaptive sports as being in a setting where athletes are “transcending disability identity as they demonstrate mastery and self-efficacy to themselves and others” (Lape et al., 2018). Some more mental benefits that are often seen as a result of participation in adaptive sports are “reducing stress and anxiety levels” and “promoting social and family relationships” (Isidoro-Cabañas et al., 2023).

Scuba Diving History

Throughout history, there have been records of people holding their breath to dive under the water to hunt and fish or to explore. Ancient Greek and Roman swimmers used hollowed out plant reeds as snorkels to breathe underwater (ScubaPro, 2024). From there, diving progressed from snorkeling and free-diving to the use of diving bells, diving suits, and surface-supplied air. In 1942, the modern technology that is now used for scuba diving was invented by English engineer Emile Gagnan and French navy officer Jacques Cousteau. Together they developed an

autonomous diving suit and regulator system (History of Scuba Diving, 2017). Following the development of this technology, the United States Navy began training its men using scuba gear for both combat and sabotage operations (ScubaPro, 2024).

In the early days of scuba diving, instructors were experienced divers who would teach their knowledge from experience to others. This training often involved lots of physical training and underwater pool skills, but no actual open water training. While this training was rudimentary, it was an important recognition that training was required to dive safely (History of Scuba Diving, 2017). The need for training led to the development of the first scuba diving certifications. Certifications range from basic open water scuba diver, which means an individual can participate in scuba diving without requiring the supervision of a professional, up to a professional instructor who is able to supervise uncertified divers and teach classes to allow individuals to get certified. Certifications started as credentials issued by stores, but as divers began traveling more, there was a greater need for certifications with broader recognition. In Los Angeles County, the National Association of Underwater Instructors (NAUI) emerged as the first national certifying agency in the United States. Shortly after, it became an internationally recognized agency (History of Scuba Diving, 2017). Around this time, perception of scuba diving shifted. Scuba diving had originally been viewed as an activity that only the elites could do, but as the industry grew and diving was seen more in media, people began to see it as a hobby anybody can participate in (History of Scuba Diving, 2017). Multiple certifying agencies now offer numerous certifications that can be recognized worldwide.

As technology improved and became user friendly, scuba diving gained popularity. In 1958, the first dive shop opened in Hawaii, marking a shift towards the growing industry of recreational scuba diving and scuba diving tourism (ScubaPro, 2024). As a tourist endeavor,

scuba diving is one of the fastest growing industries in the world (Dai et al., 2021). Despite its growth in popularity as a recreational activity, it is still very novel for most people. In 2022, less than 1% of the United States population went scuba diving at least 1 time (Kieran, 2023). Scuba diving is a new and interesting experience for most people and, therefore, could make for an excellent recreational therapy activity.

Benefits of Scuba Diving

Around the world, scuba diving is quickly growing in popularity as a leisure opportunity, especially for people to participate in while traveling (Kieran, 2023). As scuba diving grows in popularity, some universities, such as the University of Tennessee, Knoxville, offer scuba diving classes for the students. At UTK, students can take a class for beginner open water, rescue diver, advanced open water, master diver, and even Divemaster. At the end of each class, students have the opportunity to check out and get the various certifications. As of Fall of 2024, if a student takes all of these classes, they are then eligible for a scuba diving minor to be added to their degree.

Scuba diving is a unique and interesting leisure activity for anybody who can pass a rudimentary swim test as well as a medical screening. Scuba diving offers participants the unparalleled experience of adventure and excitement as divers venture into the underwater world (Gregory & Dimmock, 2019). Because of this, scuba diving could make for an excellent therapeutic recreation activity as the adventure aspect can help keep participants interested and motivated. While scuba diving is an exciting and adventurous leisure activity, it can also yield the possibility of relaxation and tranquility for many divers (Fuchs et al., 2016). When one is scuba diving, you are immersed completely underwater which allows for a sort of sensory experience that you cannot get anywhere else. The only sound is generally that of your own

breathing. This allows people to focus on taking constant, steady breaths to relax their whole body in a sort of meditative state (Beneton et al., 2017).

Impacts of Scuba Diving on Mental Health

Scuba diving may offer adventure and relaxation for anyone, but it can also have distinct positive impacts on one's mental health (Carreño et al., 2020). For example, participation in scuba diving activities has shown to improve self-perception as well as lower levels of depression, particularly among participants with disabilities (Henrykowska et al., 2021). Participation in scuba diving activities also has the potential to reduce stress and anxiety, improve mood, and promote relaxation as well as offer a sense of freedom that can be difficult to achieve on land (Gunter et al., 2023). Scuba diving can allow participants to experience feelings of excitement, joy, and euphoria among other positive emotions (Perez et al., 2023). Participation in scuba diving has also improved focus and concentration while decreasing stress and anxiety (Krpalek et al., 2020).

Many divers report feeling a sense of calm after diving that they did not have before (Krpalek et al., 2020). Participating in scuba diving can have such strong calming effects that “even thinking back to the dive” can be calming (Krpalek et al., 2020). Some report that participating in scuba diving regularly allows them to emotionally regulate and be more connected on a daily basis (Krpalek et al., 2020). Due to the focused, methodical breathing that is associated with scuba diving, many participants experience increased heart rate variability as well as lowered levels of stress (Beneton et al., 2017). Bringing focus to one's breathing allows people to enter an almost meditative state while scuba diving which may lower stress (Beneton et al., 2017).

Being in a *bluespace* can contribute to an increase in these positive psychological effects. A bluespace is a space “dominated by a watery element” (Geary et al., 2023). Bluespaces can “have restorative qualities which have aspects of soft fascination” (Walker & Kampman, 2022). Individuals may also be able to reconnect with their natural environment while scuba diving which can allow them to focus better and have increased feelings of competence and well-being (Carin-Levy & Jones, 2007). The focus experienced while diving can also allow divers to separate from themselves and truly enter a state of flow which is a phenomenon where an individual “becomes so engrossed in the activity that nothing else seems to matter, as the person’s attention is entirely devoted to the engagement in the activity” (Carin-Levy & Jones, 2007). Being in a state of flow is beneficial for divers because it involves a significant reduction in anxiety (Carin-Levy & Jones, 2007).

Impacts of Scuba Diving on Physical Well-Being

In addition to the mental health benefits that one may get from participating in scuba diving, there are also various positive impacts on one’s physical well-being. One of the biggest factors that contributes to an increase in one’s physical well-being related to scuba diving is physical comfort in the water. The unique sensation of weightlessness experienced underwater allows individuals to have overall comfort in the water (Dimmock, 2009). By finding this physical comfort in the water, individuals can have increased muscle relaxation. Feeling weightless and relaxed underwater can significantly reduce joint pain for individuals while scuba diving (Krpalek et al., 2020). Scuba diving is a physically exerting activity that can improve cardiovascular fitness, respiratory fitness, and muscular strength and flexibility (Gunter et al., 2023). Scuba diving can also lead to increased circulation and range of motion which can be

particularly beneficial for someone who may have suffered an injury or have some physical disability (Gunter et al., 2023).

Scuba Diving for Individuals with Disabilities

This case study focuses specifically on an individual who has a physical disability, and therefore it is crucial to look at how scuba diving can be beneficial for individuals with disabilities. One aspect of scuba diving that makes it a particularly appealing therapeutic outlet for individuals with disabilities is the freedom that it offers. In one study, individuals with a physical disability “expressed their perception of being free from their impairment” (Carin-Levy & Jones, 2007). Being underwater allows individuals to experience buoyancy and weightlessness, contributing to this freeing feeling. This freedom also allows people with disabilities to experience a sense of equality while underwater.

In addition to the physical feelings of freedom, individuals with disabilities have also reported experiencing mental freedom associated with scuba diving (Perez et al., 2023). Scuba diving as an experience has the potential to elicit positive emotions from the participants. In a study, individuals with disabilities agreed unanimously that scuba diving allowed them to feel “joy/happiness, excitement/fun, and euphoria” (Perez et al., 2023). Furthermore, individuals also “expressed that scuba diving has had an influence on their self-awareness and/or personal growth, particularly in the areas of overcoming challenges and fears, and gaining self-confidence” (Perez et al., 2023). Breathing underwater is inherently unnatural for humans, so trying scuba diving can be a daunting and fearful experience for many people. Being able to overcome this fear and learn a new skill leads to increases in self-confidence. The experience of scuba diving also has the potential to increase an individual’s quality of life with regards to mental health and social performance (Henrykowska et al, 2022).

Another crucial aspect of recreational therapy for people with a disability is social encounters. Scuba diving offers a unique opportunity for social connection. Individuals who have participated in adapted scuba reported that they “met many new friends and were able to interact with other divers, both able-bodied and disabled” (Carin-Levy & Jones, 2007). As a buddy sport, scuba diving is social by nature. When you get people involved in scuba diving, they will have no choice but to interact with others (i.e. instructors, their buddy, etc.). Participants have reported gaining “the opportunity to relate to others and build relationships” from scuba diving (Perez et al., 2023). There is a deep level of trust that is required between new divers and their instructors as well as between dive buddies. It is possible that experiencing these connections through scuba diving may translate into an individual’s personal life as well.

Barriers to Participation

When thinking about new modalities for recreational therapy, it is important to consider the barriers that various populations may face that hinder their participation. When it comes to scuba diving specifically, there are many barriers that individuals may face. The first of these barriers would be cost. Participating in scuba diving is an expensive leisure pursuit as you must factor in the cost of equipment, trained professionals, and the physical setting. With renting the equipment needed for a diver in addition to having certified Instructors as well as reserving a pool or space to dive in, the cost adds up quick. Another barrier individuals may face is access. Especially for adaptive divers, it can be challenging to find dive shops and dive professionals who are willing and able to work with them. Additionally, not everyone lives near dive shops or places where rental equipment would be readily available which can make it more difficult to participate.

In addition to these cost and equipment related barriers, many individuals report medical concerns to be a barrier preventing them from participating in adaptive sports (Kim et al., 2024). This can also be true for individuals wishing to participate in adaptive scuba diving because there are some absolute contraindicators that disqualify people from participating in scuba diving. According to the Diver's Alert Network (DAN), some of these contraindications can include seizures, congestive heart failure, COPD, unrepaired hernias, and sickle cell disease among others (Diver's Alert Network, 2021). It is critical that anybody who wants to participate in scuba diving honestly answers a medical questionnaire and gets approval from their physician if necessary.

Evidence-Based Practice in RT

Evidence-based practice is a cornerstone of modern recreational therapy. Evidence-based practice is “applying research to assist in the selection of interventions that result in increased client quality care” (Klitzing, 2011). It involves integrating the best available research with clinical expertise along with the values and preferences of your client to guide treatment decisions. The National Council for Therapeutic Recreation Certification (NCTRC) emphasizes the importance of using evidence-informed interventions to ensure that services are effective, measurable, and aligned with client goals. This approach helps recreational therapists facilitate interventions that are not only meaningful but also are proven to support recovery and improve quality of life for the clients.

In recreational therapy, evidence-based practice typically includes structured interventions with documented outcomes in at least one of the five domains: mental, physical, emotional, social, or spiritual. Modalities such as aquatic therapy, adaptive sports, and mindfulness-based activities are widely supported by research and commonly incorporated into

treatment plans. As the field continues to grow, recreational therapists continue to explore new interventions- like adaptive scuba diving- through the lens of evidence-based practice.

While it is still emerging in the research literature, scuba diving demonstrates considerable alignment with the principles of evidence-based practice in recreational therapy. A growing body of research supports scuba diving's possible impact on stress reduction, mood enhancement, emotional regulation, and physical rehabilitation- particularly for individuals with disabilities. For example, research by Beneton et al. (2017) and Krpalek et al. (2020) indicates that the slow, rhythmic breathing required during diving can induce a meditative state, reduce anxiety, and increase heart rate variability, a marker of relaxation and resilience. Additionally, studies such as Perez et al. (2023) highlight the psychosocial benefits of adaptive scuba, including increased self-confidence, social connection, and a sense of freedom. Scuba diving also supports physical health outcomes relevant to rehabilitation goals. The buoyancy experienced in water reduces joint strain and allows for low-impact movement, which can enhance range of motion and muscular engagement without placing excessive pressure on the body- important factors to consider when working with individuals with injuries or mobility limitations (Gunter et al., 2023).

Because scuba diving has the potential to yield both evidence-supported physical, mental, and social benefits and can be adapted for various ability levels, it is a promising therapeutic modality that fits well within the evidence-based practice framework used by recreational therapists. To meet the standard of evidence-based practice, recreational therapists must ensure that scuba diving interventions are implemented and supervised by qualified professionals, follow safety protocols, and include measurable goals and outcomes aligned with individual client needs.

By grounding adaptive scuba diving in research, client-centered goals, and clinical expertise, recreational therapists can responsibly and effectively integrate this unique activity into their treatment programs- offering clients a powerful tool for growth, healing, and empowerment.

CHAPTER 3

METHODOLOGY

For this study analyzing scuba diving as a recreational therapy modality, a single case study format was used. This approach allows for a detailed examination of the participant's experiences with scuba diving and other adapted sports through the lens of recreational therapy. Case studies are effective for illustrating the real-world experiences of participants. Because scuba diving has been underexplored in this context, a case study provides meaningful qualitative insight into its potential benefit. To protect the participant's identity, a pseudonym is used throughout this study. The participant will be referred to as "Frank". The participant, Frank, who has participated in the adaptive scuba diving program at UT numerous times, was interviewed and asked about his experience with adaptive sports and scuba diving since his injury.

Following the interview, a qualitative, inductive thematic analysis based on Braun and Clarke's (2006) six-phase framework was employed to explore the lived experiences of the participant. Data were collected through a semi-structured interview conducted via Zoom, recorded and transcribed verbatim. The interview focused on the participant's background, scuba diving history, and perceptions of psychological, physical, and social impacts associated with adaptive scuba diving.

Familiarization with the data began with multiple readings of the transcript, followed by initial open coding to identify significant statements and recurring ideas. Codes were developed inductively, meaning they were derived directly from the data rather than based in pre-existing theories. Codes were then grouped into preliminary themes based on shared meaning and

relevance to the study. These themes were then reviewed and refined to ensure internal coherence and distinctiveness.

Themes were supported with illustrative quotes from the participant and cross-referenced with the relevant literature to deepen interpretation. No software was used; instead, manual coding was performed to maintain immersion in the data and allow for a more nuanced, context-driven understanding of the participant's narrative.

To address potential researcher bias, deliberate steps were taken to ensure the analysis remained grounded in the participant's voice and experience. The researcher, a certified Divemaster and graduate student in therapeutic recreation, acknowledged their professional and personal familiarity with scuba diving. To minimize bias, the analysis was conducted inductively, allowing themes to emerge directly from the data. Multiple readings of the transcript and close attention to the participant's language helped ensure objectivity. Interpretations were supported with direct quotes and were intentionally distinguished from the researcher's own assumptions, enhancing the credibility and trustworthiness of the findings.

Ethical Considerations

If it is not done properly, scuba diving can be a dangerous endeavor. Because of this, it is crucial as a recreational therapist to have a proper risk management plan in place. This would involve having an informed consent as well as a medical screening for each participant prior to scuba diving. It is important that participants understand the risks associated with scuba diving so that they know how important it is to follow the rules and directions. The main risks associated with scuba diving are ear, sinus, or pulmonary barotrauma, arterial gas embolism, decompression sickness, immersion pulmonary edema, nitrogen narcosis, and oxygen toxicity. Despite these risks, scuba diving can be a safe activity if the proper precautions are taken. This is

why it is very important to have professional scuba Instructors and Divemasters who know how to keep participants safe. In order to keep participants free from harm, there should be a safety briefing given by an instructor so that everyone knows the essential rules of scuba diving. Some of these critical rules are to never hold your breath, always ascend very slowly, and pay attention to your air gauge. If you are breathing compressed air and hold your breath, you can experience an overexpansion injury or a barotrauma in as little as 4 feet of water (Nord, 2021). While that may sound scary, your risk of experiencing a barotrauma is drastically decreased by following the simple rules listed above. Especially when working with inexperienced divers, instructors and divemasters ensure everyone abides by the rules and remains safe. One instructor can supervise up to 10 uncertified divers in confined water such as a pool (NAUI, 2025). This number increases with additional instructors and divemasters. When organizing or implementing an adaptive scuba diving event, it is important to consider the ability levels of participants to know if they may need more individualized supervision such as having extra instructors and divemasters or having adaptive dive buddies available to work 1 on 1 with participants.

CHAPTER 4

CASE PRESENTATION

This case study is focusing on a single individual's experiences with scuba diving both pre and post injury. Frank is a 78-year-old male who sustained a spinal cord injury causing him to be entirely paralyzed from the waist down. Before his injury, Frank was in the Navy and had desired to get scuba certified. In about 1996 Frank was able to get both his Open Water as well as Advanced Open Water scuba certifications and participated in some open water scuba diving in a spring in Florida. Frank said that he has "always loved being in the water and under water" which is why he was originally drawn to scuba diving.

Approximately 23 years ago, Frank was hang-gliding at Lookout Mountain flight park when he was in an accident that left him paralyzed from the waist down. At the time of the crash, he broke some ribs and damaged T-7 and T-12 in his back. As a result, Frank had surgery to fuse T-11 and T-12 as well as get a titanium ladder in his back. From then, he has had "no feeling and no voluntary movement" from the waist down. After this injury, Frank began recovery with the Patricia Neal Rehab Facility in Knoxville, Tennessee. This is where his journey with adapted sports and adapted scuba began.

Frank was introduced to the world of adaptive sports through Patricia Neal's Innovative Recreation Cooperative (IRC). The IRC hosts a variety of adapted sporting activities throughout the year for individuals with disabilities. The program was designed as a way "to teach leisure skills to enhance quality of life in a safe environment and awareness to heighten the understanding of disabilities in the community" (Covenant Health, 2025). Since the start of his participation with the IRC, Frank has participated in a variety of adapted activities such as shooting "skeet or sports clays", "archery... sled hockey, golf" just to name a few. He also went

with the IRC to Wilson College in North Carolina “where they have a 65-foot wooden tower” that they use “for confidence building for people with disabilities, so [he] climbed that sucker.” The IRC has allowed him to get involved in the community post-injury and has allowed him to discover all the activities and adventures that he can take part in- including scuba diving.

One of the adapted sport opportunities offered every year through the Patricia Neal IRC is the adapted scuba diving clinic. The IRC partners with the scuba diving instructors at the University of Tennessee, Knoxville to run the clinic. With the help of volunteers who are certified divers, the instructors take participants with various disabilities swimming in the pool. Frank has been a participant in the adaptive scuba clinics for “probably 10 or more years.” One of the reasons why Frank enjoys scuba diving is because he feels “much more free in the water than in a wheelchair.” Like many others, Frank is describing the freeing feeling associated with buoyancy in the water which allows for a weightless, free feeling. In addition, he also reports

Despite that fact that he had some scuba diving experience pre-injury, Frank describes adaptive scuba as an opportunity “to introduce people with disabilities to scuba.” Another aspect of adaptive scuba, along with all the other adaptive sport activities, that Frank enjoys is “getting with other people.” Scuba diving is an excellent opportunity for social connection between new and old divers alike. The participants in the adaptive scuba clinic get to interact with each other as well as with all the certified diver volunteers who are there to ensure the clinic runs safely. Because of his prior experience, Frank is often paired with the UT students who are often brand-new open water divers, and he says being with the college students “makes [him] feel young.”

Thematic Analysis

Through a qualitative analysis of Frank’s narrative, I have identified 4 main themes that reflect the potential therapeutic value of participating in recreational scuba diving for individuals

with disabilities. These themes include freedom and weightlessness; social connection and belonging; identity and purpose; and emotional impact.

One of the most powerful themes seen throughout literature and supported by Frank's story was the feeling of freedom, both physical and emotional. Frank consistently emphasized how being in the water provided him with a sense of freedom from the constraints of his wheelchair, describing himself as feeling "much more free in the water." This aligns with literature describing how buoyancy offers individuals with mobility impairments the rare opportunity to move without restriction.

Another prominent theme surrounding scuba diving as recreational therapy was social connection and belonging, and this theme can be clearly seen through Frank's story. All of the adaptive sports through the Patricia Neal IRC served to reintroduce Frank to the community and to social engagement, and scuba diving served as a unique setting for Frank to engage with others, including both individuals with and without disabilities. He specifically noted the joy of "getting with other people" and forming connections, particularly with UT students which made him "feel young." This reflects the inherently social nature of scuba diving and its ability to foster inclusion and a sense of community.

Participation in adaptive sports is often linked to the reconstruction of identity and the development of self-confidence among individuals with disabilities. Frank demonstrated this theme by returning to scuba diving post-injury. Frank's role in mentoring less experienced divers and his willingness to challenge himself highlights a growing sense of agency and mastery. Additionally, Frank reported feelings of excitement and enjoyment as a result of his participation in scuba diving activities. The themes seen throughout the literature linking adaptive scuba

diving to increased positive emotions, decreased anxiety, and an overall psychological benefit can also be seen here through Frank's story.

CHAPTER 5

IMPLICATIONS FOR PRACTICE

This case study offers numerous implications for recreational therapists, especially those who are seeking to expand their interventions. Scuba diving should be recognized by recreational therapists as a legitimate, evidence-based therapeutic intervention that can be used to address physical, emotional, and social goals. Scuba diving has the potential to be particularly beneficial for people with physical disabilities due to the experience of weightlessness and increased range of motion. Additionally, the novelty of scuba diving as well as the adventurous nature can spark motivation in clients who may otherwise be resistant to traditional approaches to therapy. This increased motivation can improve engagement and help participants build confidence by mastering a skill that is both complex and meaningful. Scuba diving can also be a great therapeutic intervention for fostering peer interaction. It naturally involves teamwork, communication, and trust. These things make it a great tool for developing social skills and peer relationships which can be especially useful in group or community-based recreational therapy programs.

Recommendations for Program Development

There are many considerations that need to be made for a recreational therapist to implement an adaptive scuba diving program. One of the first things to think about when developing an adaptive scuba diving program would be establishing partnerships. Collaboration with a local dive shop would give access to trained instructors and people who are able to run and supervise the actual scuba diving activities. In addition, recreational therapists can work with local universities or organizations that may have experience working with individuals with disabilities in order to recruit volunteers who may be able to help. Partnering with an adaptive

scuba organization can provide the best of both worlds by connecting you with people who already have experience working with individuals with disabilities while scuba diving.

After establishing these partnerships, the next step would be to recruit and train volunteers. These volunteers could be certified divers or students to function as adaptive buddies in the water with the participants. It can also be beneficial to have extra volunteers both in the water and out of the water as extra hands for the participants who may need more physical assistance. Volunteers need to be provided with training on disability awareness and etiquette, assistive communication underwater, and the basic safety rules.

Another consideration to make when organizing an adaptive scuba diving program is to ensure you have the appropriate facilities available. This means making sure that your facility is ADA-compliant and has accessible entrances, locker rooms, and restrooms. If you have participants with physical limitations, a pool with a lift can be ideal, but you can also lift and transfer people if you have enough volunteers to do so safely. For introductory scuba diving sessions, a warm, indoor pool is ideal because you do not have to worry about people becoming overly cold or getting sunburned.

Before the start of the adaptive scuba diving program, it is important to have a risk management plan in place, including a medical screening for all potential participants. By having the medical screening sent to participants beforehand, you give individuals the time to consult their doctor if necessary. In addition to this medical screening, your risk management plan should include informed consent forms, emergency protocols, and clear supervision ratios.

Because we identified the potential cost barrier preventing individuals from participating in adaptive sports, it is crucial to consider funding for the program and ways to make it more cost accessible for participants. Grant funding can be a good way to offset cost potentially for

equipment or training. Cost can be another great reason to partner with a local dive shop because you can ask if they would be willing to donate equipment or give you a discounted rate.

Additionally, partnering with disability advocacy groups or other allied health organizations can also be a good way to get donations to offset program costs.

The final consideration needed before organizing and implementing an adaptive scuba diving program is the program's structure. The recreational therapist must decide whether to have a one-time adaptive scuba diving event versus having a full adaptive scuba diving program with recurring sessions. With a long-term program where participants attend recurring sessions, you would want to consider the progression. The first couple of sessions would need to be focused on learning and following all safety rules, gaining confidence and comfort in the water, and having fun. Over multiple sessions, there can be opportunity for growth and development of skills. There can also be the potential of offering the opportunity for participants to obtain an adaptive diver certification. The program layout and progression should be decided on and presented to potential participants to prepare them for what the program will involve.

Suggestions for Future Research

While this case study offers a unique insight into scuba diving as a recreational therapy modality, more research is needed. Future research should explore the broader impacts of scuba diving as a therapeutic modality through both qualitative and quantitative methods. Because scuba diving as a therapeutic modality is a relatively new concept, there has been little to no research on its long-term effects. Longitudinal studies can be used to examine the long-term psychological and physical outcomes of regular participation in adaptive scuba diving, particularly relating to quality of life and emotional well-being. When looking at adaptive scuba diving versus other adaptive sport endeavors, comparative studies can be used to determine

which activities may yield the greatest benefits for various populations. A mixed-methods study design could be useful in getting both qualitative and quantitative data at the same time. In a mixed-methods study, collecting physiological measures such as heart rate or blood pressure would allow you to observe the physical effects that scuba diving may have on an individual. In addition to this quantitative data, you could utilize surveys or in-depth interviews to obtain qualitative data and capture a more well-rounded understanding of the therapeutic effects of scuba diving. Studying adaptive scuba diving programs in group settings could also be interesting to further assess the impact on socialization, teamwork, and community integration.

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VITA

Kayley Siler is a graduate student pursuing a master's degree in Therapeutic Recreation at the University of Tennessee, Knoxville. She earned her bachelor's degree in Kinesiology from the University of Tennessee in December 2022.

In 2024, Kayley was a presenter at the Southeastern Recreational Therapy Symposium, where she delivered a presentation titled "The Benefits of Scuba Diving as Recreational Therapy: A Case Study." For this presentation, she was honored with the Ann James Award for the outstanding presentation of the conference.

During her graduate studies, Kayley served as a member of the Therapeutic Recreation Experiential Education team, where she helped organize and lead camp programs for individuals with disabilities. She also held the role of co-director for Camp Koinonia in 2024 and 2025, a camp serving children ages 7 through high school with various disabilities.

In the summer of 2025, Kayley is completing her Therapeutic Recreation internship at Camp Lakey Gap, a camp specifically for individuals with Autism. At Camp Lakey Gap, she serves as the Activity Director, leading weekly Music and Motion sessions and organizing Special Events.