

Abstract

The Current Profile of Aquatic Rehabilitation, Fitness, and Training Practitioners

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Aquatic rehabilitation, fitness, and training practitioners are perceived as competent, knowledgeable, certified specialists who use a comprehensive therapeutic approach in combination with aquatic techniques to aid in the rehabilitation of various conditions. These specialists, however, have diverse educational backgrounds that include content in movement, knowledge of chronic and acute disabling conditions, diseases, and aquatic techniques. In the past two decades, aquatic therapy has become a diverse multidisciplinary field. Each aquatic practitioner's role is individually defined, and each individual may hold a different job description, work with different populations, and possess different preparation and training.

A growing body of literature tends to support the efficacy and benefits of aquatic rehabilitation, fitness, and training in general, yet within the aquatic field it remains unclear who actually provides these aquatic rehabilitation, fitness, and training services (Norton & Jamison, 2000). The purpose of this study was to examine aquatic practitioners currently providing aquatic rehabilitation, fitness, and training services from two of the leading aquatic organizations, Aquatic Resource Network (ARN) and Aquatic Therapy & Rehab Institute (ATRI). The study was designed to help identify and describe the individuals providing aquatic

rehabilitation, fitness, and training services. Five research questions were posed to examine relationships between the professional profile of respondents of the two aquatic organizations and the types of credentialing, settings, and population groups, and services provided.

A descriptive questionnaire consisting of 26 questions was designed and is divided into three sections: (a) demographic, (b) facility, and (c) aquatic therapy continuing professional development information. Each section focused on the establishment of a profile of aquatic rehabilitation, fitness, and training practitioners of the targeted organizations. The questionnaire was validated for content validity via a jury of experts with knowledge in survey design and aquatics. In order to achieve maximum survey response the principle investigator followed Dillman's (2000) Tailored Design Method (TDM).

This study yielded 180 usable surveys, with comparable responses from both aquatic organization memberships. The study sample consisted of 16.1% ($n = 29$) Aquatic Resource Network (ARN) respondents, 21.6% ($n = 39$) Aquatic Therapy and Rehab Institute (ATRI) respondents, 21.6% ($n = 39$) respondents belonging to both organizations, and 29.4% ($n = 53$) respondents belonging to neither organization.

Results reflect a diverse field of practitioners and a general lack of consistency in educational background, aquatic training and certifications, and populations served. Implications for consistency and credentialing are addressed.

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by

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DEDICATION

I would like to dedicate this work to my family and friends. Their honesty, humor, and wisdom are invaluable. I would like to thank them for their constant love, support, and prayers, which has given me the strength to complete this work.

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CHAPTER I: INTRODUCTION

Aquatic rehabilitation, fitness, and training are emerging aquatic specialties that address the needs of a wide range of individuals and include diverse techniques and applications. This chapter will provide an overview of the industry including economic profile and scope, range of services, and diversity of disciplines involved in aquatic treatment. The significance of this research, purpose, research questions, limitations, delimitations, and terms will also be addressed.

Aquatic Therapy Industry and Scope

In 2004, the National Swimming Pool Foundation estimated that there were around 270,000 commercial swimming pools in the United States (Centers for Disease Control [CDC], 2009b). The American Sports Data researched active participation in these pools in 2004 (Aquatic Resource Network, 2008). The study suggested that there are 5.8 million people in the United States who participate in aquatic exercise (CDC, 2009a). Aquatic exercise can be defined as a series of movements and stretches conducted in water, which is designed to increase aerobic activity and heart rate (Abboudi, 2001). Aquatic exercise can include the implementation of water exercise and swimming to improve one's physical and psychological well-being (Cole & Becker, 1994). Additionally, aquatic therapy services are demanding a larger role in health care. In 2005, the amount of aquatic therapy services billed to Medicare by private practice physical therapists was estimated at 46 million dollars (Salzman, 2009).

The application of aquatic rehabilitation, fitness, and training services is expanding across several diagnostic categories and settings. “Aquatic rehabilitation

continues to increase in popularity in inpatient and outpatient physical rehabilitation facilities. Most of the newer rehabilitation and outpatient facilities built since the 1990s incorporate some type of pool or aquatic treatment environment" (Irion & Brody, 2009, p. 8). Diagnostic categories can include neurological, orthopedic, rheumatic, obese conditions, and those associated with sports injuries. Some diagnostic categories utilize aquatic rehabilitation, fitness, and training techniques to assist with rehabilitation (Brody & Geigle). In practice, it is more useful to consider the needs and goals of the individual client rather than a specific diagnostic category when making decisions about aquatic rehabilitation, fitness, and training (Brody & Geigle, p. 9). Hospitals, private therapeutic practices, rehabilitation centers, community centers, and recreational/wellness centers are each developing aquatic programs needed by prospective clients. Many of these facilities are seeking qualified individuals to deliver services that respond to the needs of their diverse consumer groups.

At this time, there are no aquatic surveys or studies published which provide a profile of aquatic rehabilitation, fitness, and training providers. An initial profile of the aquatic therapy industry was gained by reporting the number of individuals participating in aquatic exercise, and the billable hours submitted by private physical therapists to Medicare.

Diversity of Training

Today, there are numerous certifications and courses offered to enhance one's educational experience with aquatic rehabilitation, fitness, and training (American Alliance for Health, Physical Education, Recreation and Dance [AAHPERD], 2006; Aquatic Exercise Association [AEA], 2000; Aquatic Therapy and Rehab Institute

[ATRI], 1994a; United States Water Fitness Association [USWFA], 2009; USA Swimming, 2004; and Young Men's Christian Association [YMCA], 1999a, 1999b). For the purpose of this project, these certifications and courses were categorized into six subgroups: Intervention Specific, Population Specific, Industry Specific, Aquatic Fitness, Swim Training Techniques, and Basic Aquatic/Safety Certificates. These subgroups can be described as:

Intervention specific: The use of intervention specific aquatic specialty techniques that are practiced to achieve functional outcomes in clients (Brady, Kruger, Helmick, Callahan, & Boutaugh, 2003). These techniques focus on the properties of water such as buoyancy, viscosity, and hydrostatic pressure to maximize outcomes. Some intervention specific techniques require certification and extensive training. Intervention specific certifications are identified as Ai Chi, Aquatic Proprioceptive Neuromuscular Facilitation (PNF), Bad Ragaz Ring Method, Aquatic Feldenkrais, Halliwick Method, and Watsu® (Irion, 2009).

Population specific: Population specific techniques are a set of exercises tailored to meet a distinct population's needs (USWFA, 2007). These population specific certifications can be obtained from national organizations such as the Arthritis Foundation Aquatic Program (AFAP), the Young Men's Christian Association (YMCA), the American Red Cross (ARC), or the National Multiple Sclerosis Society. The most common of these population specific techniques are targeted toward individuals with Multiple Sclerosis (MS) and Arthritis (Rosenstein & ESSERT, 2007; Rosenstein & Sova, 2006).

Industry specific: The aquatic rehabilitation industry defines an Aquatic Therapy Practitioner as an individual who has received industry specific training and certification and is credentialed by the Aquatic Therapy and Rehab Institute (ATRI). Beginning in 1996, the ATRI developed a set of standards to assist professionals involved in aquatic wellness and rehabilitation services (ATRI, 1994a). These standards provide guidelines that assist in defining aquatic therapy and wellness practice in the water. The standards are written in general terms to accommodate multiple settings and multiple disciplines (Jake, 2006). “In 1998, the ATRI established a multidisciplinary aquatic therapy certification known as the International Council for Aquatic Therapy and Rehabilitation Industry Certification (ICATRIC) to provide credentials for those who successfully indicate minimum competency and knowledge in aquatic rehabilitation and wellness” (Norton & Jamison, 2000, p. 2). However, the ICATRIC certification does not extend legal authorization or public protection in the practice of aquatic therapy. It is important to note that the National Commission for Certifying Agencies (NCCA) does not recognize the ATRI certification. Also, at this time there is no aquatic therapy or aquatic fitness certifications recognized by the NCCA (Institute for Credentialing Excellence [ICF], 2009).

Aquatic fitness: Individuals who have completed aquatic class time and courses offered by agencies such as the American Exercise Association (AEA) and/or the United States Water Fitness Association (USWFA) commonly hold aquatic fitness certifications. These organizations offer such certifications as aqua aerobics, aquatic personal training, aquatic kickboxing, aquatic senior fitness, and aquatic youth fitness. Many aerobic and fitness organizations such as the Aerobics and Fitness Association of America (AFAA),

American Fitness Professionals & Associates (AFPA), and Aquatic & Fitness Professional Association-International (A-PAI) offer one-day workshops, online courses, certificates, and continuing educational credit. These training options are designed to develop knowledge, skills, and abilities to teach aquatic fitness classes (Aquatic Exercise Association, 2006).

Swim training techniques: Swim training techniques are certification courses offered by organizations such as the American Red Cross to train individuals to teach clients how to swim, water safety, and parent and child aquatics. Other certifications offered by swimming groups such as Total Immersion, Miracle Swimming Institute, USA Swimming, and the American Red Cross Swim Coaching teach swimmers how to improve stroke mechanics, educate others, and adapt to swimming in open water (Lambeck, 1992; Laughlin & Delves, 2004). There are numerous certificates and continuing educational units (CEUs) available (Dunlap, 2009).

Basic aquatic/safety certificates: Basic aquatic certificates are provided by organizations such as the American Red Cross. These certificates are acquired by completing educational coursework based on aquatic safety, pool operations, and first aid. The most common certificates being sought after by aquatic practitioners include lifeguarding, first aid, and certified pool operator (CPO) (American Red Cross, 1991, 2009).

The diversity of certifications, range in populations, and array of disciplines has made it difficult to adequately describe or determine who is involved in aquatic rehabilitation/therapy. More specifically, what is the background and preparation of

individuals who describe themselves as an aquatic rehabilitation, fitness, and/or training practitioner?

Significance of Study

Aquatic Rehabilitation, Fitness, and Training Practitioners are perceived as competent, knowledgeable, certified specialists who use a comprehensive therapeutic approach in combination with aquatic techniques to aid in the rehabilitation of various conditions (ATRI, 1994a). These specialists, however, may have diverse educational backgrounds that include content in movement, knowledge of chronic and acute disabling conditions, diseases, and aquatic techniques. Many aquatic professionals hold educational degrees and/or national certifications. However, “aquatic therapy training is not a consistent standard or base of any curriculum in the rehabilitation disciplines” (Norton & Jamison, 2000, p. 3).

In the past two decades, aquatic therapy has become a diverse multidisciplinary field. Each aquatic practitioner’s role is individually defined, and each individual may hold a different job description, work with different populations, and possess different preparation and training. “A number of health-related professionals take their work into the water. No single health specialty has exclusive ‘rights’ to the ‘water’ (Irion & Brody, 2009, p. 9). The difference in each therapist’s aquatic forte and educational background has created confusion for consumers and agency providers.

Purpose

The purpose of this study was to identify and describe the current profile of individuals who are members of the Aquatic Resource Network (ARN) and Aquatic Therapy and Rehab Institute (ATRI) who present themselves as aquatic rehabilitation,

fitness, and training professionals performing aquatic intervention services. ATRI and ARN are two of the leading professional development organizations within the field (Sova, 2009b & Aquatic Resource Network, 2009). The results offer a description of individuals within these networks who practice aquatic rehabilitation, fitness, and training.

Research Questions

The study addressed the following research questions

- RQ1. What is the profile of aquatic rehabilitation, fitness, and training practitioners who are registered with the online organization Aquatic Resource Network (ARN) and Aquatic Therapy & Rehab Institute (ATRI)?
- RQ2. What types of facility, intervention instructional formats, diagnostic related classes and specific diagnostic related groups reflect aquatic rehabilitation, fitness, and training practice as reported by those members of Aquatic Resource Network (ARN) & Aquatic Therapy & Rehab Institute (ATRI)?
- RQ3. What are the potential determinants of continuing professional development for aquatic rehabilitation, fitness, and training practitioners?
- RQ4. What influence does membership in aquatic rehabilitation, fitness, and training organizations have on the number of certifications that aquatic practitioners hold?

RQ5. Does the number of years of practice influence the amount of total certifications which aquatic rehabilitation, fitness, and training practitioners pursue?

Delimitations

The study addressed the profiles of those individuals who are members of ARN and ATRI only. It did not address the entire population of practitioners who perceive themselves to practice aquatic rehabilitation, fitness, and training. Participation was voluntary and random sampling was not employed. Data collection took place online through the electronic survey tool known as Perseus. Participants maintained the right to refuse to fill out the survey and confidentiality was ensured for those who participated.

Limitations

The limitations to this study focused around the sample size, comparative group, access to records, and inability to randomize samples. These limitations impacted the conclusions generated from the data. The researcher identified the following limitations to the research study:

1. Only those individuals who were members and actively involved in the ARN and ATRI organizations were included. Therefore, there were a limited number of subjects from which to draw conclusions. The sample size does not clearly reflect the total of practicing aquatic rehabilitation, fitness, and training practitioners and thus, limits the generalizability across the practicing aquatic intervention population.
2. The inclusion of individuals who willingly volunteered to complete the survey presented a limitation on representativeness of the population.

3. Due to the nature of the study, random selection and assignment was not feasible.
4. As with any self-reported variable, there was a potential for inaccurate reporting, and recall bias when identifying answers in the aquatic rehabilitation, fitness, and training survey.

Definition of Terms

Ai Chi: “Like Tai Chi, Ai Chi combines slow, fluid, rhythmic movements with controlled breathing. Movement patterns involve large-muscle groups of the body, symmetric or asymmetrical movements, and a single-leg stance, all of which can improve mobility and strength. When combined with diaphragmatic breathing, these movement patterns can increase relaxation and decrease pain” (Sova, 2009a, p. 102).

Aqua: Water (Webster’s New World Collegiate Dictionary, 2002).

Aquatic: “Taking place in or on water” (Aquatic Resource Network, 2002, p. 7).

Aquatic Rehabilitation, Fitness, and Training Practitioner: are competent, knowledgeable, certified specialists who use a comprehensive therapeutic approach in combination with aquatic techniques to aid in the rehabilitation of various conditions (Geigle, 2009).

Aquatic PNF: “A form of active aquatic therapy modeled after the principles and movement patterns of Proprioceptive Neuromuscular Facilitation (PNF). Aquatic PNF can be provided in either a hands-on or hands-off manner by the provider. The client is verbally, visually and/or tactiley instructed in a series of functional, spiral and diagonal, mass movement patterns while standing, sitting, kneeling, or

lying in the water. The patterns may be performed actively, or with assistance or resistance provided by specialized aquatic equipment or the provider" (Ogden, 2001, p. 7; Ogden & Sova, 2002).

Aquatic Therapy: "A therapeutic procedure, which attempts to improve function through the application of aquatic therapeutic exercises. These procedures require constant attendance of a therapist educated in performing aquatic therapeutic exercises" (American Medical Association [AMA], 1999, p. 415 - 416).

Aquatic Rehabilitation: "A scientific theory, medical rationale, and a set of clinical procedures using water immersion for the restoration of physical mobility and physiological activity, and, at times, for effecting psychological transformation" (De Vierville, 1997, p. 1).

ATRI Certification: The Aquatic Therapy and rehab industry (ATRI) practitioner certification (Aquatic Therapy & Rehab Institute, 1994a).

Bad Ragaz Ring Method: "The Bad Ragaz Ring method is an active one-to-one aquatic therapy concept. The therapist provides the resisting fix points to patients. The technique requires the therapist to be highly skilled and accurate. The Bad Ragaz Ring method concept is used for aquatic rehabilitation of patients in the early stage. The treatment goals in the method are always at the level of body functions, and may be combined with other water-specific therapies" (Gamper & Lambeck, 2009, p. 100).

Fluid Moves (Aquatic Feldenkrais): A similar form of active or passive aquatic therapy to aquatic Feldenkrais. The provider may use either a hands-on or hands-off manner. During Fluid Moves, the client is guided through a sequence of

movements. The client stands in chest-deep water, with the client's back to the pool wall, and is verbally instructed by the provider to perform a slow, rhythmic combination of therapeutic movements and deep breathing (Weiss, 2010).

Hydro: “Water” or “Liquid” (Aquatic Resources Network, 2002, p. 3).

Halliwick Method: “A form of adapted aquatics which can be modified into active aquatic therapy. Halliwick is almost always performed in a hands-on manner by the provider and is typically done through the use of games within groups of client-provider pairs. The client is usually held or cradled in the water while the provider systematically and progressively destabilizes the client in order to teach balance and postural control. The provider progresses the client through a series of activities, which require more sophisticated rotational control in an attempt to teach the client to swim (for adapted aquatics clients) or in an attempt to teach control over movement (for aquatic therapy clients). The client is continuously required to react to, and eventually to predict, the demands of an unstable environment. The Halliwick Method combines the unique qualities of the water with rotational control patterns” (Lambeck & Gamper, 2009, p. 47).

Rehabilitation: “The process of restoring one’s health and functional status after disabling disease, injury, or addiction through purposeful intervention” (Blaschko, 2001, p. 262)

Therapeutic: “Of or relating to the treatment of disease or disorders by remedial agents or methods rather than a diagnostic specialty” or “providing or assisting in a cure” (Aquatic Resources Network, 2002, p. 4).

Therapy: “Therapeutic treatment, especially of bodily, mental, or behavioral disorder” (Aquatic Resources Network, 2002, p. 3).

Watsu: “A form of passive aquatic therapy modeled after the principles of Zen Shiatsu (massage). The provider always performs Watsu in a hands-on manner. The client is usually held or cradled in warm water while the provider stabilizes or moves one segment of the body, resulting in a stretch of another segment due to the drag effect. The client remains completely passive while the provider combines the unique qualities of the water with rhythmic flow patterns” (Dull, 1998, p. 16).

CHAPTER II: LITERATURE REVIEW

Introduction

The following literature review is intended to provide an understanding of aquatic rehabilitation, fitness, and training. The literature will illustrate the historical background of aquatic rehabilitation and techniques, credentialing process, and provide a brief description of the different disciplines that incorporate aquatic interventions into therapy, fitness, and training services. The review of the literature will also illustrate the benefits of aquatic rehabilitation, fitness, and training; along with the range of services aquatic therapy provides. It is the researcher's intent that throughout the literature review, the reader will develop an understanding of aquatic rehabilitation, fitness, and training and the interventions, treatments, and techniques utilized. The chapter will discuss aquatic rehabilitation principles and practices, in order to emphasize the need for addressing the profile of rehabilitation, fitness, and training practitioners.

Aquatic Therapy

Since the 1980s, American aquatic rehabilitation, fitness, and training practitioners have used the term "Aquatic Therapy" to describe the rehabilitation process in water (Norton & Jamison, 2000, p. 2). The American Medical Association (AMA) defines aquatic therapy as "a therapeutic procedure, which attempts to improve function through the application of aquatic therapeutic exercises" (American Medical Association [AMA], 1999, pp. 415-416). According to Broach (2008) "Aquatic Therapy is a clinical specialty, sometimes referred to as a treatment procedure. Aquatic Therapy entails a purposeful progression of skills focusing on psychosocial, cognitive, leisure and motor

performance using the properties of the water to enhance the benefits of the experience” (p. 2). Applications of aquatic interventions are provided by a full spectrum of professionals and para-professionals. These aquatic professionals’ disciplines can range from a licensed physical or recreational therapist to an aquatic expert who has many years of practical experience in water activity.

Historical Background

Aquatic exercise is a relatively new form of formal treatment; however, since ancient times people have been known to turn to hot springs and spas for healing (Cole & Becker, 1997). According to De Vierville (1997) humans across generations have used aquatic therapy when they were sick or suffering. Healing water rituals have appeared in the ancient Greek, Hebrew, Roman, Christian, and Islamic cultures as “ancient civilizations used the waters for cleaning the earthly body of disease and cleansing the spiritual body of sin” (Cole & Becker, 1997, p. 1). It was Franklin D. Roosevelt who encouraged the medical acceptance of aquatic rehabilitation after he benefited from partaking in aquatic therapy in the warm springs of Georgia (De Vierville, 1997). Broach and Dattilo (2000) referred to aquatic therapy as a clinical specialty or treatment modality, which uses the benefits of purposeful skilled progressions in the water to enhance the psychosocial, cognitive, and leisure experience of an individual.

Aquatic history provides a foundation for understanding the current conditions of aquatics in rehabilitation, fitness, and training. The long history of the use of aquatic treatment for therapeutic purposes makes it a clinical specialty which has generated a number of terms that describe these treatment modalities, including hydrotherapy, balneotherapy, water therapy, spa therapy, aqua therapy, water gymnastics, and water

exercise (Bartels, Lund, & Hagen, 2005). This terminology can lead to some confusion and misinterpretation of the psychosocial, cognitive, leisure and motor aspects of aquatic rehabilitation, fitness, and training. Thus, the purpose of the next section is to provide a foundation for understanding those practitioners credentialed in aquatic rehabilitation, fitness, and training.

Aquatic Therapy Credentialing

Aquatic Therapy needs to be performed under the constant attendance of a qualified therapist (Aquatic Resource Network, 2002). “Therefore, the American Medical Association cannot define an aquatic therapist, because aquatic therapy is not tied to a single profession. It can arguably be performed by several legally-regulated healthcare providers who have scopes of practice which permit them to perform such services and who are permitted to use the American Medical Association (AMA)’s Current Procedural Codes (CPT)” (Aquatic Resource Network, 2002, p. 5).

Healthcare providers who legally perform aquatic therapy address the functional goals and objectives consistent with their discipline’s scope of practice. More clearly, aquatic rehabilitation therapists must follow the same protocols for meeting goals and objectives as they would on land. Therefore, while being in the pool, all scopes of practice are not equal. Quite simply, an aquatic rehabilitation professional whose background is in Physical Therapy (PT) will perform the same assessments, interventions, and goals as if his or her client was on land. The aquatic therapy training allows for the application of those skills in water, a buoyant and viscous environment. This is why the concept of an “aquatic therapist” is a misnomer, in that each aquatic rehabilitation, fitness, and training professionals has a different aquatic milieu.

Technically, only the health care disciplines should professionally provide therapeutic interventions in the water and under his or her legal scope of practice (Norton & Jamison, 2009).

Aquatic Therapy and Healthcare-Related Disciplines

Currently, there are many different disciplines that provide aquatic therapy, fitness and training services. It is important to understand what each discipline's interest is in aquatic therapy along with the types of training offered to these individuals. Below is a brief description of each of the disciplines and the aquatic education opportunities each discipline receives.

Aquatic Exercise Instructor

Aquatic exercise classes are recreational in nature and are formatted to provide active exercise for health and overall well-being, promote program adherence, prevent injury, and instill overall independence (Tilden, 2000). Most clients attend aquatic exercise classes to prevent injury and stay healthy. Aquatic exercise classes are taught by aquatic exercise instructors (AEIs), who are considered to be non-licensed practitioners. These AEIs may possess aquatic instructor training certification from such organizations as American College of Sports Medicine (ACSM), Aquatic Exercise Association (AEA), International Dance Education Association (IDEA), United States Water Fitness Association (USWFA), or the Young Men's Christian Association (YMCA) (Norton & Jamison, 2009). Many different training and certification organizations exist nationally and internationally. In order to become certified, most organizations test knowledge acquired through self-study or test the knowledge acquired from courses taught by a certified instructor (USWFA, 2007). The purpose of passing the examination is to ensure

that the instructor can provide clients a safe water aerobic fitness class. AEIs do not provide any rehabilitative therapy services because most AEIs are not educated in disease pathology (Brody & Geigle, 2009). AEIs must engage in continuing education in order to prevent faulty demonstrations and continue their aquatic training by attending workshops or seminars to maintain skills, education, and qualifications to ensure the public safety.

Certified Athletic Trainer

The National Athletic Trainers' Association (NATA) defines an athletic trainer as "an allied health professional who has a bachelor's degree from an accredited college/university, has fulfilled the requirements for certification as established by the NATA Board of Certification (BOC), and passed the NATABOC certification examination administered by the NATABOC" (Norton, 2000a, p. 76). Certified athletic trainers work under the direction of a licensed physician. Today, the certified athletic trainer (ATC) plays an essential role in the prevention, detection, and treatment of injuries to individuals who are physically active. An ATC focuses primarily on direct treatment of injury, rehabilitation, and wellness of athletes to maintain optimal performance. In 1997, the NATA competency guidelines changed established athletic training education to include aquatic athletic training as a contemporary therapeutic exercise, however, most ATCs learn aquatic techniques such as Watsu®, Feldenkrais, Bad Ragaz, Burdenko, and Ai Chi through continuing educational courses. Most of these aquatic techniques can be found as aquatic courses at state, regional, or national athletic training conferences.

Norton (2000a), in a survey of ten schools, found that only two schools provide basic aquatic rehabilitation information as a component of the athletic training curriculum and one school uses aquatic therapy routinely in the rehabilitation of athletic injuries (p. 77). This survey suggested that most ATCs gain aquatic experience via on the job training or continuing education. It is important to note that the lack of standardized aquatic therapy education within athletic training curricula may cause some ATCs to use the water without understanding the use of hydrodynamic principles.

Exercise Physiologist

Exercise Physiology is a discipline involving the study of how exercise alters the structure and function of the human body. Exercise physiologists have an academic degree and/or certification in the analysis, improvement, and maintenance of health and fitness (Kennedy, 2000). Currently, exercise physiologists (EPs) possess certifications to practice. Only the state of Louisiana licenses clinical EPs (DuBois, 1995). It has been estimated that over 60 online organizations offer some form of exercise certification for health and fitness professionals (DuBois, 1995). The four most prominent certifying organizations are Aerobics and Fitness Association of America (AFAA), American College of Sports Medicine (ACSM), American Council on Exercise (ACE), and Young Men's Christian Association (YMCA). Each organization offers different guidelines and testing.

The formal certification in exercise physiology may help expand knowledge in exercise science but does not address aquatic exercise physiology. Comprehensive knowledge in aquatics can be found outside the classroom. Aquatic exercise physiology development is found in additional educational courses, internship opportunities, or

working with an already existing aquatic program where an individual can focus of aquatic exercise physiology (Kennedy, 2000).

Kinesiotherapist

“Kinesiology is the science that investigates and analyzes human motion” (Garrison, 2000, p. 99). The American Kinesiotherapy Association (AKTA) (1998) defines the role of a Kinesiotherapist (KT) as “a health care professional who, under the direction of a physician, treats the effects of disease, injury, and congenital disorders through the use of therapeutic exercise and education” (American Kinesiotherapy Association [AKTA], 1998). Kinesiotherapy uses aquatics to improve function by increasing one or more parameters of fitness: strength, flexibility, cardiovascular endurance, and muscular strength (Garrison, 2000). Kinesiotherapy uses aquatic therapy treatments as a precursor to land based exercises or to increase clients’ general wellness. For example, some KTs teach water exercise classes to clients with particular problems such as arthritis, multiple sclerosis, chronic pain, or substance abuse. In these educational classes, the KT acts only as an instructor (not a therapist) of a class designed to increase general wellness of individuals with a particular diseases or condition.

Some colleges and universities offer kinesiotherapy classes or clinics. These clinics may utilize the university swimming pools and offer aquatic programs to the general public (Lepore, William Gayle, & Stevens, 2007; Norton & Jamison, 2009; Sanders & Lawson, 2006). By doing so, students can receive early exposure and training in aquatic techniques and are able to apply these techniques to kinesiotherapy practices. In schools that do not offer university based aquatic training, students must seek continuing education courses specific to aquatic therapy. Aquatic continuing education

courses for KTs generally include a multidisciplinary format and are available through a variety of organizations.

Massage Therapist

Massage therapy is the “practice or art of using touch to relax and nurture the body, mind, and spirit” (DeGooyer, 2000, p. 111). A massage therapist uses a variety of techniques in order to encourage the client’s body to function at an optimal level (DeGooyer, 2000). Massage therapy is known to relax the body so that it facilitates good health and well-being. The physical contact and pressure from a massage therapist helps a client’s body release tension and stress. The use of therapeutic massage is increasing. A 1998 Stanford Center for Research in Disease Prevention (SCRDP) survey cites an increase in the use of massage therapy. The study found that 69% of massage recipients said massage cured or relieved their symptoms considerably (Coughlan, 1999).

Aquatic massage techniques such as Watsu®, WaterDance, and Jahara have all been pioneered within the last thirty years (Ruoti, Morris, & Cole, 1997). Aquatic massage takes century-old principles and applies these principles to warm water and current aquatic techniques. In order to become certified in aquatic massage therapy, a student will follow the class guidelines from organizations such as the Worldwide Aquatic Bodywork Association.

The Worldwide Aquatic Bodywork Association monitors the instruction and practice of aquatic rehabilitation, fitness, and training techniques such as Watsu® and WaterDance. The Worldwide Aquatic Bodywork Association supervises these practitioners and enforces Watsu® and WaterDance educational experiences or any prerequisites such as those needed in order to obtain the Watsu® certification, Watsu®

therapist, aquatic bodywork therapist, and the Jahara technique. Many of these techniques require extensive hours of practice; ranging from 100-1000 hours of hands on training. There are many levels to each certification requiring varying expense. It is recommended that aquatic massage therapists get an overall orientation to each technique before becoming certified (Jamison, 2000; Sova, 1992).

Watsu® is a massage oriented aquatic intervention. Individuals who pursue the art of Watsu® will study heavily the practice of bodywork, meaning that approximately 60-70% of students will have between 100-250 hours of massage education, including anatomy study (Jamison, 2009, p.122). It is not essential to have massage experience or education to attend Watsu® classes or workshops; however, it is important that individuals have some form of education in aquatic principles and techniques along with the understanding of hydrodynamics. Also, individuals wanting to receive training in aquatic massage techniques must fully understand and commit to the extensive training program, which is necessary to achieve certification in the demanding Watsu® technique.

Occupational Therapist

Occupational Therapy (OT) refers to the muscles and mind working together; the use of games, exercises, activities, and handicraft projects help to improve functioning (Jamison, 2000). As of 1999, the American Occupational Therapy Association (AOTA) mandated that an entry-level OT be raised to a master's degree level. Today, very few occupational therapy schools teach aquatic courses within the occupational therapy degree (Jamison, 2000). Therefore, like most of the other disciplines, registered and licensed occupational therapists must seek additional training to apply aquatic techniques.

Aquatic rehabilitation courses are available at conferences on the local, regional, and national level. Other instruction and national certifications are available from a variety of aquatic organizations, (e.g., Aquatic Resource Network, Aquatic Therapy & Rehab Institute, and the Worldwide Aquatic Bodywork Association). “OTs focus on improving gross and fine motor coordination in upper extremity function, specifically to encourage performance of activities of daily living (ADLs) using such aquatic techniques such as Bad Ragaz, aquatic proprioceptive neuromuscular facilitation (PNF), and the Halliwick method” (Jamison, 2000, p. 129).

Physical Therapist

Physical therapy (PT) “is a dynamic profession in which its’ practitioners provide care and services to promote the preservation, development, and restoration of physical function” (American Physical Therapy Association [APTA], 2009). In the late 1980s and early 1990s, many new therapeutic facilities included a pool to incorporate an aquatic component to rehabilitation services (Norton, 2000b). The educational component of PT provides a broad, general knowledge base that enables the entry-level therapist to treat clients across conditions and the life span.

Due to educational reform within PT, schools are now moving the entry-level practice to doctoral degree. Since the field of physical therapy has grown to include a broader knowledge base through the years, it has become difficult for practitioners to remain current in all areas and skills of practice. Therefore, physical therapists are encouraged to become specialized within one of the nineteen specialty sections offered by the American Physical Therapy Association (APTA).

The APTA requires physical therapists and physical therapy assistants (PTAs) to network, learn progressive new approaches to treatment, and share knowledge. “Aquatic physical therapy is considered a unique area of practice, as indicated by the development of the aquatic section within the APTA in 1992. Many aquatic physical therapists treat clients only within their clinical area of expertise such as pediatrics, geriatrics, neurology, orthopedics, or sports medicine” (Norton, 2000b, p. 137).

A study by Morris and Jackson (1994) indicated that 60% of bachelor’s degree PT programs, 67% of master’s degree PT programs, and 56% of PTA programs include aquatic physical therapy as a component of entry-level professional education. Knowledge of aquatic physical therapy is acquired primarily in a lecture format. In many universities, the Doctor of Physical Therapy (DPT) program offers half-day hands on aquatic lectures at a local aquatic facility. This allows students to practice aquatic therapy principles and techniques.

Over the past twenty years PT treatment is increasingly occurring in the water. The Aquatic Physical Therapy Section of the APTA demonstrated its concern for safety by collaborations with Ellis and Associates to develop an aquatic safety course, designed specifically for PTs and PTAs who treat patients in the water (APTA, 2009). The course is similar to the American Red Cross water safety program, and teaches non-swimming and shallow-water rescue skills (American Red Cross, 1991).

Recreational Therapist

Recreational Therapy (RT) means a treatment service designed to “restore, remediate and rehabilitate a person’s level of functioning and independence in life activities, to promote health and wellness as well as reduce or eliminate the activity

limitations and restrictions to participation in life situations caused by an illness or disabling condition" (American Therapeutic Recreation Association [ATRA], 1987). A Certified Therapeutic Recreation Specialist (CTRS¹) provides prescribed interventions to facilitate improved functional abilities, health status, and/or quality of life. In order to become a CTRS, a bachelor's degree in recreational therapy/therapeutic recreation or in recreation with an emphasis in therapeutic recreation is required. Recreational therapy students are introduced to aquatic concepts in recreational therapy facilitation techniques courses (Broach, Dattilo, & Loy, 2000). In addition, most CTRSs receive an introduction to water safety techniques in their professional preparation programs. For many recreation therapy students, water safety instructor certification or lifeguard training certification may be a college-level requirement. As a result of this additional academic preparation, CTRSs may utilize adapted aquatic techniques (Stanat & Broach, 2000).

Recreational therapists receive advanced training in aquatic interventions through workshops and conferences sponsored by therapeutic recreation profession organizations or other allied health organizations. A recreational therapist may also acquire additional on the job expertise and from other therapists skilled in a particular aquatic rehabilitation technique.

Benefits of Aquatic Therapy

The benefits of aquatic therapy have been widely reported in the past ten years. According to many of the aquatic rehabilitation, fitness, and training and specialized swim instruction professionals, the advantages of taking part in aquatic intervention and exercise classes are found in water's healing qualities (Grosse, 2001). Water provides

¹ Certified Therapeutic Recreation Specialist (CTRS) is a national trademark of the National Council for Therapeutic Recreation Certification.

gentle resistance to movement and can help improve strength and muscle tone. The water provides a safe and comfortable environment, which can be beneficial to those individuals who have weight or joint problems. Rehabilitation and regular physical activity in the water helps increase strength, stamina, and mobility (Campion, 1990, 1997).

Aquatic exercise classes provide a positive body image and raise self-esteem (Sova, 2000). The properties of the water can lower stress levels and help people into more positive moods (Koury, 1996). Aquatic exercise can provide one with more energy over time and increased skill level (Gulick, 2009; Gulick & Geigle, 2009). The more advanced an individual gets with the technique, the more they move with grace and can gain confidence. Aquatic exercise classes can help develop a stronger core and improve overall strength and flexibility while bringing awareness to posture and body mechanics (Katz, 1996). Improved muscle tone and positive sleep patterns are additional benefits.

Aquatic Rehabilitation, Fitness, and Training

Aquatic rehabilitation, fitness, and training techniques have been evolving rapidly during the last century. Currently, aquatic techniques are being developed and adapted from land-based techniques and include aquatic Feldenkrais, proprioceptive neuromuscular facilitation (PNF), and shiatsu. Traditional aquatic rehabilitation techniques such as the Bad Ragaz Ring method and the Halliwick method, which originated in Europe in the 1950s, are continued to be used in this country today (Cole & Becker, 2003). Some individuals such as Mary Dolan, Igor Burdenko, and Mario Jahara Pinto have created their own brand of aquatic techniques, which they have named after

themselves such as the Dolan method, the Burdenko method, and the Jahara technique (Broach & Dattilo, 2000).

Aquatic Rehabilitation

The Aquatic Therapy and Rehab Institute (ATRI) is a multidisciplinary aquatic rehabilitation organization that holds national conferences and workshops many times during the year. Participation in these workshops and conferences allow practitioners to discover a variety of aquatic technique and diagnostic-specific treatments showcased by a diverse group of presenters. Techniques may include Bad Ragaz, Feldenkrais, Aquatic PNF, Halliwick, Watsu®, Jaharra, Wassertanzen, and Burdenko. Diagnosis-specific courses are also available and may relate to back injuries, multiple sclerosis, arthritis, shoulder injuries, knee injuries, and neurological disorders (Sova & Sova, 2000).

Aquatic rehabilitation is used to effectively treat arthritis, multiple sclerosis, rheumatism, musculoskeletal problems, neurological problems, cardiopulmonary pathology, and other conditions. Although aquatic rehabilitation may not cure these problems completely, it promotes strength, increases mobility and flexibility, improves circulation, and facilitates relaxation.

Aquatic Fitness

Aquatic Fitness classes are taught by Aquatic Exercise Instructors (AEIs). AEIs possess aquatic instructor training certifications from such organizations as The American College of Sports Medicine (ACSM), Aquatic Exercise Association (AEA), International Dance Education Association (IDEA), United States Water Fitness Association (USWFA), or the YMCA. In order to design an aquatic program that

benefits the aquatic group, instructors need to be mindful of all participants and work toward the group's interest. Designing a program for each single individual's impairments can be difficult for an AEI because some instructors are not educated enough to meet the functional limitations and disabilities needs of a client. Therefore AEIs may not have the same level of critical decision-making skills as if they were performing therapy (Bates & Hanson, 1996; Aquatic Resource Network, 2008).

The main focus in aquatic fitness classes is group physical activity. According to the American College of Sports Medicine (ACSM) and the American Heart Association (AHA), adults should accumulate at least 30 minutes of moderate-intensity aerobic activity five days a week OR engage in three days of vigorous activity for at least 20 minutes (American Heart Association [AHA], 2009). According to Blatner and Kushner (2006) focusing on resistance training is one way to improve exercise routines in obese individuals. Exercise is defined as "planned, structured, and repetitive bodily movement done to improve or maintain one or more components of physical fitness" (Casperson, Powell, & Christenson, 1985, p. 126). The components of physical fitness focus on cardiovascular endurance, muscular strength, flexibility, proprioceptive balance, and body composition. Aquatic fitness, exercise, and immersion have been used to effectively improve overall health within the pulmonary system, cardiovascular system, renal system, musculoskeletal system, and neuromuscular system.

Aquatic Training

In the last ten years a multitude of aquatic training studies have been conducted. Companies like HydroWorx (1997) are building personal therapy pools to put in training and rehabilitation facilities. In fact, every day over 15,000 athletes and patients use

HydroWorx technology to recover from injuries and health conditions (HydroWorx, 2008). Aquatic training is used to effectively improve injured athletes, older populations, autism, obesity, cerebral palsy, adapted swim skills, aquatic swim skills, and other conditions. Although aquatic training may not improve these problems completely, it promotes normal tone, strength, increased mobility and flexibility, and improved proprioceptive and sensory stimulation.

Basic Aquatic/Safety Certificates

The risks of aquatic rehabilitation, fitness, and training exercises are minimal; however, it is important for Aquatic Rehabilitation, Fitness, and Training Professionals to have basic aquatic and safety certificates. Aquatic professionals need to realize the importance of obtaining necessary safety certificates. Many trained professionals forget that the number one primary risk of any aquatic exercise is drowning. In 2005, males were four times more likely than females to die from unintentional drowning in the United States (Centers for Disease Control [CDC], 2008). In 2005, the Centers for Disease Control and Prevention stated that 30% of children 1- 4 years old died from drowning (CDC, 2009a). Although drowning rates have slowly declined, fatal drowning remains the second-leading cause of unintentional injury-related death for children ages 1 to 14 years (CDC, 2008).

According to the American Red Cross, the three most prevalent causes of drowning in pool are (1) hazardous conditions and practices, such as diving in shallow water; (2) inability to get out of dangerous situations; and (3) lack of knowledge about the safest ways to aid a drowning person (Ford & Lachocki, 2004). Training in basic

water safety skills and can prevent drowning and inform aquatic specialists of prevention tactics.

A secondary risk of exercising in water, whether therapeutic or aerobic, is over-exertion (United States Water Fitness Association [USWFA], 2007). Due to water properties such as buoyancy, temperature, hydrostatic pressure, viscosity, and turbulence, many individuals do not recognize the level of intensity being exerted and therefore become exhausted, dehydrated, and dizzy. It is important that any individual working on fitness in the water with clients be certified in aquatic safety and fitness.

Industry Specific

In aquatic therapy, the potential for harm to the consumer is relatively high, whereas in aquatic fitness, the potential for harm to the consumer is relatively low (Norton & Jamison, 2000). In 1999, the Aquatic Therapy and Rehab Institute (ATRI) began offering the “aquatic therapy and rehab industry (ATRI) practitioner” certification (Aquatic Therapy & Rehab Institute [ATRI], 1994a). The ATRI certification process, which is open to healthcare providers and laypersons with life experience, does not extend legal authorization or protection to practice aquatic therapy. According to ATRI, individuals should not believe that they will become “certified aquatic therapists” capable of practicing after sitting for this certification. To date, the ATRI certification has not received accreditation from the National Organization for Competency Assurances (NOCA) National Commission for Certifying Agencies (National Organization for Competency Assurances [NOCA], 2010).

Summary

The benefits and risks of aquatic rehabilitation, fitness, and training are numerous and those practicing aquatic principles and techniques should acquire appropriate competencies. As indicated by Broach & Dattilo (2000) aquatic therapy can result in physical, psychological, and improved leisure functioning for individuals with disabilities, as well as the general public (Broach & Datillo, 1996). Currently, however, there is no published documentation on the profile of aquatic rehabilitation, fitness, and training professionals practicing aquatic therapy as an identified intervention.

Aquatic rehabilitation education most typically comes after graduation when professionals or para-professionals participate in extracurricular conferences and workshops. The Aquatic Therapy & Rehab Institute (1994a) offers a certification program for certified therapists. Other educational opportunities are offered by discipline-specific organizations, such as the American Therapeutic Recreation Association (ATRA) and the American Physical Therapy Association (APTA), two professional disciplines that host aquatic specialty workshops.

Based on the review of the literature within this chapter, it is obvious that the role of aquatic rehabilitation, fitness, and training principles and techniques is expanding. It becomes comprehensible the lack of clear role delineation among the multiple disciplines that provide aquatic services creates confusion among consumers, aquatic professionals, and third-party payers.

It is important for the purpose of this research paper to identify and describe the current profile of aquatic rehabilitation, fitness, and training professionals. In the past two decades, aquatic rehabilitation has become a diverse multidisciplinary field. Each

aquatic practitioner's role in the world of water has not been clearly defined, and each individual holds a different job description, works with different populations, and possesses different preparation and training. The difference in each practitioner's aquatic niche and educational background needs to be described for the consumer and agency provider. The outline and methods of the proposed research study will be described in the next chapter.

CHAPTER III: METHODOLOGY

Introduction

The following chapter will present the methodology used in this research project.

The research methodology was designed to address the research questions examined in the study. Participant selection and setting are also discussed. Finally, a description of the instruments and the data collection procedures are explained.

Research Review

As discussed in the review of the literature, it is clear that there are no published descriptive studies on the current profile of aquatic rehabilitation, fitness, and training practitioners found in the literature. Given industry statistics, the role of aquatic rehabilitation treatment and the industry it supports are expanding. There are numerous benefits to aquatic rehabilitation, fitness, and training that may result in improved physical and psychological functioning, aquatic skills, and quality of life. Many therapists believe water can “create an environment for exercise that is more conducive to achieving treatment goals than exercise on land” (Broach & Dattilo, 2000, p. 76).

Individuals with educational backgrounds in aquatic exercise, athletic training, exercise physiology, kinesiology, massage therapy, occupational therapy, physical therapy, and recreational therapy all perform interventions under their own discipline’s scope of practice. Most of these individuals obtain aquatic educational opportunities after graduation and/or partake in extracurricular workshops and conferences. With such a diverse group of aquatic practitioners, it is important to define current profiles of this multiple disciplinary field. The results may assist in reducing confusion among

professionals, consumers, and third-party payers.

This study was designed to identify and describe the current profile of aquatic rehabilitation, fitness, and training practitioners, including aquatic therapy certifications, settings, and populations served from the membership roles of two different aquatic therapy organizations' listservs. Therefore, a cluster sample was performed. The study was designed to identify and describe the current profile of individuals who are members of these two clusters: (1) Aquatic Resource Network (ARN) and (2) the Aquatic Therapy and Rehab Institute (ATRI). Both clusters target a population who presents themselves as aquatic rehabilitation, fitness, and training practitioners performing aquatic related services. The results offer a description of individuals within these networks who are practicing aquatic rehabilitation, fitness, and training.

Research Questions

The four research questions explored in this study were:

- RQ1. What is the profile of aquatic rehabilitation, fitness, and training practitioners who are registered with the online organization Aquatic Resource Network (ARN) and Aquatic Therapy & Rehab Institute (ATRI)?
- RQ2. What types of facility, intervention instructional formats, diagnostic related classes and specific diagnostic related groups reflect aquatic rehabilitation, fitness, and training practice as reported by those members of Aquatic Resource Network (ARN) & Aquatic Therapy & Rehab Institute (ATRI)?

- RQ3. What are the potential determinants of continuing professional development for aquatic rehabilitation, fitness, and training practitioners?
- RQ4. What influence does membership in aquatic rehabilitation, fitness, and training organizations have on the number of certifications that aquatic practitioners hold?
- RQ5. Does the number of years of practice influence the number of total certifications which aquatic rehabilitation, fitness, and training practitioners pursue?

Agency and Institution Approval

This study was reviewed and approved by the University and Medical Center Institutional Review Board on September 3, 2009 and October 20, 2009 (see Appendices A and B). Along with East Carolina University Institutional Review Board approval, data collection site approval was gained via a letter of approval from both the Aquatic Resource Network and Aquatic Therapy & Rehab Institute on Monday October 5th, 2009. See Appendices C and D for agency letters of support.

Research Setting

Nationally, there are two organizations that present themselves as educational and informational organizations dedicated to the professional development of aquatic rehabilitation, fitness, and training practitioners (ARN, 1997; ATRI, 1994b). These two organizations are known as Aquatic Resources Network (ARN) and the Aquatic Therapy & Rehab Institute, Inc. (ATRI). These organizations have nearly fifteen thousand members with different educational and demographical backgrounds (ARN, 1997; ATRI, 1994b). ARN claims a membership of over 5,000 members (ARN, 1997), while ATRI

has 888 current members (Angie Fisher, personal communication, September, 14th, 2009). For this research study, electronic questionnaires were sent to individuals who are registered with the ATRI and ARN organizations.

Population and Sample

Obtaining Consent

Participants for this study were recruited through the registrants of the Aquatic Therapy and Rehab Institute (ATRI) and Aquatic Resources Network (ARN) organizations (Appendices C and D). More specifically, ATRI and ARN were asked to disseminate an email to the online registrants explaining the purpose of the study and soliciting volunteers. The disseminated email (Appendix E) contained information explaining the purpose and objectives of the study, and directions for completion of the survey questionnaire. Participants willing to participate in the study were able to access the Perseus survey website questionnaire via an electronic link located at the bottom of the email. Language included a statement that participation was an acknowledgement of consent and contact information for the principal investigator, faculty supervisor, and IRB reporting information. The principal investigator, with input from the faculty supervisor, was responsible for responding to any emails containing any questions about the research study.

For this study, all responses were anonymous as the primary investigator did not have access to membership records or membership contact information from either ARN or ATRI organizations. By using the electronic survey tool to collect responses participants who chose to take part in the survey remained anonymous.

Data collection took place over four weeks. Once data collection was complete, the survey results were transferred from Perseus to SPSS version 17.0, and an individual automatic selected identification number was used within SPSS as a tracking technique. This approach further ensured the confidentiality of participants. The identification number was used in lieu of a participant's name and/or email address, protecting the anonymity and confidentiality of the participants.

Participants

The individuals proposed to receive the survey link and information about the study from the Aquatic Therapy and Rehab Institute (ATRI) and Aquatic Resources Network (ARN) organizations were estimated to be 5,888. Since the projected number of participants to be enrolled in this research study was between 5,000-6,000 individuals, the recommended target response was estimated between 357-361 (Patten, 2003, p. 137).

In order for individuals to participate in the study, identified consent was required. Therefore, when a participant clicked on the electronic link to the survey a consent page appeared (Appendix F). The consent page stated that participants who wish to participate in the study must meet the following selection criteria: (a) are 18 years old or older; (b) provide email consent stating that they were willing to participate in the research project, (c) consider themselves to practice aquatic rehabilitation, fitness, and/or training, and (d) are a member of either ATRI or ARN. If a participant agreed, he or she was asked to check the "I agree" box at the bottom. Once the box was checked the participant was allowed to move on to the Current Aquatic Rehabilitation, Fitness, and Training Practitioners Profile Survey (Appendix G).

Questionnaire Design

For the purposes of this study, a descriptive questionnaire consisting of 26 questions was designed. The questionnaire was validated for content validity via a jury of experts with knowledge in survey design and aquatics. A group of ten individuals served as a jury of experts. The group of ten experts were emailed the questionnaire and were asked to return the survey with suggestions to improve the survey's content validity and readability. Responses and written comments were reviewed and incorporated as needed into the final draft version of the questionnaire survey. The modifications made to the questionnaire were then resent to the jury of experts for a final draft review. Once all corrections and modifications were made to the survey, the researcher transferred survey questions into Perseus and a final test run of the online questionnaire survey was completed. The online Perseus questionnaire survey reflected consistency with the previous paper survey results. In addition, written feedback from the expert jury group was used to improve survey comprehension, readability, and time needed to complete the survey. The responses from draft forms of the questionnaire survey supported validity and reliability for the study. Individuals who participated as an expert jury were not excluded from the main study.

Variables

The Current Aquatic Rehabilitation, Fitness, and Training Practitioners Profile Survey (Appendix G) consisted of 26 questions and was divided into three sections: (a) demographic, (b) facility, and (c) aquatic therapy continuing professional development information. Each section focused on the establishment of a profile of aquatic rehabilitation, fitness, and training practitioners of the targeted organizations.

Demographic Information

Section one, *Demographics*, consisted of eighteen descriptive items. These questions ask a broad range of questions. Most of the descriptive information in this section required participants to place a check mark beside the answer that best fits their current demographic information, such as (a) participant gender, (b) age, (c) current aquatic organization memberships the participant belongs to, (d) highest diploma/degree a participant has completed, (e) participant's primary discipline profession, (f) credentialing in the profession, (g) ATRIC certification, (h) expired ATRIC certifications, (i) any current aquatic certificate/certification training courses a participant holds, (j) lapsed aquatic certificate/certifications reasoning, (k) does the participant work for public or private agencies, (l) how would the participant describe his/her primary agency, (m) the number of Aquatic Practitioners working at the participant's facility, (n) does the participant co-treat with other aquatic specialists, and (o) are the services the participant provides covered by third party payments. There were questions that allowed further written responses, such as (a) zip code, (b) job title, and (c) current credentialing agency. Questions seven to eighteen allowed the participant to fill in any missing information along with the opportunity to provide an explanation. These open-ended questions are included to provide clarity and depth to demographic information and maybe used as qualitative support data.

Facility Information

Section two of the questionnaire, *Facility Information*, consisted of four questions with multiple response options. These questions instructed the participant to check the answer, that best fits or all that applies to the description of the participant's aquatic facility. The focus of these four questions was to describe the types of aquatic facilities, the types of pools located in these facilities, and the community services/classes offered to the public in these facilities. These questions included: (a) pool options available at the participant's facility, (b) the type of pool a participant used most often when working with clients, (c) the types of community and group classes a participant's facility may offer, and (d) asked the participant to identify the type(s) of populations/conditions he/she might work with.

Aquatic Therapy Continuing Professional Development Information

The final section, *Aquatic Therapy Continuing Professional Development*, consisted of four short questions that require the participant to checkmark beside the answer that best fits or all that apply to the description of aquatic rehabilitation, fitness, and training practitioner's credentials. The focus of these questions were to identify (a) the organizations a participant used to obtain continuing education courses, (b) if the participant provided professional preparation in aquatic therapy, (c) had the participant taught any principles/practices at conferences or workshops, and (d) had the participant made any contributions to the aquatic therapy professional field via research.

Dillman Method

Maximum survey responses better describes the profile of aquatic rehabilitation, fitness, and/or training practitioners. In order to achieve maximum survey response, the

principal investigator followed Dillman's (2000) Tailored Design Method (TDM). The TDM was chosen as the methodology for its high survey return rate developed by Don Dillman in 1991. Table 1 below outlines the timeline of the mail-outs based on Dillman's (2000) TDM. Table 1 was retrieved from Fraze, Hardin, Brashears, Haygood, and Smith (2003).

Table 1

Timeline of Mail-outs: Based on Dillman's (2000) Tailored Design Method (TDM)

<i>Week</i>	<i>Procedure</i>
Week One	Pre-notice Letter
Week Two	Questionnaire Mail-out
Week Three	Postcard Thank you/Reminder
Week Four	Replacement Questionnaire
Week Five	Invoking Special Procedures

For the purpose of this study, the researcher followed the TDM. This study modified the TDM by sending the surveys through email instead of the recommended original mail-out research intention. Since the novelty of e-mail and web surveys inhibits the comprehensiveness of research on the effects of survey modes, the table (Table 1) was tailored for the population that is to be sampled. To help improve the comprehensiveness, the researcher followed the principles for constructing web surveys suggested by Dillman, Tortora, and Bowker (1998).

The following table is a list of the eleven principles recommended for web surveying by Dillman, Tortora, and Bowker (1998):

Table 2

Eleven Principles Recommended by Dillman, Tortora, and Bowker (1998)

<i>Principle</i>	<i>Description</i>
Principle 1	“Introduce the web questionnaire with a welcome screen that is motivational, emphasizes the ease of responding, and instructs respondents on the action needed for proceeding to the next page” (Dillman, Tortora, and Bowker, 1998, p.7).
Principle 2	“Begin the web questionnaire with a question that is fully visible on the first screen of the questionnaire, and will be easily comprehended and answered by all respondents” (Dillman, Tortora, and Bowker, 1998, p.8).
Principle 3	“Present each question in a conventional format similar to that normally used on paper questionnaires” (Dillman, Tortora, and Bowker, 1998, p.8).
Principle 4	“Limit line length to decrease the likelihood of a long line of prose being allowed to extend across the screen of the respondent’s browser” (Dillman, Tortora, and Bowker, 1998, p.9).
Principle 5	“Provide specific instructions on how to take each necessary computer action for responding to the questionnaire” (Dillman, Tortora, and Bowker, 1998, p.9).
Principle 6	“Provide computer operation instructions as part of each question where the action is to be taken, not in a separate section prior to the beginning of the questionnaire” (Dillman, Tortora, and Bowker, 1998, p.10).
Principle 7	“Do not require respondents to provide an answer to each question before being allowed to answer any subsequent ones” (Dillman, Tortora, and Bowker, 1998, p.11).
Principle 8	“Construct web questionnaires so that the scroll from question to question unless order effects are a major concern, large numbers of questions must be skipped, and/or a mixed-mode survey is being done for which telephone interview and web results will be combined” (Dillman, Tortora, and Bowker, 1998, p.11).
Principle 9	“When the number of answer choices exceeds the number that can be displayed on one screen, consider double-banking with appropriate navigational instructions being added” (Dillman,

	Tortora, and Bowker, 1998, p.12).
Principle 10	“Use graphical symbols or words that convey a sense of where the respondent is in the completion progress, but avoid ones that require advanced programming” (Dillman, Tortora, and Bowker, 1998, p.12).
Principle 11	“Be cautious about using question structures that have known measurement problems on paper questionnaires, e.g., check-all-that-apply and open-ended questions” (Dillman, Tortora, and Bowker, 1998, p.13).

Data Collection

The data collection procedure followed the Dillman (2000) Tailored Design Method for e-mail and internet questionnaire administration. Table 3 explains the contact methods and timing of the data collection which took place in the fall of 2009:

Table 3

Contact Methods and Timing: Based on Dillman's (2000) Tailored Design Method

<i>Week</i>	<i>Method of Contact</i>	<i>Date of Contact</i>
Week One	Pre-notice Letter	October 5, 2009
Week Two	Post Note to Organization's Message Board	October 12, 2009
Week Three	Thank You/Follow-up reminder	October 19, 2009
Week Four	Post Note to Organization's Message Board	October 26, 2009
Week Five	Survey Closes at Noon	November 2, 2009

In week one a pre-notice letter (Appendix C and Appendix D) was sent to the ATRI and ARN organizations. These organizations then disseminated an email to their membership explaining the primary investigator's intent for research.

Week Two, after the appearance of the initial mass email on listservs, the researcher sent an email or posted a note on the organization message board containing a brief description, purpose, objectives, and interests of the study (Appendix E). The message again asked for individuals to participate in the study and directed volunteers to the survey link located at the bottom of the message, see Appendix E.

Week Three, a thank you and reminder follow-up message was distributed to individuals on the listserv or posted on the organization's message board, (Appendix H) again thanking those individuals who took the time to answer the survey, along with asking individuals who had yet to participate in the study to please take part in the research study at his or her convenience.

Week Four consisted of the last attempt to send out and post a message to the organization's members (Appendix H); the message also included information about when the survey link would close.

Week Five the investigator closed the survey at noon. Special procedures did not take place. No special procedures were necessary for the electronic questionnaire. Thus, the entire data collection process took place over a four-week time frame.

The goal of the researcher was to obtain n= 357-361 responses (Patten, 2003). The number of questionnaire surveys being submitted on Perseus accurately reflected the actual number of participants in the research study. This number reflected the number of respondents who have completed the survey for inclusion in the study.

It is noted that voluntary acceptance to participate affected the sample size. The goal was to seek the highest percentage of return from the listservs.

Data Entry and Storage

All data was maintained in the Perseus online statistical program. Any emails exchanged between the Primary Research and potential subjects were placed in a folder through the Primary Researcher's email account and were deleted and completely erased from the emails memory two weeks after the study was complete. Data submitted in Perseus did not contain identifiers and all data will be deleted from the system after five years. The reporting of the data does not contain any identifiable information about the participants.

Subject privacy was maintained during recruitment, data collection, and data analysis. All data submitted on Perseus was maintained in the electronic account with restricted access. Data access was restricted to the PI and faculty supervisor. Data did not contain any personally identifying information, nor was there any illegal or embarrassing information included in the study. Data will be deleted after five years.

Data Analysis

Research was conducted in the month of October 2009. For the purpose of this descriptive research study, the PI collected data through the online survey program known as Perseus. Perseus provided an inexpensive and appropriate mechanism to complete questionnaire research. After week five the principal investigator closed the survey, deactivating the survey link from Perseus. Data was transferred into SPSS version 17.0. Descriptive data analysis techniques within SPSS were employed. Descriptive statistics were generated from each question within the demographic information section, facility section, and continuing professional development section of

the survey. Then responses from the survey and initial interpretations were compared to other described information gathered from other demographic perceptions.

Conclusion

The purpose of this research study was to draw conclusions about the differences in aquatic rehabilitation, fitness, and training practitioners' aquatic niche and educational backgrounds. Due to the ever expanding and undefined field of aquatic rehabilitation, fitness, and training, it was important to identify and describe the current profile of aquatic practitioners. In the past two decades, aquatic rehabilitation, fitness, and training has become a diverse multidisciplinary field (Norton & Jamison, 2000). An aquatic program is often the ideal intervention for those with disabilities and rehabilitation needs as well as members of the general population (Lepore, Gayle, & Stevens, 2007). However, each aquatic practitioner's role in the world of water has not been clearly defined, and each individual holds a different job description, works with different populations, and possesses different preparation and training. This study helped define and describe current profile of aquatic rehabilitation, fitness, and training practitioners and helped define current educational areas lacking in the field of aquatic therapy.

Benefits to the implementation of this research project center around the generation of information on the profile of aquatic rehabilitation, fitness, and/or training personnel. Currently, this information is very limited or non-existent. Success of this research study will assist in identifying professional disciplines engaged in the delivery of aquatic rehabilitation, fitness, and/or training services. The identification and description of current aquatic rehabilitation, fitness, and/or training practitioners may help expand aquatic program services being offered nationally. The information may also offer

benefits to the consumers of aquatic rehabilitation, fitness, and/or training services by identifying the dominant professional credentials of individuals practicing in the industry.

CHAPTER IV: RESULTS

This chapter contains descriptive statistics of the aquatic rehabilitation, fitness, and training professionals. The purpose of this study was to identify the current profile of members of the Aquatic Therapy and Rehab Institute (ATRI) and Aquatic Resource Network (ARN) who presented themselves as aquatic rehabilitation, fitness, and training professionals, and who performed aquatic intervention services. Five research questions were posed to examine relationships between the professional profile of respondents of the two aquatic organizations and the types of credentialing, settings, population groups, and services provided.

Sample Description

A total of 5,888 respondents with electronic access to either ATRI or ARN electronic listservs or newsletters received a link to the electronic survey site. Data were collected electronically over a four-week period. There were 180 individuals who responded and met the following criteria: (a) were 18 years old or older; (b) provided email consent stating that they are willing to participate in the research project, (c) considered themselves professionals who practiced aquatic rehabilitation, fitness, and/or training, and (d) were a member or on the email distribution list of either ATRI or ARN. A response rate of 3% was achieved from the 5,888 surveys sent out to the two aquatic organizations. Attempts were made utilizing a modified Dillman approach to secure responses to achieve the recommended target response rate estimated between 357-361 (median = 359) (Patten, 2003).

From the 199 responses, 180 were usable; 19 of the respondents may have met the required criteria and checked the “I agree” button but did not complete the survey. The

nineteen surveys were excluded from the study due to missing data. A resultant response rate of 50% of the targeted 359 responses was achieved (n = 180).

Description of Participants

Of the 180 responses, 100 responses were received from the Aquatic Therapy and Rehab Institute (ATRI) survey link and 80 responses were from Aquatic Resource Network (ARN) survey link.

RQ1. What is the profile of Aquatic Rehabilitation, Fitness, and Training Practitioners who are registered with the online organization Aquatic Resource Network (ARN) and Aquatic Therapy and Rehab Institute (ATRI)?

RQ1 sought to describe the professional profile of those individuals practicing aquatic rehabilitation, fitness, and training from the respondents of the two electronic aquatic organizations: Aquatic Resource Network (ARN) and the Aquatic Therapy and Rehab Institute (ATRI). Of the 180 usable responses 80 responses were received from the Aquatic Resource Network, and 100 responses were received from the Aquatic Therapy and Rehab Institute (ATRI) survey link.

Demographic variables included age range, gender, and current aquatic organization memberships. Age characteristics were gathered using age ranges, thus no true mean could be calculated. However, 55.5% of the total study respondents were over the age of 46. Age status of those aquatic rehabilitation, fitness, and training practitioner respondents within aquatic organizations are presented in Table 4.

Table 4

Age Status of those Aquatic Rehabilitation, Fitness, and Training Practitioners

Age Status of those Aquatic Rehabilitation, Fitness, and Training Practitioners			
Age Range	Total N (%)	ARN N (%)	ATRI N (%)
46-55	55 (30.5%)	26 (32.5%)	29 (29.0%)
Over 55	45 (25.0%)	17 (21.3%)	28 (28.0%)
36-45	34 (18.8%)	17 (21.3%)	17 (17.0%)
26-35	25 (13.8%)	12 (15.0%)	13 (13.0%)
18-25	9 (5.0%)	1 (1.3%)	8 (8.0%)
Not Answered	7 (3.8%)	2 (2.5%)	5 (5.0%)
Missing	5 (2.7%)	5 (6.3%)	0 (0%)
Total	180 (100%)	80 (100%)	100 (100%)

Gender composition of respondents included 142 females, which is 78.8% of the sample. Eighteen of the respondents are male making up for 10.0% of the sample and 20 respondents 11.1% did not indicate a gender. See Table 5 below.

Table 5

Gender Status of those Aquatic Rehabilitation, Fitness, and Training Practitioners

Gender Status of those Aquatic Rehabilitation, Fitness, and Training Practitioners			
Gender	Total N (%)	ARN N (%)	ATRI N (%)
Female	142 (78.8%)	66 (82.5%)	76 (76.0%)
Male	18 (10.0%)	7 (8.8%)	11 (11.0%)
Missing	20 (11.1%)	7 (8.8%)	13 (13.0%)
Total	180 (100%)	80 (100%)	100 (100%)

Responses from 148 respondents (82.2%) affirmed that they currently perform aquatic interventions with clients (see Table 6). When evaluating the number of years of practice within the aquatic field, 52% of the respondents replied having less than 15 years of practice (Table 7).

Table 6

Aquatic Intervention Status of those Aquatic Rehabilitation, Fitness, and Training Practitioners Currently Performing Aquatic Services

Aquatic Intervention Status of those Aquatic Rehabilitation, Fitness, and Training Practitioners Currently Performing Aquatic Services			
	Total N (%)	ARN N (%)	ATRI N (%)
Yes	148 (82.2%)	68 (85.0%)	80 (80.0%)
No	11 (6.1%)	5 (6.3%)	6 (6.0%)
Missing	21 (11.6%)	7 (8.7%)	14 (14.0%)
Total	180 (100%)	80 (100%)	100 (100%)

Table 7

The Number of Years of Practice within the Aquatic Field by those Aquatic Rehabilitation, Fitness, and Training Practitioners

The Number of Years of Practice within the Aquatic Field by those Aquatic Rehabilitation, Fitness, and Training Practitioners			
Years	Total N (%)	ARN N (%)	ATRI N (%)
6-10 years	34 (18.8%)	17 (21.3%)	17 (17.0%)
16-20 years	33 (18.3%)	20 (25.0%)	13 (13.0%)
Less than 5 years	32 (17.7%)	14 (17.5%)	18 (18.0%)
11-15 years	28 (15.5%)	14 (17.5%)	14 (14.0%)
21-25 years	12 (6.6%)	1 (1.3%)	11 (11.0%)
26-30 years	7 (3.8%)	2 (2.5%)	5 (5.0%)
31-35 years	7 (3.8%)	1 (1.3%)	6 (6.0%)
36-40 years	3 (1.6%)	2 (2.5%)	1 (1.0%)
Over 41 years	4 (2.2%)	2 (2.5%)	2 (2.0%)
Missing	20 (11.1%)	7 (8.7%)	13 (13.0%)
Total	180 (100%)	80 (100%)	100 (100%)

From these 180 responses and as described in Table 8, 16.1% held a membership with Aquatic Resources Network (ARN), and 21.6% of respondents held a membership with Aquatic Therapy and Rehab Institute (ATRI). Twenty-one percent (21.6%) identified membership in both organizations while 29.4% of respondents were not members of either.

Table 8

Membership Status of Aquatic Rehabilitation, Fitness, and Training Practitioners

Membership Status of Aquatic Rehabilitation, Fitness, and Training Practitioners			
	Total	ARN	ATRI
Membership Status	N (%)	N (%)	N (%)
Neither	53 (29.4%)	24 (30.0%)	29 (29.0%)
Both	39 (21.6%)	15 (18.8%)	24 (24.0%)
Aquatic Therapy & Rehab Institute (ATRI)	39 (21.6%)	7 (8.8%)	32 (32.0%)
Aquatic Resource Network (ARN)	29 (16.1%)	27 (33.8%)	2 (2.0%)
Missing	20 (11.3%)	7 (8.8%)	13 (13.0%)
Total	180 (100%)	80 (100%)	100 (100%)

Respondents were asked to describe their job title. From the completed surveys, the principal investigator implemented a manual record to analyze and record the written responses respondents defined as their current job title. A majority of written responses identified that most of the respondents had a job title of a Physical Therapist or Physical Therapy assistant, the director or manager of an aquatic therapy program, aquatic group fitness/exercise instructor, or an aquatic therapy instructor specialist. Table 9 indicates the described the job titles and the number of similar written responses.

Table 9

Current Aquatic Related Job Titles as Listed from Respondents

Current Aquatic Related Job Titles as Listed from Respondents			
Job Title	Total N and (%)	ARN N and (%)	ATRI N and (%)
Physical Therapist	27 (15%)	17 (21.2%)	10 (10.0%)
Physical Therapist Assistant	27 (15%)	17 (21.2%)	10 (10.0%)
Group Aquatic Exercise Instructor	24 (13.3%)	4 (5.0%)	20 (20.0%)
Aquatic Therapy Instructor/Specialist	14 (7.7%)	6 (7.5%)	8 (8.0%)
Director of Aquatic Therapy/Programming	12 (6.6%)	4 (5.0%)	8 (8.0%)
Owner	8 (4.4%)	7 (8.7%)	1 (1.0%)
Program Coordinator/Manager	8 (4.4%)	1 (1.2%)	7 (7.0%)
Occupational Therapist	7 (3.8%)	3 (3.7%)	4 (4.0%)
Watsu®/Bodywork Practitioner	7 (3.8%)	3 (3.7%)	4 (4.0%)
Aquatic Personal Trainer	5 (2.7%)	2 (2.5%)	3 (3.0%)
Recreational Therapist	4 (2.2%)	3 (3.7%)	1 (1.0%)
Adapted Physical Education Teacher	3 (1.6%)	2 (2.5%)	1 (1.0%)
Kinesiologist	3 (1.6%)	2 (2.5%)	1 (1.0%)
Rehab Tech	3 (1.6%)	0 (0%)	3 (3.0%)
Aquatic Trainer	2 (1.1%)	0 (0%)	2 (2.0%)
ATRIC Certified	1 (0.05%)	1 (1.2%)	0 (0%)
Holistic Health Care Practitioner	1 (0.05%)	0 (0%)	1 (1.0%)
Contractor	1 (0.05%)	0 (0%)	1 (1.0%)
Fitness Consultant	1 (0.05%)	0 (0%)	1 (1.0%)
Lifeguard	1 (0.05%)	0 (0%)	1 (1.0%)
Pool Tech	1 (0.05%)	0 (0%)	1 (1.0%)
Occupational Therapist Assistant	1 (0.05%)	1 (1.2%)	0 (0%)
Student	1 (0.05%)	0 (0%)	1 (1.0%)
Blank Responses	19 (10.5%)	4 (5.0%)	15 (15.0%)

Note. All responses were manually recorded from entries listed within the SPSS 17.0 Data View.

A sociodemographic query asked the education levels of respondents. Of the completed surveys, 180 respondents answered questions related to their highest education level completed. Table 10 describes the frequency and percentages of survey respondents' educational levels. The highest percentages of respondents who performed aquatic interventions held a bachelor's degree (37.2%). The second largest percentage of respondents (25.5%) reported a Masters' degree, and (15.5%) reported an Associate

degree. Only eight respondents (2.7%) reported a high school education or less. Table 10 identifies the educational status of those respondents practicing aquatic rehabilitation, fitness, and training.

Table 10

Educational Status of those Aquatic Rehabilitation, Fitness, and Training Practitioners

Educational Status of those Aquatic Rehabilitation, Fitness, and Training Practitioners			
Educational Status	Total N (%)	ARN N (%)	ATRI N (%)
Bachelor	67 (37.2%)	31 (38.8%)	36 (36.0%)
Masters	46 (25.5%)	24 (30.0%)	22 (22.0%)
Associate	28 (15.5%)	11 (13.8%)	17 (17.0%)
Doctorate	11 (6.1%)	5 (6.3%)	6 (6.0%)
High School	5 (2.7%)	2 (2.5%)	3 (3.0%)
No-degree	3 (1.6%)	2 (2.5%)	1 (1.0%)
Missing	20 (11.1%)	5 (6.3%)	15 (15.0%)
Total	180 (100%)	80 (100%)	100 (100%)

Within the Current Aquatic Rehabilitation, Fitness, and Training Practitioners Profile Survey (Appendix G) question number 7 asked respondents to record the name of the school/college/or university of their highest degree. These answers ranged from national to international academic levels. However, there were no recurring patterns between any of the schools/colleges/or university answers.

Table 11 represents the primary discipline and professional credentialing of aquatic rehabilitation, fitness, and training practitioners. As Table 9 indicates, 38.3% of respondents indicated Physical Therapy as their educational background and primary profession. Recreational Therapy credentialing was the second largest percentage of respondents (7.2%). Of all respondents 65% (n=117) responded yes to being currently credentialed in their respective discipline or profession (Table 12). Table 11 indicates that 36 respondents (20.0%) held professional backgrounds other than those listed on the

survey. Even though respondents identified a specific discipline/professional background, it may not adequately reflect a respondent's current job description within the aquatic field.

Table 11

Primary Background/Discipline Status of Aquatic Rehabilitation, Fitness, and Training Practitioners

Primary Background/Discipline Status of Aquatic Rehabilitation, Fitness, and Training Practitioners			
	Total N (%)	ARN N (%)	ATRI N (%)
Physical Therapy	69 (38.3%)	46 (57.5%)	23 (23.0%)
Recreational Therapy	13 (7.2%)	5 (6.3%)	8 (8.0%)
Exercise Science	11 (6.1%)	4 (5.0%)	7 (7.0%)
Education	11 (6.1%)	2 (2.5%)	9 (9.0%)
Occupational Therapy	9 (5.0%)	3 (3.8%)	6 (6.0%)
Personal Training	7 (3.8%)	2 (2.5%)	5 (5.0%)
Not Applicable (no professional training)	2 (1.1%)	1 (1.3%)	1 (1.0%)
Other	36 (20.0%)	10 (12.5%)	26 (26.0%)
Missing	22 (12.2%)	7 (8.7%)	15 (15.0%)
Total	180 (100%)	80 (100%)	100 (100%)

Note. Respondents were asked to select the background of his or her primary discipline profession; these numbers may not adequately reflect the same field as a respondents' current job status within Table 6.

Table 12

Credentialed in the Profession as Recorded by Respondents

Credentialed in the Profession as Recorded by Respondents			
Credentials Status	Total N (%)	ARN N (%)	ATRI N (%)
Yes	117 (65.0%)	63 (78.8%)	54 (54.0%)
No, Not Applicable	26 (14.4%)	6 (7.5%)	20 (20.0%)
No	16 (8.8%)	4 (5.0%)	12 (12.0%)
Yes State Licensed	88 (48.8%)	51 (63.7%)	37 (37.0%)
Yes Nationally Credentialed	49 (27.2%)	19 (23.8%)	30 (30.0%)
Missing	21 (11.6%)	7 (8.75%)	14 (14.0%)
Total	180 (100%)	80 (100%)	100 (100%)

From the 180 completed surveys, 154 respondents answered the question, "Is aquatic therapy, fitness, and training the primary or secondary source of income". The highest percentage of respondents (61.6%) reported that their identified discipline is their primary source of income. The second largest percentage of respondents (20%) indicated it was their secondary source of income, and 33 respondents (18.3%) selected that it was neither the primary nor secondary source of income. Table 13 identifies the income status of those respondents practicing aquatic rehabilitation, fitness, and training.

Table 13

Aquatic Rehabilitation, Fitness, and Training Practitioners Income Status

Aquatic Rehabilitation, Fitness, and Training Practitioners Income Status			
Income Status	Total N (%)	ARN N (%)	ATRI N (%)
Primary	111 (61.6%)	56 (70.0%)	55 (55.0%)
Secondary	36 (20.0%)	13 (16.3%)	23 (23.0%)
Other	33 (18.3%)	11 (13.7%)	22 (22.0%)
Total	180 (100%)	80 (100%)	100 (100%)

Table 14 describes the profile of survey respondents as it relates to the Aquatic Therapy and Rehab Institute Certification (ATRIC) credential (ATRI, 1994a). From these responses, 58.3% of respondents do not currently hold ATRIC, and 68.3% have never had the ATRIC credentials. Table 14 identifies responses from the question which asked participants if an individual had previously held ATRIC certification but let it expire; 15% of respondents (n=27) indicated that they have let their certification lapse. Table 14 identifies the ATRIC status of those respondents practicing aquatic rehabilitation, fitness, and training.

Table 14

ATRIC Credentialing Status of Respondents

ATRIC Credentialing Status of Respondents			
ATRIC Current Status	Total N (%)	ARN N (%)	ATRI N (%)
No, I don't currently hold it	105 (58.3%)	52 (65.0%)	53 (53.0%)
Yes, I currently hold it	52 (28.8%)	21 (26.3%)	31 (31.0%)
ATRIC Lapsed Status			
No, I have not previously held it	123 (68.3%)	54 (67.5%)	69 (69%)
Yes, I previously held it but it expired	27 (15.0%)	17 (21.3%)	10 (10%)
Missing	23 (12.7%)	7 (8.7%)	16 (16.0%)
Total	180 (100%)	80 (100%)	100 (100%)

Table 15 indicates the reasons for lapsed ATRIC certification respondents reported. As indicated, the highest percentage of respondents (8.8%) reported other unlisted reasons for lapsed certification. The second largest percentage of respondents (5%) identified that their facility did not require it. Other respondents (3.8%) selected that the ATRIC certification did not have any relevance to the respondent's current practice. Three percent (3.3%) of respondents allowed the ATRIC certification to lapse due to monetary expenses.

Table 15

Reasoning for Lapsed Certification as Reported by Respondents

Reasoning for Lapsed Certification as Reported by Respondents			
Reason for Lapsed Certification	Total N (%)	ARN N (%)	ATRI N (%)
My Facility does not require it	9 (5.0%)	6 (7.5%)	3 (3.0%)
Relevance to current practice	7 (3.8%)	4 (4.0%)	3 (3.0%)
Monetary expenses	6 (3.3%)	3 (3.8%)	3 (3.0%)
Couldn't keep up the continuing education units	4 (2.2%)	2 (2.5%)	2 (2.0%)
Time restrictions	1 (0.5%)	1 (1.3%)	0 (0%)
Other	16 (8.8%)	8 (10.0%)	8 (8.0%)
Missing	137 (76.1%)	56 (70.0%)	81 (81.0%)
Total	180 (100%)	80 (100%)	100 (100%)

From the Current Aquatic Rehabilitation, Fitness, and Training Practitioners Profile survey (Appendix G), question 16 asked “Including yourself, how many Aquatic Rehabilitation, Fitness, and Training Practitioners work at your facility?” Table 16 describes the number of aquatic rehabilitation, fitness, and training practitioners working at a given facility. Twenty-two percent of respondents (n = 40) indicate one aquatic rehabilitation, fitness, and training practitioner working at a facility. From this question 42 respondents (23.3%) selected “Other”. From the “Other” category respondents (n = 34) identified the specific number of aquatic rehabilitation, fitness, and or training practitioners within a facility. These responses were manually recorded and examined. Of the 42 respondents (n = 42) the following responses were recorded: zero (n = 12), five (n = 6), six (n = 5), seven (n = 4), eight (n = 3), ten (n = 1), and fifteen (n = 3) as additional aquatic practitioners within a facility.

Table 16

Number of Aquatic Rehabilitation, Fitness, and Training Practitioners Working at a Facility

Number of Aquatic Rehabilitation, Fitness, and Training Practitioners Working at a Facility			
# Of Practitioners	Total N (%)	ARN N (%)	ATRI N (%)
1 Practitioner	40 (22.2%)	17 (21.3%)	23 (23.0%)
2 Practitioners	27 (15.0%)	14 (17.5%)	13 (13.0%)
3 Practitioners	19 (10.5%)	11 (13.8%)	8 (8.0%)
4 Practitioners	19 (10.5%)	8 (10.0%)	11 (11.0%)
Other	42 (23.3%)	19 (23.8%)	23 (23.0%)
Missing	33 (18.3%)	11 (13.8%)	22 (22.0%)
Total	180 (100%)	80 (100%)	100 (100%)

Table 17 addresses the use of co-treating with practitioners from other facilities. As identified, 67.7% of respondents recorded not co-treating with other aquatic rehabilitation, fitness, and training practitioners from other facilities.

Table 17

Respondents Responses to Co-Treating with Other Aquatic Rehabilitation, Fitness, and Training Practitioners

Respondents Responses to Co-Treating with Other Aquatic Rehabilitation, Fitness, and Training Practitioners			
Co-Treat	Total N (%)	ARN N (%)	ATRI N (%)
No	122 (67.7%)	59 (73.8%)	63 (63.0%)
Yes	22 (12.2%)	9 (11.3%)	13 (13.0%)
Missing	36 (20.0%)	12 (15.0%)	24 (24.0%)
Total	180 (100%)	80 (100%)	100 (100%)

Table 18 identifies the respondents' classification of the primary setting for performing aquatic intervention services. Respondents (20%) recorded working for community outpatient rehabilitation settings, and 12.2% of respondents selected that they work in a fitness/sports facility settings.

Table 18

Classification of Primary Aquatic Setting as Described by Aquatic Rehabilitation, Fitness, and Training Practitioners

Classification of Primary Aquatic Setting as Described by Aquatic Rehabilitation, Fitness, and Training Practitioners			
Primary Aquatic Setting	Total N (%)	ARN N (%)	ATRI N (%)
Community Outpatient Rehabilitation	36 (20.0%)	22 (27.5%)	14 (14.0%)
Fitness/Sports Facility	22 (12.2%)	8 (10.0%)	14 (14.0%)
Hospital	16 (8.8%)	9 (11.3%)	7 (7.0%)
Private Company	16 (8.8%)	9 (11.3%)	7 (7.0%)
Recreation Agency	10 (5.5%)	4 (5.5%)	6 (6.0%)
Inpatient Rehabilitation Center	7 (3.8%)	2 (2.5%)	5 (5.0%)
University/College	6 (3.3%)	2 (2.5%)	4 (4.0%)
Long-term Care	2 (1.1%)	1 (1.3%)	1 (1.0%)
Other	33 (18.3%)	11 (13.8%)	22 (22.0%)

Missing	32 (17.7%)	12 (15.0%)	20 (20.0%)
Total	180 (100%)	80 (100%)	100 (100%)

Table 19 classifies whether a respondent's aquatic rehabilitation, fitness, or training services provided are covered by third party payments. Recorded results identified 52.5% of ARN respondents provide aquatic rehabilitation, fitness, or training services, which, were covered by third party payment. Forty-eight percent (48.0%) of respondents from the ATRI membership indicated that services were not covered by third party payment. It is important to note that several respondents from ARN and ATRI, 15% and 23% respectively, did not respond to the question.

Table 19

Coverage of Aquatic Rehabilitation, Fitness, and Training Services Reimbursed by a Third Party

Coverage of Aquatic Rehabilitation, Fitness, and Training Services Reimbursed by a Third Party			
Coverage	Total N (%)	ARN N (%)	ATRI N (%)
No	82 (45.5%)	26 (32.5%)	56 (56.0%)
Yes	74 (41.1%)	42 (52.5%)	32 (32.0%)
Missing	24 (13.3%)	12 (15.0%)	12 (12.0%)
Total	180 (100%)	80 (100%)	100 (100%)

Aquatic Resource Network (ARN) and Aquatic Therapy & Rehab Institute (ATRI) respondents held certifications in many different aquatic courses. Table 20 demonstrates the percent of current certifications held by respondents from ARN and ATRI. Respondents from both ARN and ATRI indicated relatively similar percentages of certifications, training, and continuing educational levels within populations specific and the basic aquatic and safety certifications. Of the 180 respondents, percentages of current certifications, certificates, and training courses are identified in table 20.

Table 20

Certificates/Certifications/Training Courses Currently Held by Aquatic Rehabilitation, Fitness, and Training Practitioners from ARN and ATRI

Certificates/Certifications/Training Courses an Aquatic Rehabilitation, Fitness, and Training Practitioners from ARN and ATRI Currently Hold

	N and Total %	N and % from ARN	N and % from ATRI
Intervention Specific			
Watsu®	30 (16.6%)	17 (21.3%)	13 (13.0%)
Ai Chi	28 (15.5%)	9 (11.3%)	19 (19.0%)
PNF	26 (14.4%)	13 (16.3%)	13 (13.0%)
Backhab	25 (13.8%)	11 (13.8%)	14 (14.0%)
Bad Ragaz	22 (12.2%)	12 (15.0%)	10 (10.0%)
Halliwick	17 (9.4%)	13 (16.3%)	4 (4.0%)
Massage	15 (8.3%)	6 (7.5%)	9 (9.0%)
Burdenko	11 (6.1%)	6 (7.5%)	5 (5.0%)
Aqua Pilates	9 (5.0%)	2 (2.5%)	7 (7.0%)
Aqua-Pi-Yo-Chi	7 (3.8%)	4 (5.0%)	3 (3.0%)
Ai Chi Ne	6 (3.3%)	3 (3.8%)	3 (3.0%)
Aquatic Feldenkrais®	5 (2.8%)	4 (5.0%)	1 (1.0%)
Population Specific			
Arthritis	20 (16.1%)	7 (8.8%)	22 (22.0%)
Multiple Sclerosis	12 (6.6%)	3 (3.8%)	9 (9.0%)
ATRI Rheumatology	8 (4.4%)	2 (2.5%)	6 (6.0%)
Industry Specific			
The Aquatic Therapy & Rehab Institute (ATRI)	49 (27.2%)	17 (21.3%)	32 (32.0%)
The CALA Aquatic Post Rehabilitation Specialist	21 (11.6%)	9 (11.3%)	12 (12.0%)
Aquatic Fitness Specific			
Aquatic Exercise Association (AEA)	50 (27.7%)	17 (21.3%)	33 (33.0%)
WaterArt	6 (3.3%)	1 (1.3%)	5 (5.0%)
United States Water Fitness Association (USWFA)	3 (1.6%)	1 (1.3%)	2 (2.0%)
Adapted Aquatics Specific			
AAHPERD	5 (2.7%)	1 (1.3%)	4 (4.0%)
Special Olympics	5 (2.7%)	1 (1.3%)	4 (4.0%)
Certified Adaptive Aquatics Instructor	3 (1.6%)	1 (1.3%)	2 (2.0%)
Basic Aquatic/Safety Specific			

CPR	132 (73.3%)	58 (72.5%)	74 (74.0%)
First Aid	96 (53.3%)	42 (52.5%)	54 (54.0%)
The Professional Lifeguard	34 (18.8%)	12 (15.0%)	22 (22.0%)
Certified Pool Operator (CPO)	29 (16.1%)	16 (20.0%)	13 (13.0%)
Water Safety Instructor (WSI)	29 (16.1%)	9 (11.3%)	20 (20.0%)
ATRI Risk Awareness and Safety Training (RAST)	21 (11.6%)	9 (11.3%)	12 (12.0%)

Table 21 identifies the reasoning for any lapsed certification within the two aquatic organizations. Of the 80 Aquatic Resource Network (ARN) respondents recorded that they felt their primary reasons for allowing any previous certificates/certifications to expire had to do with relevance to current practice (56.2%) and time restrictions (51.2%). Respondents' ranked "very important" when dealing with relevance to current practice and "moderately important" on time restrictions when dealing with expired certificates and or certifications.

From the above certifications listed in table 20 of the Aquatic Therapy and Rehab Institute (ATRI) respondents recorded that they felt their primary reasons for allowing previous certificates/certifications to expire are listed below in Table 21. These identified reasons for lapsed certifications had to do with relevance to time restrictions (43.0%) and monetary expenses (42.0%). Respondents ranked "moderately important" on time restrictions when dealing with expired certificates/certifications and "moderately important" when dealing with monetary expenses.

Table 21

Reasoning for Lapsed Certifications as Recorded by Aquatic Rehabilitation, Fitness, and Training Practitioners

Reasoning for Lapsed Certifications as Recorded by Aquatic Rehabilitation, Fitness, and Training Practitioners			
Reason for Lapsed Certifications	Total N (%)	ARN N (%)	ATRI N (%)
Relevance to current practice:	85 (47.2%)	45 (56.2%)	40 (40.0%)
Not at all important	15 (8.3%)	7 (8.8%)	8 (8.0%)
Somewhat important	18 (10.0%)	7 (8.8%)	11 (11.0%)
Moderately important	20 (11.1%)	10 (12.5%)	10 (10.0%)
Very important	20 (11.1%)	13 (16.3%)	7 (7.0%)
Extremely Important	12 (6.6%)	8 (10.0%)	4 (4.0%)
Time Restrictions:	84 (46.6%)	41 (51.2%)	43 (43.0%)
Not at all important	18 (10.0%)	7 (8.8%)	11 (11.0%)
Somewhat important	15 (8.3%)	7 (8.8%)	8 (8.0%)
Moderately important	24 (13.3%)	14 (17.5%)	10 (10.0%)
Very important	18 (10.0%)	10 (12.5%)	8 (8.0%)
Extremely Important	9 (5.0%)	3 (3.8%)	6 (6.0%)
Monetary:	82 (45.5%)	40 (50.0%)	42 (42.0%)
Not at all important	17 (9.4%)	11 (13.8%)	6 (6.0%)
Somewhat important	17 (9.4%)	10 (12.5%)	7 (7.0%)
Moderately important	23 (12.7%)	10 (12.5%)	13 (13.0%)
Very important	16 (8.8%)	8 (10.0%)	8 (8.0%)
Extremely Important	9 (5.0%)	1 (1.3%)	8 (8.0%)
Other:	57 (31.6%)	16 (20.0%)	41 (41.0%)
Not at all important	20 (11.1%)	6 (7.5%)	14 (14.0%)
Somewhat important	4 (2.2%)	2 (2.5%)	2 (2.0%)
Moderately important	6 (3.3%)	3 (3.8%)	3 (3.0%)
Very important	16 (8.8%)	2 (2.5%)	14 (14.0%)
Extremely Important	11 (6.1%)	3 (3.8%)	8 (8.0%)

Data collected from both aquatic organization populations offered a better profile of aquatic rehabilitation, fitness, and training practitioners. Based on the information provided, a general sample description of respondents was formed.

RQ2. What types of facility, intervention instructional formats, diagnostic related classes and specific diagnostic related groups reflect aquatic rehabilitation, fitness, and training practice as reported by those members of Aquatic Resource Network (ARN) & Aquatic Therapy & Rehab Institute (ATRI)?

RQ2 seeks to describe aquatic facility information, intervention instructional formats, diagnostic related aquatic classes and specific diagnostic related groups in which these individuals practicing aquatic rehabilitation, fitness, and training provide to clients. The following reflects responses from survey questions 19-22 (see Appendix G).

Table 22 identifies the types of pools available at a respondent's primary aquatic work site. Respondents recorded their working facility to have therapy (46.1%), lap (26.1%), multipurpose (25.0%) and recreational (18.8%) pool options available at his/her primary aquatic work site. From a use perspective, most respondents (36.6%) selected using a Therapy Pool as the pool he/she used most often when working with a client (Table 23).

Table 22

Types of Pools Available at a Respondents Primary Aquatic Work Site

Type of Pool	Total N (%)	ARN N (%)	ATRI N (%)
Therapy Pool	83 (46.1%)	43 (53.8%)	40 (40.0%)
Lap Pool	47 (26.1%)	21 (26.3%)	26 (26.0%)
Multipurpose Pool	45 (25.0%)	17 (21.3%)	28 (28.0%)
Recreational Programming/Pool	34 (18.8%)	16 (20.0%)	18 (18.0%)
Thermal Plunge Pool	31 (17.2%)	13 (16.3%)	18 (18.0%)
Competitive Pool	27 (15.0%)	14 (17.5%)	13 (13.0%)
Polar Plunge Pool	19 (10.5%)	1 (1.3%)	18 (18.0%)
Spa Pool/Spool	18 (10.0%)	10 (12.5%)	8 (8.0%)
Play Pool	9 (5.0%)	4 (5.0%)	5 (5.0%)
Perimeter Overflow Pool	8 (4.4%)	3 (3.8%)	5 (5.0%)
Spring Board Diving Pool	5 (2.7%)	1 (1.3%)	4 (4.0%)
Freeform Pool	4 (2.2%)	1 (1.3%)	3 (3.0%)
HydroWorx Pool	4 (2.2%)	3 (3.8%)	1 (1.0%)
Geometric Pool	2 (1.1%)	1 (1.3%)	1 (1.0%)
Negative Edge Pool	2 (1.1%)	1 (1.3%)	1 (1.0%)
None, I do not work in a facility with a pool	3 (1.6%)	2 (2.5%)	1 (1.0%)
Other	17 (9.4%)	9 (11.3%)	8 (8.0%)

Table 23

Type of Pool Used Most Often When Working With Clients

Type of Pool Used Most Often When Working With Clients as Recorded by Respondents	Total N (%)	ARN N (%)	ATRI N (%)
Pool Type	Total N (%)	ARN N (%)	ATRI N (%)
Therapy Pool	66 (36.6%)	37 (46.3%)	29 (29.0%)
Multipurpose Pool	36 (20.0%)	14 (17.5%)	22 (22.0%)
Recreational Programming/Pool	13 (7.2%)	3 (3.8%)	10 (10.0%)
Lap Pool	7 (3.8%)	2 (2.5%)	5 (5.0%)
HydroWorx Pool	4 (2.2%)	3 (3.8%)	1 (1.0%)
College/University Competitive Pool	3 (1.6%)	2 (2.5%)	1 (1.0%)
Spa Pool/Spool	3 (1.6%)	1 (1.3%)	2 (2.0%)
Geometric Pool	2 (1.1%)	1 (1.3%)	1 (1.0%)
Perimeter Overflow Pool	2 (1.1%)	1 (1.3%)	1 (1.0%)
Other	8 (4.4%)	3 (3.8%)	5 (5.0%)
Missing	36 (20.0%)	13 (7.2%)	23 (23.0%)
Total	180 (100%)	80 (100%)	100 (100%)

Respondents were asked to identify the types of community and or group interventions/classes offered at the aquatic facility or work environment (e.g., Adaptive Aquatics Classes, Aquatic Therapy, Fitness/Personal Training, General Water Fitness, Swim Lessons). In addition, respondents were asked to identify the format of delivery (e.g., one-on-one, semi-private, small group classes, medium group classes, etc.).

From the respondents ($n = 159$) data was gathered to give a description of the types of classes offered by aquatic rehabilitation, fitness, and training practitioners. Of the respondents reporting, Adaptive Aquatic Classes was identified as the most frequently used format in one-on-one and small group. Table 24 identifies 28.8% of respondents offer adaptive aquatic classes with one-on-one private instruction and 21.1% of respondents offered adaptive aquatic classes within small group classes (one instructor and 4 – 8 clients).

Table 24

Adaptive Aquatic Classes Being Offered by Respondents

Adaptive Aquatic Classes Being Offered by Respondents			
	Total N (%)	ARN N (%)	ATRI N (%)
Types of Adaptive Aquatic Classes			
One-on-one private instruction	52 (28.8%)	18 (22.5%)	34 (34.0%)
Small group classes	38 (21.1%)	10 (12.5%)	28 (28.0%)
Semi-private	34 (18.8%)	9 (11.3%)	25 (25.0%)
Medium group classes	20 (11.1%)	6 (7.5%)	14 (14.0%)
Large group classes	14 (7.7%)	1 (1.3%)	13 (13.0%)
My facility does not offer this type of class	22 (12.2%)	13 (16.3%)	9 (9.0%)
Other	4 (2.2%)	1 (1.3%)	3 (3.0%)

Of the respondents reporting Aquatic Therapy Classes, the most frequently used format was one-on-one and semi-private instruction as displayed by Table 25. Respondents ($n = 109$) recorded working on aquatic therapy using one-on-one private

instruction (56.1%) and 24.4% of aquatic rehabilitation, fitness, and training professionals conduct semi-private aquatic therapy instruction. Only 9.4% of respondents consider themselves to practice aquatic therapy in large groups of nine clients or more.

Table 25

Aquatic Therapy Classes Being Offered by Respondents

Aquatic Therapy Classes Being Offered by Respondents			
	Total N (%)	ARN N (%)	ATRI N (%)
Types of Aquatic Therapy Classes			
One-on-one private instruction	101 (56.1%)	52 (65.0%)	49 (49.0%)
Semi-private	44 (24.4%)	23 (28.7%)	21 (21.0%)
Small group classes	22 (12.2%)	7 (8.8%)	15 (15.0%)
Large group classes	17 (9.4%)	13 (16.3%)	4 (4.0%)
Medium group classes	9 (5.0%)	4 (5.0%)	5 (5.0%)
My facility does not offer this type of class	9 (5.0%)	5 (6.3%)	4 (4.0%)
Other	19 (10.5%)	13 (16.3%)	6 (6.0%)

Aquatic fitness personal training is a new field where individuals can receive training certificates from water fitness organizations such as Aquatic Exercise Association (AEA) and the United States Water Fitness Association (USWFA) (AEA, 2006; USWFA, 2009). Of the respondents reporting aquatic fitness personal training classes, a one-on-one format was the most frequently identified approach. Thirty-six percent (36.1%) of respondents responded to performing aquatic fitness personal training services using one-one-one private instruction (Table 26). Respondents (n = 34) recorded that their facility did not offer this type of class to clients (Table 26).

Table 26

Aquatic Fitness Personal Training Classes Being Offered by Respondents

Aquatic Fitness Personal Training Classes Being Offered by Respondents			
Types of Aquatic Fitness/Personal Training Classes	Total N (%)	ARN N (%)	ATRI N (%)
One-on-one private instruction	65 (36.1%)	29 (36.3%)	36 (36.0%)
Semi-private	31 (17.2%)	12 (15.0%)	19 (19.0%)
Small group classes	20 (11.1%)	5 (6.3%)	15 (15.0%)
Medium group classes	14 (7.7%)	6 (7.5%)	8 (8.0%)
Large group classes	12 (6.6%)	3 (3.8%)	9 (9.0%)
My facility does not offer this type of class	34 (18.8%)	23 (28.7%)	11 (11.0%)
Other	14 (7.7%)	13 (16.3%)	1 (1.0%)

Of the respondents reporting Aquatic Swim Lesson classes, the most frequently used format was one-on-one and small group as displayed in Table 27. Of the respondents, 30% indicated that their facility offered aquatic swim lessons with one-on-one private instruction. Twenty-five percent of respondents identified offering small group classes, and 22.2% of respondents offer semi-private swim lessons. Only 6.1% of respondents offered large group aquatic swim lessons.

Table 27

Aquatic Swim Lessons Being Offered by Respondents

Aquatic Swim Lessons Being Offered by Respondents			
Types of Aquatic Swim Lessons	Total N (%)	ARN N (%)	ATRI N (%)
One-on-one private instruction	54 (30.0%)	20 (25.0%)	34 (34.0%)
Small group classes	45 (25.0%)	16 (20.0%)	29 (29.0%)
Semi-private	40 (22.2%)	13 (16.3%)	27 (27.0%)
Medium group classes	15 (8.3%)	6 (7.5%)	9 (9.0%)
Large group classes	11 (6.1%)	4 (5.0%)	7 (7.0%)
My facility does not offer this type of class	8 (4.4%)	4 (5.0%)	4 (4.0%)
Other	8 (4.4%)	3 (3.8%)	5 (5.0%)

General water fitness is most often offered at recreational and or fitness centers pools (USWFA, 2009). Of the respondents reporting general water fitness classes, the most frequently used format was medium and large groups (See Table 28). Of respondents, small group classes (23.8%), medium group classes (32.2%), or large group classes (25.5%) were the most dominate options. Twelve percent (12.2%) of respondents recorded that his or her facility did not offer any general water fitness classes.

Table 28

General Water Fitness Classes Being Offered by Respondents

General Water Fitness Classes Being Offered by Respondents	Total N (%)	ARN N (%)	ATRI N (%)
Types of General Water Fitness Classes			
Medium group classes	58 (32.2%)	24 (30.0%)	34 (34.0%)
Large group classes	46 (25.5%)	16 (20.0%)	30 (30.0%)
Small group classes	43 (23.8%)	15 (18.8%)	28 (28.0%)
One-on-one private instruction	35 (19.4%)	15 (18.8%)	20 (20.0%)
Semi-private	24 (13.3%)	8 (10.0%)	16 (16.0%)
My facility does not offer this type of class	22 (12.2%)	17 (21.3%)	5 (5.0%)
Other	3 (1.6%)	2 (2.5%)	1 (1.0%)

Respondents were asked to identify water fitness classes offered to specific age groups. Table 29 describes that 34.3% of respondents worked at a facility, that offers Adult (32.2%) or Adult Senior (33.8%) classes. Only 9.4% of respondents recorded offering programs for teenagers.

Table 29

Water Fitness Classes Being Offered to Specific Age Groups by Respondents

Water Fitness Classes Being Offered to Specific Age Groups by Respondents			
Specific Age Groups for Water Fitness Classes	Total N (%)	ARN N (%)	ATRI N (%)
Adult Senior	61 (33.8%)	24 (30.0%)	37 (37.0%)
Adult	58 (32.2%)	20 (25.0%)	38 (38.0%)
Infant/Toddler	21 (11.6%)	7 (8.8%)	14 (14.0%)
Children	20 (11.1%)	6 (7.5%)	14 (14.0%)
Youth	19 (10.5%)	7 (8.8%)	12 (12.0%)
Young Adult	18 (10.0%)	8 (10.0%)	10 (10.0%)
Teenager	17 (9.4%)	6 (7.5%)	11 (11.0%)
My facility does not offer this type of class	41 (22.7%)	25 (31.3%)	16 (16.0%)
Other	5 (2.7%)	2 (2.5%)	3 (3.0%)

Respondents (n = 159) were asked to identify the diagnostic treatment or specialty aquatic classes their facility may provide. Results are displayed in Table 30. Thirty-six percent of respondents (n = 66) selected that their facility offered arthritis based aquatic classes, 20.5% offered Fibromyalgia aquatic classes, and 16.6% offered Multiple Sclerosis classes. These three aquatic specialty classes were supported by specific aquatic certification training courses from their prospective diagnostic national organization. Other aquatic specialty classes being offered by a larger number of practitioners are Parkinson's (14.4%), Stroke (12.7%), Obesity (12.7%), and Relaxation (12.2%). Only 5.5% of respondents recorded that their facility did not offer any classes.

Table 30

Aquatic Classes Being Offered to a Diagnostic Treatment/Specialty Group by Respondents

Aquatic Classes Being Offered to a Diagnostic Treatment/Specialty Group by Respondents			
Diagnostic Treatment/Specialty Group	Total N (%)	ARN N (%)	ATRI N (%)
Arthritis	66 (36.6%)	27 (33.8%)	39 (39.0%)
Fibromyalgia	37 (20.5%)	16 (20.0%)	21 (21.0%)
Multiple Sclerosis	30 (16.6%)	10 (12.5%)	20 (20.0%)
Parkinson's	26 (14.4%)	13 (16.3%)	13 (13.0%)
Obesity	23 (12.7%)	11 (13.8%)	12 (12.0%)
Stroke	23 (12.7%)	12 (15.0%)	11 (11.0%)
Prenatal Water Exercise	22 (12.2%)	9 (11.3%)	13 (13.0%)
Relaxation	22 (12.2%)	9 (11.3%)	13 (13.0%)
Spinal Cord Injury	20 (11.1%)	10 (12.5%)	10 (10.0%)
Traumatic Brain Injury	18 (10.0%)	7 (8.8%)	11 (11.0%)
Cerebral Palsy	15 (8.3%)	6 (7.5%)	9 (9.0%)
Down Syndrome	15 (8.3%)	6 (7.5%)	9 (9.0%)
Autism	14 (7.7%)	5 (6.3%)	9 (9.0%)
Spina Bifida	14 (7.7%)	6 (7.5%)	8 (8.0%)
Muscular Dystrophy	13 (7.2%)	6 (7.5%)	7 (7.0%)
Respiratory Disorders	12 (6.6%)	6 (7.5%)	6 (6.0%)
Visual Impairments	12 (6.6%)	6 (7.5%)	6 (6.0%)
Learning Disabilities	11 (6.1%)	5 (6.3%)	6 (6.0%)
Mental Retardation	11 (6.1%)	5 (6.3%)	6 (6.0%)
Emotional Disturbance	10 (5.5%)	5 (6.3%)	5 (5.0%)
Deafness & Hard of Hearing	9 (5.0%)	4 (5.0%)	5 (5.0%)
Massage	9 (5.0%)	5 (6.3%)	4 (4.0%)
Mental Illness	8 (4.4%)	2 (2.5%)	6 (6.0%)
ADHD	7 (3.8%)	2 (2.5%)	5 (5.0%)
Epilepsy	7 (3.8%)	3 (3.8%)	4 (4.0%)
Fragile X Syndrome	6 (3.3%)	2 (2.5%)	4 (4.0%)
Cystic Fibrosis	4 (2.2%)	2 (2.5%)	2 (2.0%)
My Facility does not offer classes	10 (5.5%)	5 (6.3%)	5 (5.0%)
Other:	14 (7.7%)	7 (8.8%)	7 (7.0%)

The types of population's and condition's aquatic rehabilitation, fitness, and training practitioner's work with covers a wide range of diagnostic related groups.

Results are identified in Table 31. Sixty-four percent of respondents ($n = 116$) reported working with individuals with musculoskeletal conditions, 60.5% recorded working on Orthopedic Rehabilitation, and 55.5% work with Neurological Impairments. Very few respondents (7.2%) selected that they work Gynecologic patients or with individuals who have psychological disorders (10.5%). Table 31 reports the frequency and percent of the selected responses from aquatic practitioners.

Table 31

Aquatic Classes Being Offered to Different Populations/Conditions by Respondents

Aquatic Classes Being Offered to Different Populations/Conditions by Respondents			
Populations/Conditions	Total N and (%)	ARN N and (%)	ATRI N and (%)
Musculoskeletal Conditions	116 (64.4%)	56 (70.0%)	60 (60.0%)
Orthopedic Rehabilitation	109 (60.5%)	57 (71.3%)	52 (52.0%)
Neurological Impairments	100 (55.5%)	49 (61.3%)	51 (51.0%)
Athlete/Sports Injuries	84 (46.6%)	45 (56.3%)	39 (39.0%)
Obesity	82 (45.5%)	39 (48.8%)	43 (43.0%)
Stroke (CVA)	76 (42.2%)	38 (47.5%)	38 (38.0%)
Cardiovascular Disease	71 (39.4%)	30 (37.5%)	41 (41.0%)
Brain Injury	65 (36.1%)	31 (38.8%)	34 (34.0%)
Rheumatic Disease	60 (33.3%)	34 (42.5%)	26 (26.0%)
Spinal Cord Injuries	58 (32.2%)	29 (36.3%)	29 (29.0%)
Pediatrics	51 (28.3%)	23 (28.7%)	28 (28.0%)
Neurosurgical	50 (27.7%)	25 (31.3%)	25 (25.0%)
Debility	49 (27.2%)	26 (32.5%)	23 (23.0%)
Developmental Disorders	47 (26.1%)	23 (28.7%)	24 (24.0%)
Sensory Disorders	39 (21.6%)	22 (27.5%)	17 (17.0%)
Respiratory Disorders	37 (20.5%)	16 (20.0%)	21 (21.0%)
Pre-natal/Obstetric	29 (16.1%)	12 (15.0%)	17 (17.0%)
Psychological Disorders	19 (10.5%)	7 (8.8%)	12 (12.0%)
Gynecologic Patient	13 (7.2%)	8 (10.0%)	5 (5.0%)
Other	15 (8.3%)	5 (6.3%)	10 (10.0%)

The third research question addressed the potential determinants of credentialing for aquatic rehabilitation, fitness, and training practitioners.

RQ3. What are the potential determinants of continuing professional development for Aquatic Rehabilitation, Fitness, and Training Practitioners?

RQ3 sought to describe continuing professional development determinants for aquatic rehabilitation, fitness, and training practitioners. In order to assess the potential determinants of continuing professional development for aquatic rehabilitation, fitness, and training practitioners, an analysis of respondents regarding their continuing professional development activities was sought. Respondents ($n = 180$) identified the selected programs as places they have received continuing aquatic educational courses (See Table 32). Over 58.8% of respondents ($n = 106$) selected the Aquatic Therapy & Rehab Institute as the venue offering continuing aquatic educational courses. Respondents also selected the Aquatic Exercise Association (AEA) (44.4%), and “other” unlisted venues (23.8%). Other unlisted venues selected by multiple respondents were the American Physical Therapy Association (3.9%), and Water Art Fitness International (3.9%).

Table 32

Programs Identified by Respondents as Having Received Continuing Aquatic Educational Courses

Programs Identified by Respondents as Having Received Continuing Aquatic Educational Courses			
	Total N and (%)	ARN N and (%)	ATRI N and (%)
Programs that offer Continuing Education	106		
Aquatic Therapy & Rehab Institute (ATRI)	(58.8%)	43 (53.8%)	63 (63.0%)
Aquatic Exercise Association (AEA)	80 (44.4%)	32 (40.0%)	48 (48.0%)
Other	43 (23.8%)	18 (22.0%)	25 (25.0%)
Aerobics and Fitness Association of America (AFAA)	14 (7.7%)	5 (6.3%)	9 (9.0%)
United States Water Fitness Association, Inc. (USWFA)	14 (7.7%)	6 (7.5%)	8 (8.0%)
Aquatic Resource Network (ARN)	13 (7.2%)	8 (10.0%)	5 (5.0%)
America Council on Exercise (ACE)	11 (6.1%)	4 (5.0%)	7 (7.0%)
Can-Fit-Pro	4 (2.2%)	1 (1.3%)	3 (3.0%)
Canadian Aquafitness Leaders Alliance Inc. (CALA)	3 (1.6%)	1 (1.3%)	2 (2.0%)
Showme Aquatic & Fitness	3 (1.6%)	1 (1.3%)	2 (2.0%)
The National Center on Physical Activity & Disability (NCPAD)	3 (1.6%)	1 (1.3%)	2 (2.0%)
None, I have not taken any continuing aquatic educational courses	25 (13.8%)	2 (2.5%)	23 (23.0%)

Question 24 requested information on the provision of professional preparation in aquatics instruction and intervention to others. Over thirty percent (31.6%) of respondents provided professional preparation to others in aquatic rehabilitation, fitness, and training. From this 8.3% provide full time professional preparation and 23.3% of practitioners offered part time professional preparation (See Table 33).

Table 33

Professional Preparation Provided by Aquatic Rehabilitation, Fitness, and Training Practitioners

Professional Preparation Provided by Aquatic Rehabilitation, Fitness, and Training Practitioners			
Status	Total N (%)	ARN N (%)	ATRI N (%)
None	72 (40.0%)	34 (42.5%)	38 (38.0%)
Part Time	42 (23.3%)	19 (23.8%)	23 (23.0%)
Full Time	15 (8.3%)	8 (10.0%)	7 (7.0%)
Missing	51 (28.3%)	19 (23.8%)	32 (32.0%)
Total	180 (100%)	80 (100%)	100 (100%)

Table 34 displays the yes/no survey responses discussing the principles and practices respondents teach others, 29.4% indicated that they have taught aquatic rehabilitation, fitness, or training principles and or aquatic practices to others at conferences or at workshops.

Table 34

Aquatic Therapy Principles/Practices Taught by Aquatic Rehabilitation, Fitness, and Training Practitioners

Aquatic Therapy Principles/Practices Taught by Aquatic Rehabilitation, Fitness, and Training Practitioners			
Status	Total N (%)	ARN N (%)	ATRI N (%)
No	83 (46.1%)	38 (47.5%)	45 (45.0%)
Yes	53 (29.4%)	24 (30.0%)	29 (29.0%)
Missing	44 (24.4%)	18 (22.5%)	26 (26.0%)
Total	180 (100%)	80 (100%)	100 (100%)

Table 35 describes research being done by respondents; 58.3% of aquatic rehabilitation, fitness, and training respondents did not engage any research using aquatic interventions and techniques. Many (n = 20) of the respondents, however, recorded that they “would like to” engage in the research process.

Table 35

Research Done in the Field of Aquatics by Aquatic Rehabilitation, Fitness, and Training Practitioners

Research Done In the Field of Aquatics by Aquatic Rehabilitation, Fitness, and Training Practitioners			
Status	Total N (%)	ARN N (%)	ATRI N (%)
No	105 (58.3%)	51 (63.7%)	54 (54.0%)
Yes	30 (16.6%)	11 (13.8%)	19 (19.0%)
Missing	45 (25.0%)	18 (22.5%)	27 (27.0%)
Total	180 (100%)	80 (100%)	100 (100%)

RQ4. What Influence does membership in aquatic rehabilitation, fitness, and training organizations have on the number of certification that aquatic practitioners hold?

RQ4 seeks to describe what influence on certifications does membership in aquatic therapy organizations have on aquatic rehabilitation, fitness, and training practitioners. Of the 180 completed surveys, respondents answered the questions relating to the current status of aquatic certificates/certifications/or training courses they currently hold as an aquatic practitioner. Respondents' status of holding current aquatic certificates, certifications, or training courses responses were then compared to another survey question regarding membership from Table 8. There were thirty-nine respondents who selected being affiliated with both the Aquatic Resources Network (ARN) and Aquatic Therapy and Rehab Institute (ATRI). ANOVA demonstrates that there was a statistically significant relationship ($p = 0.001$) between belonging to both organizations and the number of aquatic certificates/certifications/or training courses and individual holds. Table 36 describes the number, mean of certifications, frequency, and significance of survey respondents' total number of certificate/certification/and or training. SPSS results a mean of 4.43 aquatic certificates/certifications/or training courses a respondent holds. As indicated, the respondents reported a higher frequency (6.485) of aquatic

certificates/certifications/or training courses when holding a membership in both aquatic organizations.

Table 36

The Influence in Membership Aquatic Rehabilitation, Fitness, and Training Organizations has on the Number of Certification that Aquatic Practitioners Hold

Membership	N	Mean	F	Sig.
ARN ^a	28	4.43		
ATRI ^b	39	5.59		
Both ^c	41	7.68	6.485	0.001
Neither ^d	59	4.25		
Total	167	5.44		

* c ≠ a or b, d ≠ b

RQ5. Does the Number of Years of Practice Influence the Amount of Total Certifications which Aquatic Rehabilitation, Fitness, and Training Practitioners Pursue?

RQ5 sought to describe if the number of years of practice an aquatic practitioner has influences the amount of total aquatic certifications an aquatic rehabilitation, fitness, and training practitioner holds. Of the 180 completed surveys, respondents answered the question relating to number of years of experience. Responses from Table 7 were compared with the total number of current aquatic certificates/certifications/or training courses respondents currently hold. The mean column within table 37 displays the mean number of aquatic certificates/certifications/or training courses an aquatic practitioner holds. The range of certification levels and educational levels are represented in Table 37. Table 37 describes the number, mean, and significance of the respondents' total number of certificates/certifications/or training.

Table 37

Number of Years of Practice an Aquatic Practitioner Holds Compared to the Total Number of Aquatic Certifications

Years of Practice	N	Mean	F	Sig.
Not Answered	5	0		
Less than 10 years	64	4		
11-19 years	59	5.71		
20+ years	31	7.25	9.089	0.001

Summary

Overall, there were 199 respondents who initiated a response to the survey. Of the 199, 180 respondents sent in usable survey data. The total responses only represent a sample of aquatic rehabilitation, fitness, and training practitioners actually performing aquatic interventions and services daily from the Aquatic Resource Network and Aquatic Therapy and Rehab Institute. It does not reflect the actual population of aquatic rehabilitation, fitness, and training practitioners currently involved in the field.

Further discussions of these findings as well as conclusions about the improvements of the survey within the aquatic rehabilitation, fitness, and training population were presented in chapter five.

CHAPTER V: Discussion

Summary of Results

A growing body of literature tends to support the efficacy and benefits of aquatic rehabilitation, fitness, and training in general, yet within the aquatic field it remains unclear who actually provides these aquatic rehabilitation, fitness, and training services (Norton & Jamison, 2000). The purpose of this study was to examine aquatic practitioners currently providing aquatic rehabilitation, fitness, and training services from two of the leading aquatic organizations, Aquatic Resource Network (ARN) and Aquatic Therapy & Rehab Institute (ATRI). The study was designed to help identify and describe the individuals providing aquatic rehabilitation, fitness, and training services. Five research questions were posed to examine relationships between the professional profile of respondents of the two aquatic organizations and the types of credentialing, settings, population groups, and services provided. This study yielded 180 usable surveys, with comparable responses from both aquatic organization memberships. The study sample consisted of 16.1% (n=29) Aquatic Resource Network (ARN) respondents, 21.6% (n=39) Aquatic Therapy and Rehab Institute (ATRI) respondents, 21.6% (n=39) respondents belonging to both organizations, and 29.4% (n=53) respondents belonging to neither organization. This chapter includes a summary of findings, limitations, implications for practice, implications for research, and concluding comments.

Summary of Findings

The five research questions examined the current profile of aquatic rehabilitation, fitness, and training practitioners. This descriptive study generated information from

respondents affiliated with either Aquatic Resource Network (ARN) or Aquatic Therapy and Rehab Institute (ATRI). The following section presents the five research questions and any key findings for each question.

Research Question 1: What is the profile of Aquatic Rehabilitation, Fitness, and Training Practitioners from the online organization Aquatic Resource Network (ARN) and Aquatic Therapy and Rehab Institute (ATRI)?

The study yielded 180 usable surveys, 100 responses were received from the Aquatic Therapy and Rehab Institute (ATRI) and 80 responses were received from the Aquatic Resource Network (ARN). A descriptive analysis was used to determine what significant predictors of aquatic practitioners were most common.

These two aquatic organizations, Aquatic Resource Network (ARN) and Aquatic Therapy and Rehab Institute (ATRI) offer similar aquatic opportunities, experiences, and information to the public and practitioners of the aquatic field. It is not a requirement for aquatic practitioners to belong to either organization; however, this study demonstrated that over twenty percent of respondents were members of both the ARN and ATRI organizations. Demographic variables were collected from both aquatic organizations such as age range, gender, and current aquatic organization memberships. The collected research indicated that more than half of the respondents were over 46 years old and seventy five percent of the total aquatic population responding was female.

Both aquatic organizations had similar responses when referring to educational status, meaning that they both had similar percentages of individuals with no-degree, high school diplomas, associate, bachelor, masters, and doctorate levels. Both organizations displayed similar responses when it came to first aid certification and CPR training.

Since both aquatic organizations had such similar profiles, there were limited areas of major difference between the two organizations.

The Aquatic Resource Network (ARN) had higher percentages of respondents within aquatic related job titles from health care related disciplines such as physical therapy (PT) and aquatic therapy program directors or managers. Membership within Aquatic Resource Network (ARN) had more members who selected having a primary background/discipline in Physical Therapy. ARN also contained slightly more members credentialed at the state licensure level. The ARN members tended to work in community outpatient rehabilitation settings and were more often covered by third party reimbursement. ARN members seem to have more experience with Halliwick and Watsu® intervention specific techniques than their ATRI counterparts.

Aquatic Therapy and Rehab Institute (ATRI) had a higher percentage of individuals working as a group aquatic exercise instructor or program coordinator. These job titles are consistent with the profile of the respondents since a majority of ATRI respondents selected working at a Fitness or Sports Facility as their primary place of employment. The services provided by ATRI practitioners are usually not covered by third party payments. ATRI members reflected more training within population specific certifications such as Arthritis and Multiple Sclerosis and intervention specific Ai Chi certifications.

Research Question 2: What types of facility, intervention instructional formats, diagnostic related classes and specific diagnostic related groups reflect aquatic rehabilitation, fitness, and training practice as reported by those members of Aquatic Resource Network (ARN) & Aquatic Therapy and Rehab Institute (ATRI)?

A descriptive analysis was used to determine what significant predictors of aquatic practitioners were most common when reporting on facility, intervention instructional formats, diagnostic related classes and specific diagnostic related groups. Again, both the Aquatic Resource Network (ARN) and the Aquatic Therapy and Rehab Institute (ATRI) had similar responses. Almost half of the ARN and the ATRI members selected performing aquatic interventions within a therapy pool. Therapy pools are most commonly used for the warm water properties that assist in restoring a person's strength and movement through the use of buoyancy and resistance (Cole & Becker, 1997, 2003). Respondents from both organizations use one-on-one private instruction more often when providing adaptive aquatic and aquatic therapy classes to clients. One-on-one format and semi-private classes are more often reimbursable than large group classes (ARN, 2008).

Research Question 3: What are the potential determinants of continuing professional development for Aquatic Rehabilitation, Fitness, and Training Practitioners?

Research question three sought to describe continuing professional development determinants for aquatic rehabilitation, fitness, and training practitioners. The ARN and the ATRI members identified receiving continuing education from both the Aquatic Therapy & Rehab Institute and the Aquatic Exercise Association (AEA). These two organizations (ATRI and AEA) held larger frequencies of respondents than some of the other available aquatic agencies. ARN and ATRI respondents were similarly matched in

offering professional preparation to other aquatic rehabilitation, fitness, and training practitioners, and both ARN and ATRI displayed similar responses to teaching aquatic therapy principles and practices.

Research Question 4: What influence does membership in aquatic rehabilitation, fitness, and training organizations have on the number of certification that Aquatic Practitioners hold?

An ANOVA was performed and a Scheffe's test was administered to compare the means of the number of certifications and memberships. The analysis of variance was conducted to determine if belonging to a certain aquatic organization increased the number of certifications the aquatic practitioners held. From this analysis, the results indicated that aquatic practitioners who belonged to both memberships held more certifications. This could be due to the fact that individuals participating as a member within both aquatic organizations hold a higher interest in obtaining aquatic rehabilitation, fitness, and training information and experience. Those respondents belonging to both organizations and holding more certifications may have a greater personal investment in the aquatic rehabilitation, fitness, and training field.

Research Question 5: What influences the number of total aquatic certifications that Aquatic Rehabilitation, Fitness, and Training Practitioners pursue?

Once again, an analysis of variance was performed and a Scheffe's test administered to determine if having more years of experience and practice within the aquatic field increased the number of certifications the aquatic practitioner held. From

this analysis, the results indicated that having twenty plus years of experience was significantly related to aquatic practitioners attaining more certifications.

Current Profile of Aquatic Practitioners Who Answered the Survey

From the answered research questions, a summary of what a current profile of an aquatic practitioner of the people who answered the survey was formed. Demographic related questions helped form the profile of the aquatic practitioner respondents. The respondent was between the ages of 46-55 and female. Respondents provided aquatic interventions to clients and these individuals have been doing so for the past 16-20 years. The greatest number of respondents had a job title of either a Physical Therapist or a Physical Therapy Assistant. These practitioners had at least a bachelor's degree. The majority of respondents (65%) were credentialed in their discipline and 48% held credentialing at the state level. While credentials were not tied to any one discipline, the largest number of respondents were credentialed in Physical Therapy followed by Recreational Therapy. The majority of aquatic practitioners indicated that their aquatic job was their primary source of income. The majority of practitioners (58%) did not hold the ATRIC level of aquatic credentialing nor had they ever previously held ATRIC (68%). Respondents had an average of five certifications including areas such as CPR, first aid, aquatic group exercise, population specific or intervention specific certifications. The reasoning behind a respondents lapsed certifications was due to the relevance to current practice and time restrictions.

Based on the facility related questions, the respondents performed their services in a therapy pool but worked at a facility with a therapy and/or another type of swimming pool (lap, multipurpose, recreational). Respondents taught one-on-one private instruction

to adaptive aquatic classes, aquatic therapy, aquatic fitness, or aquatic swim lessons. If respondents taught any group fitness aquatic classes, it was in a medium group size setting and the type of class was being offered to adult or adult senior related age groups. When teaching group fitness classes, a respondent would primarily teach aquatic classes relating to diagnostic treatment/specialty groups for arthritis, fibromyalgia, or multiple sclerosis. When working with one-on-one clients, respondents would work with individuals who have musculoskeletal conditions, orthopedic rehabilitation conditions, or neurological impairments.

Based on the continuing educational questions, aquatic practitioners took continuing educational classes from either Aquatic Therapy & Rehab Institute and/or the Aquatic Exercise Association (AEA). They did not, however, provide professional preparation to others in the field, nor teach any aquatic therapy principles or practices. This aquatic practitioner did not perform any aquatic related research studies to the field.

Limitations

Limitations were previously discussed in chapter one, they included:

- (1) Only those individuals who were members or who received emails from the two aquatic organizations (ARN and ATRI) were included. Therefore, there were a limited number of subjects from which to draw conclusions. The sample size did not clearly reflect the total of practicing aquatic rehabilitation, fitness, and training practitioners and thus, limited the generalizability across the practicing aquatic intervention population.
- (2) The inclusion of individuals who willingly volunteered to complete the survey presented a limitation on representativeness of the population.

(3) Due to the nature of the study, random selection and assignment were not feasible.

(4) As with any self-reported variable, there was a potential for inaccurate reporting, and recall bias when identifying answers in the aquatic rehabilitation, fitness, and training survey.

Regarding the limitation of sample size, the sample for this study was 180 usable responses from a total email distribution list of 5,888 aquatic practitioners. Since the results reflect that nearly 305 of the respondents belong to both organizations, the total number of practitioners may be closer to 4120 individuals. While the total number of respondents were limited, the number of responses is adequate to draw conclusions. The ability to generalize the conclusions made from this study to all aquatic rehabilitation, fitness, and training practitioners may be more restricted. Of these 180 usable responses 80 responses were received from the Aquatic Resource Network, and 100 responses were received from the Aquatic Therapy and Rehab Institute (ATRI) survey link.

Regarding the limitation with any self-reported variable, the training and/or education a respondent received in a certain intervention specific, population specific, industry specific, aquatic fitness, adaptive aquatics, or basic aquatic safety course left the respondent uncertain on how to complete the survey. Therefore, accurately defining aquatic certificates, certifications, and training courses and their outcomes was crucial for generating appropriate responses.

Implications of the Study

Given the study results, implications for future research seem appropriate. The importance of this research was driven by the lack of information on who performs

aquatic services and other similar descriptive information such as what types of certifications, training, and experience these aquatic practitioners hold. There was a range of certifications and training from varied certifying agencies. At the same time, there seemed to be inconsistency in the application of requiring specific credentials for aquatic practices. Furthermore, there remains an unclear profile of who was an aquatic practitioner currently practicing in the field. Researchers have provided almost no empirical evidence on what competencies and credentials professionals need or should acquire in order to provide aquatic rehabilitation, fitness, and training services.

Based on the results of this survey, there are several implications for aquatic research. Studies, which address the outcomes of practice, the consumers, the providers, and the industry stakeholders, as well as the diverse group of aquatic rehabilitation, fitness, and training practitioners, are warranted.

Implications for Practice

Disciplines such as physical therapy (PT), occupational therapy (OT), recreational therapy (RT), athletic training (ATC), and kinesiology (KT) all use aquatic techniques designed to address an individual's aquatic rehabilitation, fitness, and training goals in order to facilitate functional gains and overall improvement (Norton & Jamison, 2009). However, these practitioners are not all aware of and/or trained in all of the emerging aquatic specialties that address the needs of a wide range of individuals and include diverse techniques and applications. Furthermore, based on the outcomes of this study, many may not value or feel they need to acquire specialized training for aquatic rehabilitation. Additional implications for practice and recommendations are discussed for consumers, providers, and the aquatic industry professional organization stakeholders.

Consumers

A diverse set of consumers with a range of disabilities and needs receive various aquatic rehabilitation, fitness, and training services. These individuals received interventions from practitioners to assist them in regaining functional skills and/or meeting individual needs (Koury, 1996). The services provided by aquatic rehabilitation, fitness, and training practitioners can often assist individuals in acquiring significant gains in independence during the aquatic rehabilitation, fitness, or training process, especially in those with rehabilitation needs (Cole & Becker, 1994).

Upon referral, consumers may be under the assumption that a practitioner has the appropriate skills, competencies, and credentials to apply aquatic intervention and training. Given the diversity of disciplines and aquatic specific training, it is uncertain how the consumer can select appropriate practitioners for specific services or needs.

Should all disciplines, regardless of knowledge, skill, and abilities in the application of aquatics have specific competencies and credentials as they relate to aquatic interventions and training? Without a specific set of credentials, can consumers effectively choose the most appropriate practitioner?

The lack of a unified standard for practice across service categories leaves the consumer at risk. It is important, therefore, that consumers inquire about the credentials and supporting aquatic certifications an individual provider when seeking services.

Providers

Given the results of this survey, aquatic rehabilitation, fitness, and training practitioners do not possess any single set of consistent competencies for aquatic practice. It may be appropriate for agencies that provide aquatic rehabilitation, fitness, and training

services to define each specific service and the competencies, skills, and certifications needed for effective practice. Concurrently, aquatic rehabilitation, fitness, and training professional organizations, specifically ARN and ATRI, may need to engage in a process that promotes consistency in knowledge, skills, and abilities for the practice of each type of service (e.g., aquatic therapy by type of service and population, aquatic training, and aquatic fitness). Both organizations may want to collaborate on a proposed research effort focusing on specific areas or service categories.

Based on the data, the industry can be categorized into six service delivery groups: intervention specific, population specific, industry specific, aquatic fitness specific, adaptive aquatics specific, and basic aquatic/safety specific. Given the lack of acceptance for existing certifications, it would seem appropriate for the industry to target specific competencies for each target/service specific group and to have providers develop professional credentials for each. While disciplines may utilize the skills of their discipline in service delivery, the nature of the aquatic environment may require specific competencies to maximize on outcomes.

Aquatic practitioners performing intervention specific services to clients should be required to participate in intervention specific training. With specific competencies, the client will be better served and outcomes more targeted to respond to consumer needs. By doing so, practitioners could choose to be trained in a variety of interventions, which could help target improvements in client functioning. For example Ai Chi and Ai Chi Ne aquatic intervention specific course competencies would promote balance and proprioception in a client with neurological and or musculoskeletal conditions. As a

certification, the approach enhances the competencies of the individual professional regardless of discipline.

The results of this survey suggest that ARN and ATRI should form a unified survey to identify what/which aquatic intervention skill sets would promote overall wellness and improvement to clients based on service category. With such an instrument, aquatic rehabilitation, fitness, and training practitioners could identify which intervention specific courses and continuing educational competencies would be best for the clientele with whom he or she works thus, better meeting their client's individual needs.

Continuing educational competencies should include some form of class updates or readings provided by ARN or ATRI in an online format. These continuing educational mini lectures could require a mandatory update once every two years by practitioners.

Population specific groups should require core competencies for practitioners. Population specific groups have already researched the ideal exercises and aquatic recommendations (such as pool temperature, class size, equipment use) for the different population specific aquatic cliental. Core aquatic, population specific competencies should be mastered by aquatic practitioners in a hands-on in pool and classroom training session in order to learn and fully understand the aquatic properties best suited for these individuals. Once training is complete and certification has been acquired, future research and continuing updates within each population field is recommended. ARN and ATRI could provide continuing competencies by having practitioners read new research information provided by the national organizations (i.e., Arthritis Foundation, Multiple Sclerosis Foundation, etc.). Practitioners should be current in research, treatment, and be able to pass a periodic examination to maintain credentialing and to educate consumers.

By requiring practitioners to keep updated every year with the changes in the population specific field both providers and clients will benefit from the knowledge and make successful and appropriate transitions. For example, aquatic arthritis related classes recommend that clients move slowly and perform repetitive slow motion aquatic exercises in the water. However, recently the National Arthritis Organization now recommends a new set of aquatic exercises at a medium intensity for clients with more stamina. These classes allow and/or recommend the instructor use additional equipment such as noodles to improve circulation and overall arthritic performance.

Core competency recommendations for industry specific groups need to be required by aquatic facilities. It would benefit the aquatic field if facilities established a relationship between this industry specific certifications and compensation for providers. To become certified, ARN and ATRI should provide and develop aquatic therapy specific curricula (such as what is recommended by ATRI for the ATRIC certification). This certification is achieved if practitioners understand the properties of the water, knowledge and skills in basic and varied techniques, and an overall knowledge of health care diagnoses. Aquatic industry competencies should be updated annually by providing continuing educational units (CEUs) and staying current with the changes in the aquatic field. These CEUs could be required for certification renewal. Furthermore, aquatic facilities should require that all providers maintain current credentialing by service category.

In order to meet the recommended core competency for aquatic fitness specific groups, practitioners should first become certified by one of the aquatic exercise organization such as AEA or USWFA. These practitioners should then continue to keep

up with re-certification by teaching a number of classes per year as recommended by their training organizations, attending exercise classes taught by other credentialed professionals, and by completion of CEUs or testing requirements.

Core competency recommendations for adapted aquatics specific groups should meet some of the same requirements as the aquatic fitness specific groups. Initially, a practitioner should become certified in adaptive aquatics, and then he or she should continue with periodic recertification recommendations. Additional options for the acquisition of CEUs may include observing other facilities adaptive aquatic programs, shadowing other instructors, acquiring formal training in different adaptive areas, reviewing other facilities' class formats, and completing short interviews with individuals working at organizations meeting the adaptive population needs. Some of these recommendations are currently proposed by organizations such as the AAHPERD and the Special Olympics.

Core competency recommendations for basic aquatic/safety specific groups are currently being required by some facilities. It should be recommended that practitioners follow up each year with new training, review/re-certify in aquatic safety training and first aid courses. Practitioners may also complete CEU credits by reading select articles by the National Swimming Pool Foundation, ARN, or ATRI. This way practitioners can continue to acquire competencies, keep updated with aquatic facilities pool policies and practices, keep track of aquatic related incidents, and engage in an in-house or interagency review for co-workers and peers.

Once competencies (knowledge, skills, and abilities) are identified for each specific service category, credentialing programs can be established and aquatic curricula

may be integrated into programs, which will lead to emerging specialties and eventually into a future licensure and professional certifications. These credentialing programs can be the basis for entry-level practice for each service category. Also, in order to determine what certifications professionals may need for practice, it is recommended that ARN and ATRI, as primary aquatic resource organizations, should establish a collaborative survey designed to identify required skill sets and needs within each area of aquatic services. While not everyone is going to require and possess all the aquatic skill sets for his or her area of practice, there are key core knowledge, skills and abilities that are needed regardless of service area.

Aquatic Industry Professional Organization Stakeholders

Aquatic industry professional organization stakeholders include the wide range of membership and credentialing organizations related to aquatic rehabilitation, fitness, and training. For instance, when examining certifications, numerous agencies provide training and certification in select skill areas or with specific populations (e.g., American Red Cross (ARC), Aquatic Exercise Association (AEA), Aquatic Therapy and Rehab Institute (ATRI), Aquatic Resource Network (ARN), Aerobics and Fitness Association of American (AFAA), America Council on Exercise (ACE), Arthritis Foundation, Multiple Sclerosis Foundation, American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD), Showme Aquatics & Fitness, United States Water Fitness Association (USWFA)). While it may be appropriate for numerous organizations to exist, it is essential for agencies engaged in service delivery to consumers to require minimal competencies and credentials for the delivery of specific aquatic rehabilitation,

fitness, or training services. A unified set of competencies requires interagency communications and research collaboration.

Furthermore, it seems appropriate for the industry to embrace a credentialing process that requires continuing professional education, practice, and renewal. Such a process can be accomplished by the creation of unified industry standards and guidelines for practitioners in aquatic rehabilitation, fitness, and training. For example, most aquatic recreational centers require aquatic staff to be trained in water safety techniques (e.g., life saving, water safety, cardiopulmonary resuscitation, first aid). The American Red Cross, American Life Guard Association, United States Life Saving Association, and the YMCA provide such instruction. These credentials require periodic renewal, testing, and/or training. Therefore, the facility and the consumer both know that the instructor or aquatic practitioner he or she works with has passed some sort of certification and has received training. To date, most facilities require some form of credentialing but it is not uniformly applied to all skill sets or specialty areas. A baseline set of credentials is essential in order to establish uniformity and consistency in practice.

Furthermore, the representatives from each of the stakeholder organizations may require aquatic rehabilitation, fitness, and training specialists to meet specific credentialing standards by service category. In addition, these organizations may establish continuing education forums to assist practitioners in maintaining credentials/certifications. Provider aquatic agencies may encourage and support aquatic practitioners in acquiring additional continuing education in order to ensure consumers receive contemporary services.

Academic Accreditation for Aquatic Service Category

Perhaps the ultimate outcome is the creation of an academic accreditation program for professional preparation that is tied to professional credentialing. Such a move would advance the development of a more competent professional in each service area. Educational programs would emphasize the knowledge, skills, and abilities for competent practice (Council for Higher Education Accreditation (CHEA), 2001). The accreditation program would offer a review and accreditation for well-designed learning activities that promote competent practice. As delineated by the CHEA, accreditation programs ensure that graduates demonstrate competence in practice and practice in those domains in which individuals have demonstrated competence.

Given that most of the aquatic service categories are related to health and/or health care/treatment, it would seem appropriate to explore educational accreditation as an option in order to meet some of the key principles of accreditation. Among these functions are:

- Ensuring that graduates are appropriately prepared to demonstrate competent levels of performance; and
- Ensuring that educational programs meet basic standards derived by educators and practitioners

While the individual service categories may not be positioned to pursue such a program at this juncture, ethical obligations for protecting the welfare of the consumer will ultimately have to be addressed. Future efforts may explore such options.

Implications for Research

Based on the results of this study, several areas of research are warranted. Among the topics is the identification of specific competencies (knowledge, skills, and abilities) needed for each specific aquatic service. Until a unified set of competencies can be identified, it is difficult for the industry to regulate who should/can provide services. Furthermore, does a specific set of competencies guarantee outcomes for the consumer?

Within the existing system, it may be valuable to determine if the possession of certain certifications reflects a higher quality of service. Such information may promote select certifications and discount others as irrelevant. It may be incumbent on the industry or specific credentialing organizations to demonstrate the relative value of each credential to aquatic service agencies.

Until a systematic data collection and research process is implemented, the ability to provide a descriptive profile of those who perform effective and efficient aquatic services is left to chance and professional intuition. Thus, the aquatic related professions find themselves at a competitive disadvantage in the aquatic industry. In addition, the consumer is left without a means to determine the competencies, qualifications and training of the provider against an industry standard for best practice.

Conclusions

One purpose of this study was to examine and adequately describe aquatic services from those individuals currently practicing aquatic treatment techniques across the nation. While the responses from the data analyzed ranged, respondents worked with a diversity of populations and conditions, yet the number of actual certification and training was inconsistent. It forms the question: who is providing these clients with

aquatic interventions and what types of adequate training or certification does the practitioner hold?

The aquatic industry and organizations such as Aquatic Resource Network (ARN) and the Aquatic Therapy and Rehab Institute (ATRI) need to perform more surveys and research studies tailored to meet some of the unanswered questions listed within this chapter. These studies need to reach more people performing aquatic rehabilitation, fitness, and training services and more aquatic facility providers. As depicted in the results, an increased emphasis should be placed on the research process and in determining the outcomes of aquatic therapy. Furthermore, the credentials needed by practitioners in order to perform aquatic therapy need to be examined to determine the relative value. Finally, the specific knowledge, skills, and abilities need to be validated for each of the specific aquatic service categories.

Final Comments

A growing body of literature tends to support the efficacy and benefits of aquatic, rehabilitation, fitness, and training in general. It remains clear, however, that those who actually provide these aquatic rehabilitation, fitness, and training are as diverse as the facilities providing services. Each aquatic practitioner's role is individually defined, and each individual may hold a different job description, work with different populations, and possess different preparation and training. The difference in each therapist's aquatic niche, educational background and obtained certifications has created confusion for the consumer and agency provider.

Results of this descriptive study suggest that both aquatic organizations, ARN and ATRI, can have a positive influence on aquatic rehabilitation, fitness, and training

interventions and services provided for aquatic practitioners and their consumers. The relationship between these two aquatic organizations and current practicing aquatic practitioners is complex and additional research is required to further understand and describe who these aquatic rehabilitation, fitness, and training practitioners are and the competencies needed to engage in the diversity of aquatic services.

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APPENDIX A: INSTITUTIONAL REVIEW BOARD APPROVAL



University and Medical Center Institutional Review Board
East Carolina University • Brody School of Medicine
600 Moye Boulevard • Old Health Sciences Library, Room 1L-09 • Greenville, NC 27834
Office 252-744-2914 • Fax 252-744-2284 • www.ecu.edu/irb
Chair and Director of Biomedical IRB: L. Wiley Nifong, MD
Chair and Director of Behavioral and Social Science IRB: Susan L. McCammon, PhD

TO: Joan Marie Langella, BS, Recreation & Leisure Studies, ECU
FROM: UMCIRB 
DATE: September 3, 2009
RE: Human Research Activities Determined to Meet Exempt Criteria
TITLE: "The Current Profile of Aquatic Rehabilitation, Fitness, and Training Practitioners"

UMCIRB #09-0647

This research study has undergone IRB review on 9/3/09. It is the determination of the IRB Chairperson (or designee) that these activities meet the criteria set forth in the federal regulations for exemption from 45 CFR 46 Subpart A. This human research activity meets the criteria for an exempt status because it is research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects and any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation. The Chairperson (or designee) deemed this **unfunded** study **no more than minimal risk**. This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any changes must be submitted to the UMCIRB for review prior to implementation to allow determination that proposed changes do not impact the activities eligibility for exempt status. Should it found that a proposed change does require more substantive review, you will be notified in writing within five business days.

The following items were reviewed in determination exempt certification:

- Internal Processing Form (dated 8/28/09)
- Email for Solicitation of Participation of Company
- Cover Email for Survey
- Consent Statement for Survey
- Current Aquatic Therapist Profile Survey
- Thank you follow-up statement

It was furthermore determined that the reviewer does not have a potential for conflict of interest on this study.

The UMCIRB applies 45 CFR 46, Subparts A-D, to all research reviewed by the UMCIRB regardless of the funding source. 21 CFR 50 and 21 CFR 56 are applied to all research studies that fall under the purview of Food and Drug Administration regulations. The UMCIRB follows applicable International Conference on Harmonisation Good Clinical Practice guidelines.

APPENDIX B: UPDATED INSTITUTIONAL REVIEW BOARD APPROVAL

UMCIRB #:

UNIVERSITY AND MEDICAL CENTER INSTITUTIONAL REVIEW BOARD
REVISION FORM

UMCIRB #: 09 0647

Date this form was completed: 10/20/2009

Title of research: The Current Profile of Aquatic Rehabilitation, Fitness, and Training Practitioners

Principal Investigator: Joan Marie Langella

Sponsor:

Fund number for IRB fee collection (applies to all for-profit, private industry or pharmaceutical company sponsored project revisions requiring review by the convened UMCIRB committee):

Fund	Organization	Account	Program	Activity (optional)
		73059		

Version of the most currently approved protocol:

Version of the most currently approved consent document:

CHECK ALL INSTITUTIONS OR SITES WHERE THIS RESEARCH STUDY WILL BE CONDUCTED:

- | | |
|--|--|
| <input checked="" type="checkbox"/> East Carolina University | <input type="checkbox"/> Beaufort County Hospital |
| <input type="checkbox"/> Pitt County Memorial Hospital, Inc | <input type="checkbox"/> Carteret General Hospital |
| <input type="checkbox"/> Heritage Hospital | <input type="checkbox"/> Boice-Willis Clinic |
| <input type="checkbox"/> Other | |

The following items are being submitted for review and approval:

- Protocol: version or date
 Consent: version or date
 Additional material: version or date Survey, agency letter

Complete the following:

1. Level of IRB review required by sponsor: full expedited *exempt*
2. Revision effects on risk analysis: increased no change decreased
3. Provide an explanation if there has been a greater than 60 day delay in the submission of this revision to the UMCIRB.
4. Does this revision add any procedures, tests or medications? yes no If yes, describe the additional information:
5. Have participants been locally enrolled in this research study? yes no
6. Will the revision require previously enrolled participants to sign a new consent document? yes no

Briefly describe and provide a rationale for this revision add agency approval letter, changed survey title

Joan Langella *Joan Langella* *10/20/09*
 Principal Investigator Signature Print Date

Box for Office Use Only

The above revision has been reviewed by:	
<input type="checkbox"/> Full committee review on _____ <input checked="" type="checkbox"/> Expedited review on <u>10-20-09</u>	
The following action has been taken:	
<input checked="" type="checkbox"/> Approval for period of <u>10-20-09</u> <i>exempt (no expiration) - k</i> <input type="checkbox"/> Approval by expedited review according to category <u>A</u> <input type="checkbox"/> See separate correspondence for further required action.	
<i>Michele Eble</i> Signature	Print
<i>Michele Eble</i> Signature	Date

APPENDIX C: AQUATIC RESOURCE NETWORK (ARN) RESEARCH APPROVAL LETTER

Attention: East Carolina University
Institutional Review Board

Courtesy of: Joan Langella
RCLS Graduate Student
Carol Belk Building
East Carolina University
Greenville, NC 27858

To Whom It May Concern:

Consider this a letter of approval to support the thesis research study of East Carolina University graduate student, Joan Langella. We (Aquatic Resources Network) grant Joan permission to send us a link to her survey and we (Aquatic Resources Network) are willing to post a link to her survey on our member services and to the public. Joan contacted us with her research interest and after speaking with her we feel that we can offer her an opportunity to work with the research population that she seeks while learning more about our organization. If you have any questions concerning our approval, please contact (Aquatic Resources Network) at (800-680-8624) between the hours of 9 AM and 4 PM to speak about this matter further.

Sincerely,

Andrea Salzman
Founder
Aquatic Resources Network
3500 Vicksburg Lane #250, Plymouth, MN 55447

APPENDIX D: AQUATIC THERAPY AND REHAB INSTITUTE RESEARCH APPROVAL

LETTER

Attention: East Carolina University
Institutional Review Board

Courtesy of: Joan Langella
RCLS Graduate Student
Carol Belk Building
East Carolina University
Greenville, NC 27858

To Whom It May Concern:

Consider this a letter of approval to allow data collection and support the thesis research study of East Carolina University graduate student, Joan Langella. We Aquatic Therapy & Rehab Institute grant Joan permission to collect data from our organization. Joan contacted us with her research interest and after speaking with her we feel that we can offer her an opportunity to work with the research population that she seeks while learning more about our organization. If you have any questions concerning our approval, please contact Aquatic Therapy & Rehab Institute at 866-462-2874 between the hours of 10 AM and 3 PM to speak about this matter further.

Sincerely,

Angie Fischer
Director of Education & Marketing
Aquatic Therapy & Rehab Institute
West Palm Beach, FL

APPENDIX E: RESEARCHERS INTENT LETTER OF RESEARCH

Recreation & Leisure Studies
East Carolina University
Belk Building
Oglesby Drive
Greenville, NC 27858-4353

Thank you for your interest in our research!

Ms. Joan Langella, a graduate student is conducting a descriptive research study to understand the current profile of aquatic rehabilitation, fitness, and training practitioners. This study is completely voluntary. Your responses will be anonymous and the researchers will have no way to link your answers to you personally.

If you choose to participate, please continue on to the website link below. Please complete the entire questionnaire to the best of your ability.

If you have any questions or concerns, please contact Joan at: jml0904d1@ecu.edu.

Please click on this link to accept the survey questionnaire:

<https://survey.ecu.edu/perseus/se.ashx?s=0B87A656754ABD69>

APPENDIX F: CONSENT STATEMENT FOR SURVEY

Attention: East Carolina University
Institutional Review Board

Courtesy of: Joan Langella
RCLS Graduate Student
Carol Belk Building
East Carolina University
Greenville, NC 27858

Consent Statement for Survey

To Whom It May Concern:

Participants will be able to access the Aquatic Therapist Questionnaire Survey via an electronic link. The below consent statement will appear as the FIRST question asked on the Aquatic Therapist Questionnaire Survey. The Consent Statement for Survey will have to be checked in order to continue on to the Aquatic Therapist Questionnaire Survey. The **I AGREE** box must be checked in order to collect data from willing participants.

Please Read Statement below and check the box I agree:

By completing this survey and clicking this box, I agree to all of the following:

- a) That I am at least 18 years of age,*
- b) That I am willing and volunteering to take this survey*
- c) That I will only take this survey one time*
- d) That I consider myself involved in aquatic rehabilitation, fitness, and/or training.*
- e) and, That I received this survey from an approved organization email listserv, such as Aquatic Therapy & Rehab Institute (ATRI) AND/OR Aquatic Resource Network (ARN).*

I AGREE

APPENDIX G: AQUATIC REHABILITATION, FITNESS, AND TRAINING SURVEY**Current Aquatic Rehabilitation, Fitness, and Training Practitioners Profile Survey**

The **purpose** of this survey is to put together a profile of Aquatic Rehabilitation, Fitness, and Training Practitioners. Your answers to this short survey will remain anonymous and your participation is completely voluntary. You do not have to answer any questions that you are not comfortable with. This questionnaire has three sections and will take approximately fifteen minutes to complete. ***Thank you for your time and input.***

Please read the statement below and check the box if you agree you meet the requirements to be included in this study.

By completing this survey and clicking this box, I agree to all of the following:

- a) That I am at least 18 years of age,*
- b) That I am willing and volunteering to take this survey*
- c) That I will only take this survey one time*
- d) That I consider myself involved in aquatic rehabilitation, fitness, and/or training.*
- e) and, That I received this survey from an approved organization email listserv, such as*

Aquatic Therapy & Rehab Institute (ATRI) AND/OR Aquatic Resource Network (ARN).

• **I AGREE**

Part 1**Demographic Information:**

1) What is your current job title?

2) What is your aquatic facility postal zip code?

3) What is your gender:

- Female
- Male

4) What is your Age Group:

- 18-25
- 26-35
- 36-45
- 46-55
- Over 55

5) Do you hold a membership in any of the following:

- AquaticNet
- Aquatic Therapy & Rehab Institute (ATRI)
- Both
- Neither

6) Do you currently perform aquatic interventions (e.g., aquatic therapy, aquatic exercise, aquatic personal training, etc.) with clients?

- No
- Yes

7a) What is your highest diploma/degree completed?

- No-degree
- High School
- Associate
- Bachelor
- Masters
- Doctorate

7b) From what school/college/or university is your highest degree (OPTIONAL):

8) What is the background of your primary discipline profession?

- | | |
|---|---|
| <input type="checkbox"/> Athletic Training | <input type="checkbox"/> Psychology |
| <input type="checkbox"/> Child Life | <input type="checkbox"/> Physical Therapy |
| <input type="checkbox"/> Education | <input type="checkbox"/> Recreational Therapy |
| <input type="checkbox"/> Exercise Science | <input type="checkbox"/> Speech Therapists |
| <input type="checkbox"/> Medical Doctor | <input type="checkbox"/> Not Applicable (no professional |
| <input type="checkbox"/> Occupational Therapy | training) |
| <input type="checkbox"/> Personal Training | <input type="checkbox"/> OTHER: <input style="width: 150px; height: 1.2em; border: 1px solid black;" type="text" value=""/> |

9) Are you CURRENTLY credentialed in the above profession?

- No
- No, Not applicable. (Credentialing is not available in my primary discipline)
- Yes

If "Yes", please fill in your credential information below:

a. State licensed/credentialed Specify:

b. Nationally credentialed Specify:

10) Do you currently hold ATRIC certification?

- No
- Yes

11) Have you previously held ATRIC certification but let it expire?

- No
- Yes

If "Yes", please check the box below which best describes why:

- Couldn't keep up the 10 continuing education units (CEUs) required
- Monetary expenses
- My facility does not require it
- Relevance to current practice
- Time restrictions
- OTHER:

12) Please check your current status for each of the following aquatic certificates/certifications/or training courses you hold. Certificates/certifications/training courses are divided into the following six subgroups (Intervention specific, Population specific, Industry specific, Aquatic fitness, Adapted aquatics, Basic aquatic/safety):

	Current	Lapsed	Instructor Level
Intervention Specific Certifications/Training Courses:			
a. Ai Chi	-	-	-
b. Ai Chi Ne	-	-	-
c. Aquatic Feldenkrais®	-	-	-
d. Aqua Pilates	-	-	-
e. Aqua Pi-Yo-Chi	-	-	-
f. Backhab	-	-	-
g. Bad Ragaz	-	-	-
h. Burdenko	-	-	-
i. Halliwick	-	-	-
j. Massage	-	-	-
k. PNF	-	-	-
l. Watsu®	-	-	-
m. OTHER: <input type="text"/>	-	-	-
Population Specific Certifications:			
n. Arthritis	-	-	-
o. ATRI Rheumatology	-	-	-
p. Multiple Sclerosis	-	-	-
q. OTHER: <input type="text"/>	-	-	-
Industry Specific Certifications:			
r. The Aquatic Therapy & Rehab Institute (ATRI)	-	-	-
s. The CALA Aquatic Post Rehabilitation Specialist	-	-	-
t. The National Commission for the Credentialing of Aquatic Rehabilitation Disciplines (NCCARD)	-	-	-
u. OTHER: <input type="text"/>	-	-	-
Aquatic Fitness Certifications:			
v. Aquatic Exercise Association (AEA)	-	-	-
w. United States Water Fitness Association (USWFA)	-	-	-
x. WaterArt	-	-	-
y. OTHER: <input type="text"/>	-	-	-
Adapted Aquatics Instructor Certifications:			
z. AAHPERD	-	-	-
aa. Certified Adaptive Aquatics Instructor	-	-	-
bb. Special Olympics	-	-	-
cc. OTHER: <input type="text"/>	-	-	-
Basic Aquatic/Safety Certifications:			
dd. ATRI Risk Awareness and Safety Training (RAST)	-	-	-
ee. Certified Pool Operator (CPO)	-	-	-
ff. CPR	-	-	-

gg. First Aid	-	-	-
hh. The Professional Lifeguard	-	-	-
ii. Water Safety Instructor (WSI)	-	-	-
jj. OTHER: <input type="text"/>	-	-	-

13) If **any** of the above certification have lapsed, please rank (1=Not at all important, 2=Some what important, 3= Moderately important, 4= Very important, 5=Extremely important) the primary reasons for allowing these previous certificates/certifications to expire (Please check boxes):

	Not at all Important	Somewhat Important	Moderately Important	Very Important	Extremely Important
a. Monetary	.1	.2	.3	.4	.5
b. Relevance to current practice.	1	.2	.3	.4	.5
c. Time restrictions	.1	.2	.3	.4	.5
e. OTHER: <input type="text"/>	.1	.2	.3	.4	.5

14) Is your primary agency Public or Private?

- Public
- Private
- Non-Profit

15) How would you classify your primary setting for aquatic intervention services?

- Community Outpatient Rehabilitation
- Fitness/Sports Facility
- Hospital
- Inpatient Rehabilitation Center
- Long-term Care
- Private Company
- Recreation Agency
- University/College
- OTHER:

16) Including yourself, how many Aquatic Therapists work at your facility?

- 1
- 2
- 3
- 4
- OTHER:

17) Do you ever co-treat with other Aquatic Therapists from other facilities?

- No
- Yes

If "Yes" then please briefly describe the circumstances?

18) Are the Aquatic Rehabilitation, Fitness, or Training services you provide covered by third party payment?

- No
- Yes

Part 2**Facility Information**

19) What types of pool options are available at your primary Aquatic Therapy work site? (Check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Competitive Pool | <input type="checkbox"/> Recreational Pool |
| <input type="checkbox"/> Freeform Pool | <input type="checkbox"/> Spa Pool/Spool |
| <input type="checkbox"/> Geometric Pool | <input type="checkbox"/> Spring Board Diving Pool |
| <input type="checkbox"/> HydroWorx Pool | <input type="checkbox"/> Therapy Pool |
| <input type="checkbox"/> Lap Pool | <input type="checkbox"/> Thermal Plunge Pool |
| <input type="checkbox"/> Multipurpose Pool | <input type="checkbox"/> OTHER: _____ |
| <input type="checkbox"/> Negative Edge Pool | <input type="checkbox"/> NONE, I do not work in a facility with |
| <input type="checkbox"/> Perimeter Overflow Pool | a pool. |
| <input type="checkbox"/> Play Pool | |
| <input type="checkbox"/> Polar Plunge Pool | |

20) What type of pool do you use most often when working with clients (Please check ONE)?

- | | |
|--|--|
| <input type="checkbox"/> Multipurpose Pool | <input type="checkbox"/> College/University Competitive Pool |
| <input type="checkbox"/> Therapy Pool | <input type="checkbox"/> Negative Edge Pool |
| <input type="checkbox"/> Recreational/Programming Pool | <input type="checkbox"/> Spa Pool/Spool |
| <input type="checkbox"/> Play Pool | <input type="checkbox"/> Perimeter Overflow Pool |
| <input type="checkbox"/> HydroWorx Pool | <input type="checkbox"/> Thermal Plunge Pool |
| <input type="checkbox"/> Diving Pool | <input type="checkbox"/> Polar Plunge Pool |
| <input type="checkbox"/> Freeform Pool | <input type="checkbox"/> Water Park Pool |
| <input type="checkbox"/> Geometric Pool | <input type="checkbox"/> OTHER: _____ |
| <input type="checkbox"/> Lap Pool | |

21) What types of Community/Group classes does your facility offer (check all that apply):

Community/Group classes are divided into the following six subgroups (Adaptive aquatics, Aquatic therapy, Aquatic fitness personal training, General water fitness, Aquatic swim lessons, and Aquatic classes relating to a diagnostic treatment/specialty):

Types of Classes Offered

a. Adaptive Aquatic Classes:

- One-on-one private instruction
- Semi-private (One instructor and 2-3 clients)
- Small group classes (One instructor and 4-8 clients)
- Medium group classes (One/Two instructors and 9-14 clients)
- Large group classes (One/Two instructors and 15 or more clients)
- My facility does not offer this type of class
- Other:

b. Aquatic Therapy:

- One-on-one private instruction
- Semi-private (One instructor and 2-3 clients)
- Small group classes (One instructor and 4-8 clients)
- Medium group classes (One/Two instructors and 9-14 clients)
- Large group classes (One/Two instructors and 15 or more clients)
- My facility does not offer this type of class
- Other:

c. Aquatic Fitness Personal Training:

- One-on-one private instruction
- Semi-private (One instructor and 2-3 clients)
- Small group classes (One instructor and 4-8 clients)
- Medium group classes (One/Two instructors and 9-14 clients)
- Large group classes (One/Two instructors and 15 or more clients)
- My facility does not offer this type of class
- Other:

d. General Water Fitness (this is a 2 part question):

PART 1 of 2:

- One-on-one private instruction
- Semi-private (One instructor and 2-3 clients)
- Small group classes (One instructor and 4-8 clients)
- Medium group classes (One/Two instructors and 9-14 clients)
- Large group classes (One/Two instructors and 15 or more clients)
- My facility does not offer this type of class
- Other:

PART 2 of 2: Does your facility offer any Water Fitness classes **SPECIFICALLY** for any of the age groups below? (Please check all that apply)

- Infant/Toddler (example: Water Babies classes)
- Children
- Youth
- Teenager
- Young Adult
- Adult
- Adult Senior
- My facility does not offer this type of class
- Other:

e. Does your facility offer Aquatic Swim lessons:

- One-on-one private instruction
- Semi-private (One instructor and 2-3 clients)
- Small group classes (One instructor and 4-8 clients)
- Medium group classes (One/Two instructors and 9-14 clients)
- Large group classes (One/Two instructors and 15 or more clients)
- My facility does not offer Aquatic Swim lessons
- Other:

f. Does your facility offer aquatic classes (e.g. fitness, swim lessons, etc.) relating to a Diagnostic Treatment/Specialty (check all that apply):

- | | |
|---|--|
| <input type="checkbox"/> ADHD | <input type="checkbox"/> Multiple Sclerosis |
| <input type="checkbox"/> Arthritis | <input type="checkbox"/> Muscular Dystrophy |
| <input type="checkbox"/> Autism | <input type="checkbox"/> Obesity |
| <input type="checkbox"/> Cerebral Palsy | <input type="checkbox"/> Parkinson's |
| <input type="checkbox"/> Cystic Fibrosis | <input type="checkbox"/> Prenatal Water Exercise |
| <input type="checkbox"/> Deafness & Hard of Hearing | <input type="checkbox"/> Relaxation |
| <input type="checkbox"/> Down Syndrome | <input type="checkbox"/> Respiratory Disorders |
| <input type="checkbox"/> Emotional Disturbance | <input type="checkbox"/> Spina Bifida |
| <input type="checkbox"/> Epilepsy | <input type="checkbox"/> Spinal Cord Injuries |
| <input type="checkbox"/> Fibromyalgia | <input type="checkbox"/> Stroke |
| <input type="checkbox"/> Fragile X syndrome | <input type="checkbox"/> Traumatic Brain Injury |
| <input type="checkbox"/> Learning Disabilities | <input type="checkbox"/> Visual Impairments |
| <input type="checkbox"/> Massage | <input type="checkbox"/> My facility does not offer classes |
| <input type="checkbox"/> Mental Illness | <input type="checkbox"/> OTHER: <input style="width: 150px; height: 1.2em; border: 1px solid black;" type="text"/> |
| <input type="checkbox"/> Mental Retardation | |

22) With what type(s) of populations/conditions do you work with? (Check all that Apply)

- | | |
|---|--|
| <input type="checkbox"/> Athlete/Sports Injuries | <input type="checkbox"/> Orthopedic Rehabilitation |
| <input type="checkbox"/> Brain Injury | <input type="checkbox"/> Pediatrics |
| <input type="checkbox"/> Cardiovascular Disease | <input type="checkbox"/> Pre-natal/Obstetric |
| <input type="checkbox"/> Debility | <input type="checkbox"/> Psychological Disorders |
| <input type="checkbox"/> Developmental disorders | <input type="checkbox"/> Respiratory disorders |
| <input type="checkbox"/> Gynecologic Patient | <input type="checkbox"/> Rheumatic diseases |
| <input type="checkbox"/> Musculoskeletal Conditions | <input type="checkbox"/> Sensory disorders |
| <input type="checkbox"/> Neurological Impairments | <input type="checkbox"/> Spinal Cord Injuries |
| <input type="checkbox"/> Neurosurgical | <input type="checkbox"/> Stroke (CVA) |
| <input type="checkbox"/> Obesity | <input type="checkbox"/> OTHER: <input style="width: 150px; height: 1.2em; border: 1px solid black;" type="text"/> |

PART 3**Aquatic Therapy Continuing Professional Development Information**

23) From which of the following programs have you received continuing aquatic educational courses?

(Please check all that apply)

- Aerobics and Fitness Association of America (AFAA)
- America Council on Exercise (ACE)
- Aquatic Exercise Association (AEA)
- Aquatic Therapy & Rehab Institute, Inc. (ATRI)
- Canadian Aquafitness Leaders Alliance Inc. (CALA)
- Can-Fit-Pro
- Showme Aquatics & Fitness
- The National Center on Physical Activity & Disability (NCPAD)
- United States Water Fitness Association, Inc. (USWFA)
- OTHER:
- None, I have not taken any continuing aquatic educational courses.

24) Do you currently provide professional preparation in aquatic therapy?

- Full Time
- Part Time
- None

25) Have you taught aquatic therapy principles/practices at conferences/workshops?

- No
- Yes

If "Yes" Please provide examples:

26) Have you done any research using Aquatic interventions/techniques?

- No
- Yes

If "Yes" Please provide examples:

Thank You for Completing This Survey
