

SLOVENIA 2025 – IHA CONFERENCE ABSTRACTS

1. Neurodiversity. A brief overview and strategies we can adopt when applying the Halliwick Concept.

Author: Dawn Moore – Halliwick AST

Introduction

Over the past few decades, the nature of the disabilities that swimmers present with has changed. Halliwick AST Clubs report that swimmers with disabilities associated with Neurodiversity now far outnumber other swimmers. The skills of the Halliwick Concept remain at the centre of the water activities but Instructors need help to understand the swimmers' disabilities and how to develop a wide variety of strategies to facilitate the swimmers' skill acquisition. Halliwick AST is therefore in the process of developing a learning package for Instructors.

The Objectives of the Project

- To develop learning resources for Halliwick Instructors that will enable them to better understand the needs of our evolving Neurodiverse society within the water.
- To enable Halliwick Instructors to provide effective, safe and enjoyable sessions for all by adapting the skills of the Halliwick Concept.

The Learning Resources

- Two videos have been made
 - The first illustrates the sensory overload experienced by an autistic person as she walks to the pool and the calming effect of entering the water.
 - The second shows an adaptive swimming session for a person with complex disabilities including Dysphagia.
- **An hour-long presentation in person or on-line live**

This will explain how Halliwick skills can be used and adapted for swimmers with various disabilities. It will be partly interactive to enable Instructors, Helpers, Parents and Carers to share experiences of what has worked well. There will be opportunities to recognise that what works really well for one swimmer may be entirely ineffective for another.
- **A handout - A chapter from a Book by Donna Williams.**

This explains various perspectives from a range of children with the same diagnosed disability who have completely different presentations. This will be prior learning for the participants.

Publication, Reach and Distribution.

The aim is for the learning package to be delivered to Halliwick AST club instructors, starting with a small number and then widening the reach with invitations on social media as well as direct communication. We intend to develop a group of experienced instructors who will take on the role of Training Officers who will deliver the package and start to develop other learning resources. The package will be introduced on the Foundation Courses as this will

include, Swimming Teachers, Special Educational Needs (SEN/ALN) school staff, Therapists and Pool managers.

The Halliwick AST Training Officers will be encouraged to visit schools and swimming clubs to further develop skills and knowledge of the Halliwick Concept.

Collaboration with the IHA

Neurodiversity exists worldwide. We would welcome and really appreciate input from the IHA Conference delegates and the wider Halliwick Community. By working together, we could deliver learning resources that would ensure the Halliwick Concept is included in the various approaches that are in the developing world wide management of Neurodiversity.

The Presentation at the Conference

We aim to present the videos, aspects of the hour long presentation and the reference for the hand out.

2. **Title:** An exploration of the value of Hydrotherapy Exercise on Cancer Support Clients.
Author's Name(s): Joanne Courtney Scanlon
Institution(s): MTU North Campus, Tralee
Introduction

This thesis explores the value of hydrotherapy exercise for cancer support clients undergoing treatment, evaluating its physical and psychosocial benefits on health-related quality of life (QoL). A comprehensive search of electronic databases, including PubMed, ResearchGate, and ScienceDirect, was conducted until November 2024 to examine relevant literature. Hydrotherapy, a water-based therapeutic approach, has long been recognised for its positive effects, such as pain relief, improved joint mobility, and enhanced muscle coordination. The therapy's buoyancy and temperature properties aid in muscle relaxation, increase blood circulation, and support healing, particularly in cases of chronic pain and lymphedema. Additionally, studies suggest that hydrotherapy can alleviate fatigue, stress, and anxiety, contributing to better sleep and overall wellbeing. The research highlights cancer patients' common struggles with physical and psychological side effects such as fatigue, pain, and depression, which can severely impair QoL. Hydrotherapy, as a low-risk and cost-effective therapy, offers promising results in managing these symptoms, improving patient outcomes, and enhancing QoL. Despite existing evidence, further studies are needed to specifically target cancer support clients and refine intervention strategies. With cancer's growing prevalence, there is a critical need to explore effective therapeutic options like hydrotherapy to improve the health and wellbeing of cancer patients.

Methods

Phase 1: The organisation is carrying out their own research through an online questionnaire. evaluating their current Hydrotherapy Programme

(N = 12 pax.) Open ended questions x5.

An analysis will be carried out on the findings. Thematic coding.

Phase 2: A follow up Mixed Method Study will be carried out Jan – March 2025.

Results of phase 1 will guide the data collection of Phase 2. Further exploration of the data gathered in phase 1 using interviews

Results

Phase 1 results:

7 questionnaires were received and were thematic coded, results below:

Experience quality, health benefits and social and atmosphere were the most common themes.

Phase 2:

The results above will guide the interview questions for phase 2 which will be completed before May 2025.

To be completed before May 2025.

Conclusion

Since hydrotherapy has a positive effect on disease prevention, treatment, and rehabilitation in addition to health promotion, it is a reasonable presumption that it should be employed as an effective therapeutic program. It makes the most of water's qualities and benefits and is regarded in clinical and alternative medicine as having great therapeutic benefits with few side effects. The studies show improvements in pain, fatigue, QoL and wellbeing in many cohorts but more studies are needed to identify effective interventions as stated by Riegel, et al., (2019) and Nissim, et al., (2024) in cancer support clients specifically. Few studies have particularly looked at how aquatic exercises impacts cancer support patients, the psychosocial benefits on QoL, clients' attitudes towards Hydrotherapy as a therapeutic regime and what physical attributes / qualities they receive from hydrotherapy. Due to the poor methodological quality of current studies it is difficult to draw firm conclusions on the therapeutic effect of hydrotherapy in cancer support clients (Nissim, et al., 2024). There is a clear need for further efforts to improve health and physiological and psychological parameters in this population given the rising incidence of the disease and the rising number of breast cancer survivors (Wang, et al., 2022). The aim of this study is to explore the effectiveness of hydrotherapy exercise by examining the psychosocial benefits of hydrotherapy on health-related quality of life, attitudes towards hydrotherapy as a therapeutic regime and examining the physical attributes and qualities cancer support clients get out of hydrotherapy.

3. **Title:**An Exploration of the Perceived Effects of an Aquatic Rehabilitation Program on its Students' Psychological Well-Being and Physical Health

Author's Name: Leigh Joan McMillan & Brid Browne

Institution: Munster Technological University Kerry Campus

Introduction

This study will explore the effects of delivering aquatic rehabilitation on the instructors' psychological well-being and physical health. 12 university students will take part in an aquatic rehabilitation module, in which they will engage with a client to provide one-on-one aquatic

therapy. The clients will present with varying impairments, which the students will create and deliver tailored aquatic rehabilitation programs to ameliorate. The students will have passed a prerequisite course the semester prior, which will have educated them on the conditions they may encounter and techniques that can be utilised in the rehabilitation program.

Research is abundant on the effects of receiving aquatic rehabilitation (Brody and Geigle, 2009; Cole and Becker, 2004; IHA Education and Research Committee, 2010; Schoedinger, 2024), however, there is a gap in the literature surrounding how providing this service affects the aquatic therapist. This study will examine the participants before and after in-pool sessions, to observe any changes in their self-reported psychological well-being, blood pressure, handgrip strength and balance.

Methods

There are two points of data collection on week one and week 6 of a 12-week intervention program. Data collection will take place and be recorded within an hour prior to the first in-pool session beginning, and within 20 minutes after the in-pool session is completed. Participants will arrive to the pool in staggered time slots, with a maximum of 4 participants per hour.

Psychological well-being assessment data will be collected via Ryff's Psychological Well-Being scale with an estimated time of completion between 6-8 minutes. The 3 physical assessments will be completed in the following order to ensure ideal environments are created: blood pressure, handgrip strength then balance. Blood pressure data will be collected with a blood pressure cuff, handgrip strength data will be collected with a Dynamometer, and balance data will be collected with a stopwatch. These physical health values will be recorded in SPSS immediately, under the assigned participant's ID number.

Data will be analysed through SPSS after the first and second data collection. Participants will be issued randomised identification numbers, and the three physical values and one psychological value will be input as scales. Short-term effects will be determined by comparing data from before they enter the pool to after they exit the pool, for week one and week six separately. The long-term effects will be determined by comparing data from after they exited the pool in week one to before they entered the pool in week six.

Results

The study will begin January 2025 and be complete by May 2025 with results available for the conference.

Conclusion

The aim of the study is to determine how an aquatic rehabilitation program can impact the participating instructors' psychological well-being and physical health. Its results will identify the impact of physical and psychological effects on the instructor delivering aquatic therapy. As the instructors in this research are students it could lead to the promotion of the aquatic modules and aquatic activities within the university to further benefit students' psychological well-being and physical health.

References

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4. Title: Halliwick: A Multidisciplinary Opportunity Making Impact.

Authors: Carol Jennings, Clinical Social Work. CEO Water Wombats, waterwombatscanberra@gmail.com. Dianne Walton, Masters in Counselling, Family Counsellor. <https://www.waterwombats.com/>

The abstract below address the following Criteria:

1. Halliwick & Competitive swimming refer to regular, competition with timehandicap, Paralympic, Special Olympics.
- 5.Halliwick and Mental Health (therapeutic benefits beyond physical rehabilitation eg. emotional and behavioural outcomes).
- 6.Combining Halliwick with other therapeutic approaches (physiotherapy, occupational therapy, cognitive-behavioural therapy etc)

Abstract

Since 2019, WaterWombats has provided an adapted swimming and water safety program for children and adolescents with diverse needs. The program currently supports 70 families, focusing on children and youth aged 0-20 years.

WaterWombats integrates the aquatic methodologies of Halliwick and Watsu with other therapeutic approaches, creating a holistic and inclusive program. The expertise of Allied Health professionals, who are also registered swimming coaches, ensures participants receive comprehensive support tailored to their individual needs. It integrates interdisciplinary knowledge from Social Work, Psychology, Exercise Physiology, Play Therapy, and Counselling to create a comprehensive care plan for participants, offering wraparound services that benefits the entire family.

While the primary goal of the program is to provide adapted and personalised swimming programs, the WaterWombats program incorporated 3 key approaches, Cognitive Based Therapy (CBT), Trauma Informed and Strength Based Approaches within Aquatic Therapy. CBT helps children and adolescents reshape their beliefs and behaviours, enabling them to

manage negative emotions more effectively. By integrating CBT with Halliwick Method in a neuro-affirming approach, the cognitive elements of Halliwick are applied to create a psychologically safe environment. This allows young individuals to explore their responses to social situations while feeling secure, which has a positive impact on their nervous system and memory. This environment fosters safe social learning, building trust and self-confidence as they practise and internalise healthier social responses.

Embedding Trauma-informed and strength-based practices into all water and land-based activities has reduced the incidences of aggression in the pool. Allied Health professionals provide ongoing professional development focused on trauma and strength-based approaches, while swimming coaches collaborate with them to design classes and refine coaching techniques. This has made a marked impact on attendance and performance in the pool for participants. The team are skilled in recognising the signs and symptoms of family violence responding compassionately to distressing situations and individuals in crisis. Data collected since 2022 revealed a high proportion of families attending the service were affected by family violence (including sexual, physical abuse, and coercive control), relationship breakdowns, financial hardship, and substance misuse.

WaterWombats enhanced the service capability and capacity to manage crisis, service referrals, and threat containment. The program addresses barriers faced by people with disabilities, drawing on extensive experience from team members in the Allied Health field to support marginalised groups, including children in foster care. Australian Bureau of Statistics data shows 5.9% of women with disabilities faced abuse, compared to 4.3% without. Emotional abuse and exposure to domestic violence are also significantly higher.

There is strong and concerning evidence highlighting the need to upskill community and sporting organisations to further inform vulnerable staff and volunteers, particularly those with disability themselves who face increasing isolation and physical abuse. This calls for greater awareness and targeted training within community and sporting organisations to help reduce family and intimate partner violence. Developing a knowledgeable and effective workforce capable of addressing complex and escalating crises is crucial.

5. *Title:* Water Through the Screen. The inevitable future of online exams .

Author: Anna Olasińska, MSc., PT, Senior Halliwick Lecturer (IHA Rec.)

Keywords: lecturer's exam, on-line, contact, feedback

Abstract:

Over the past 3 years, I have had the pleasure and honor of being an examiner for two trainee lecturers in Denmark and Israel. There would be nothing extraordinary about this if not for the fact that for the first time in the history of IHA, one of them took place online. During my presentation, I would like to share my experiences and present the benefits, differences, difficulties and challenges from the perspective of the organizers, participants, trainee lecturers,

mentors and the examiner. This experience was not only valuable in terms of content, but it allowed me to face my own fears, limitations, doubts and change some of my views.

6. Halliwick Gala competition online program training

Hanne Bjørling Grøn. On behalf of the national Danish Gala committee

You will have the possibility to participate in a training session/workshop, based on real data, in how to use the online competition program efficient and seamlessly. We will go through a full competition from creation, registration of swimmers, changing swimmer information, creating and changing heats, entering results, printing needed documents during the competition, creating extras, semifinals, finals and relays to printing diplomas and swimmer ranking. You will be able to try it yourself, if you are prepared with a computer, with internet connection. Learning is by doing!

7. Halliwick Concept and Competitive Swimming for people with neurodiversity

(Special Olympics, SU DS, IPC, Virtus)

In Velenje, a small town (approx. 30.000) people in Slovenia, we began in 2006 with a small group of kids with neurodiversity. Later we include swimmers with motor diversity. In the swim club Velenje we have 230 swimmers, 42 of them (we call them Dolphins) with different disabilities, I would rather say This Abilities. The swimmers in Dolphins group always starts with Halliwick 10 points. After mastering all 10 points can join a competitive or recreational group.

Today we include and participate in many different sport associations: , IPC – International paraswimming Association, Virtus - a part of IPC but just for intellectual disabilities, World ability sport – a part of IPC but just for amputees and wheelchair users, SU-DS - Sport Union for Down Syndrome, DSISO – Down Syndrome International Swimming organisation, IHA - Halliwick international association, Special Olympics, and Slovenian Swimming Association.

In IPC, S14 are athletes with an intellectual Impairment and they have a restriction in intellectual functioning and adaptive behaviour that affects conceptual, social, and practical adaptive skills required for everyday life. This Impairment must be present before the age of 18. Mostly in S14 are swimmers with a range of IQ 70-75. European youth paragames IPC are also very popular (since 2012).

Virtus is also an appropriate association for swimmers with mental diversity, in the year 2024 Virtus became a member of IPC.

At Virtus, there are 3 different classes:

1. Intellectual impairment
2. Significant Impairment – all together: Down syndrome, Mosaic syndrome, etc.
3. People with high functional autism

For people with Down syndrome there are European and World DSISO swimming championships and European and World Trisome games in SU-DS.

The **Special Olympics** is a largest global movement that provides sports training and competition for individuals with intellectual disabilities. It was founded in 1968 by **Eunice Kennedy Shriver** and aims to promote inclusion, acceptance, and empowerment through sports. The 2010s have seen remarkable growth in the visibility and power of the Special Olympics to change lives worldwide. In the decade, our Unified Sports program exceeded 1 million participants; the Health program expanded dramatically thanks to public and private investments.

MATP is a unique program specifically designed for athletes of all ages with Profound and Multiple Learning Difficulties (PMLD) or complex needs.

Special Olympics Swimming is one of the most popular and inclusive sports in the Special Olympics program. It allows athletes of all ability levels to compete in various events, from short sprints to longer endurance races.

In Special Olympics, we are not dealing with classification (4 levels: mild, moderate, severe, and profound of Intellectual disability based on the IQ score as well as their level of adaptive functioning, by IPC) just abilities of the swimmer (like in Gala Halliwick). The system of the competition is easy - in each swimming group, swimmers can get medals. In the group, there are swimmers at approximately the same time. Time is predicted by a coach (it must be in 15 or 20% range) or by swimming in prelims.

The swimming program has all disciplines from the World Aquatics program. There are also some Unified swimming disciplines: unified relays and Unified open-water swimming. In recent years, the Michael Phelps Foundation was accepted as the leader in education for swimming coaches in the Special Olympics.

8. Effects of Water Immersion on Respiratory Muscle Strength in Patients with Duchenne Muscular Dystrophy: A Pilot Study

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<https://fr.ieu.edu.tr/tr>
Tel: 0 232 488 5145

Purpose: Duchenne muscular dystrophy (DMD) is characterized by progressive muscle weakness, including the respiratory muscles, leading to significant pulmonary complications. Patients with DMD develop restrictive respiratory syndrome, resulting in a progressive decline in pulmonary function. Vital capacity (VC) decreases over time, with significant impairment typically observed by age 21. Aquatic therapy has been shown to provide physiological benefits in patients with DMD, particularly by enhancing motor function and promoting balanced muscle activation. However, the specific pulmonary responses to water immersion in

this population remain largely unexplored. This pilot study aims to investigate changes in inspiratory and expiratory muscle strength in individuals with DMD during water immersion.

Methods: A cross-sectional study was conducted with four patients diagnosed with DMD (mean age: 11.5 years). Respiratory muscle strength, including maximal inspiratory pressure (MIP) and maximal expiratory pressure (MEP), was measured in two conditions: on dry land and during water immersion at clavicle level.

Results: Due to the limited sample size, statistical analyses were not performed. However, measurements indicated a decrease in MIP during water immersion (-15%, -17%, -7%, -30%), while MEP showed an increase (13%, 14%, 20%, 32%).

Conclusion: Clavicle-level water immersion alters respiratory muscle strength in patients with DMD, leading to a reduction in inspiratory muscle pressure and an increase in expiratory muscle pressure compared to dry-land values. Further studies with larger sample sizes are needed to confirm these findings and explore their clinical implications.

9. *"HASAM-Underwater Bubble Blower and HASAM-Floating rings"*

Speakers: HASAM, Lecturer, Christine Hjortkjær

HASAM's instructors and lecturers have developed new equipment for water activities. This presentation will cover the ideas behind these innovations, their purposes, and provide examples from pool work.

The Underwater Bubble Blower allows swimmers to enjoy the sensory benefits of bubble-blowing without fully immersing their mouths, making it ideal for those with anxiety or difficulty submerging their faces. The HASAM Underwater Bubble Blower is designed to float.

The Floating Rings, available in various sizes and colors, are versatile tools for different aquatic activities. Unlike traditional float rings, these are completely sealed, preventing water entry and reducing the risk of fungal growth, ensuring better hygiene and safety. These rings help develop important skills such as rotational control, hand-eye coordination, and spatial awareness, and can be used to introduce dual-task challenges.

10. **Halliwick Concept and Competitive Swimming for people with neurodiversity**

(Special Olympics, SU DS, IPC, Virtus)

Katarina Praznic

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recent years, the Michael Phelps Foundation was accepted as the leader in education for swimming coaches in the Special Olympics.

11. HALLIWICK PARENTAL WATER - CONFIDENCE SCALE

MOSCHOLOURI CHRYSOULA., P.T, Halliwick Senior Lecturer, PhD cand. Human Performance and Rehabilitation Lab (HPRL). Department of Physiotherapy - University of Thessaly, Lamia, Greece.

Background: The practice of hydrotherapy in physical therapy has been developed on the scientific basis of hydrodynamic theory. Hydrotherapy based on Halliwick Concept (McMillan 1949), is referred to as one of the most widespread water intervention techniques for children with disabilities. Equally important, for the children with disability, are the dynamics of the child's environment. Parents' belief in their ability to successfully fulfill their role as parents is referred to as Parental self-efficacy (PSE). Studies in different theoretical fields and professions report that parents' confidence in their parenting ability is an important variable both for parenting and in child interventions. An assessment scale that addresses the parental role in water intervention and gives a complementary picture of the child's and family's capacity within the context of a family-centered approach and the new standards as defined by the ICF, has not yet been developed.

Purpose: Building a self-report questionnaire that evaluates parental confidence in managing their child in the water, as parents are trained in the basic principles and skills in the water in order to extend the benefits of hydrotherapy according to Halliwick concept. The purpose is to focus primarily on the parenting views themselves and not on (our own) beliefs or attitudes. To use this questionnaire to evaluate water intervention and highlight the feasibility of using a self-report approach in both research and clinical settings. The importance of making this scale is great as a rating scale addressing the parental role in water intervention has yet to be developed. **Methods:** An in vivo and a Web-based survey was administered to parents of children aged up to 16 years old between January 2022- May 2022. Statistical analysis was performed using the IBM SPSS 22.0.

Results: A total sample of 60 parents participated (78.3% mothers and 21.7% parents). A 15-item scale with a six-point response format was developed. Cronbach's alpha is 0,89 of the total scale. And three subclass are suggested with Cronbach's alpha ranged from 0.74 to 0.89. Test-retest reliability $r(15) = 0.94$, $p < .001$ and I.C.C: 0.94. Test-retest reliability (N=20 parents after 7 days from the first filling), using Spearman's C.C, all correlation coefficients are statistically significant at the 1% level of significance and strong. The same conclusions are reached with the use of ICC. Construct Validity using Spearman C.C shows slightly positive correlation with HAAR test but negative with SWIMM test and GMFM.

Conclusions: The present findings indicate that the Greek version of 'Parental Water - Confidence Scale Based on Halliwick Concept' could be a valid and reliable measure to assess parenting self-efficacy. The results suggest that not only parents of children with CP but also parents of typical development children might facing the same issues concerning parental

confidence in water. Further assessment by using each sub-scale in bigger sample. An English version of the scale is also under translation and validation.

Implications: In the field of paediatric water therapy, concerning parental guidance and support in taking care of their child, leading to better hydrophysiotherapy and overall results both for children and family.

Keywords: Halliwick Concept, parental confidence, test development, assessment

12. Gain Balance Control and Proprioception for Neurological Patients Based on the Halliwick Concept

Dr. Konstantinos Chandolias, Physiotherapist, Assistant Professor, Department of Physiotherapy, University of Thessaly, Senior Halliwick Lecturer

Introduction:

Neurological conditions often result in impaired balance, reduced proprioception, and limited functional mobility, significantly affecting patients' independence and quality of life. Aquatic therapy offers a unique therapeutic medium for neuromuscular re-education. The Halliwick Concept, developed specifically for use in water, emphasizes mental adjustment, trunk and head control, and balance restoration. This presentation explores the application of the Halliwick Concept as an evidence-informed approach to improve postural control, proprioceptive awareness, and dynamic balance in individuals with neurological impairments.

Methods:

The Halliwick Concept was applied in a series of structured aquatic therapy sessions, integrating its Ten-Point Programme to progressively challenge and retrain the sensorimotor system. Emphasis was placed on developing axial and rotational control, promoting trunk stability, and facilitating balance reactions through water-based perturbation techniques. Proprioceptive input was enhanced through multidirectional movement in a gravity-reduced environment. Case-based examples and clinical observations were used to illustrate adaptations in patients with diverse neurological diagnoses (e.g., stroke, multiple sclerosis, cerebral palsy).

Conclusion:

The Halliwick Concept represents a safe, adaptable, and highly effective method for enhancing balance control and proprioception in neurological patients. Its structured progression and reliance on the properties of water allow patients to explore movement, regain motor control, and build confidence. Aquatic therapy based on this concept can be a valuable component of multidisciplinary neurorehabilitation programs, supporting the recovery of functional independence and the reintegration of individuals into daily activities.