

9/8/2017

# CHALLENGE WATER FUN

## INTERNATIONAL HALLIWICK CONFERENCE

2017

WATER FUN

Balance

Relax

Water

Body parts

Pressure

Tail drag

HI

Buoyancy

GIANTS STRIDES

Communication

Concept

LJUBLJANA



*Organised by University Rehabilitation Institute of Republic Slovenia  
and International Halliwick Association*

**Challenge water fun**  
**Abstract book**  
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**International Halliwick conference:**  
**University Rehabilitation Institute Republic of Slovenia**  
**Ljubljana, 2017**  
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## Conference program

	Friday, 8 <sup>th</sup> September	Saturday, 9 <sup>th</sup> September	Sunday, 10 <sup>th</sup> September
9.00		<b>9.00 – 11.00 Learning</b> <i>Chairs: Foens Knudsen B., Filipčič T.</i>  <b>9.00 – 9.30 Foens Knudsen B.:</b> How to speed up the learning process for adults	<b>8.30 – 9.30:</b> <b>Hadar-Frumer M., Weigenfeld-Lahav I.:</b> Different ways to control the movement in water (pool work)
10.00	<b>IHA General meeting with elections</b>	<b>9.30-10.00 Pulec Lah S., Filipčič T.:</b> Understanding and Managing Students with ADHD during swimming lessons  <b>10.00 – 10.30 Gimeno H.:</b> COOP  <b>10.30 – 10.50 Korelc S., Snedic A., Groleger Sršen K.:</b> COOP in Halliwick program (case presentation)  <b>10.50 – 11.00 Discussion</b>	<b>10.00– 11.00 Free oral presentations</b> <i>Chairs: Yoshei Y., Korelc S.</i>  <b>10.00 – 10.20 Hadar-Frumer M., Weigenfeld-Lahav I.:</b> Are we really never going to use floatation aids?  <b>10.20 – 10.50 Yoshei Y.:</b> Hydro-Zen: The Pool as an Adapted Sensory Environment  <b>10.50 – 11.10 Škvarč D.:</b> Development of Halliwick programs in CIRIUS Vipava  <b>11.10 – 11.25 de Lourdes Garcia M.:</b> Case presentation of a patient with limb-girdle muscular dystrophy
11.00		<b>Break for coffee</b>	
11.30		<b>11.30 – 12.45</b> <b>Gimeno H., Korelc S.:</b> How to set COOP goals in Halliwick (workshop)	<b>11.45 – 12.45</b> <b>Krušec K.:</b> Prevention program for elderly people (pool work)
13.00	<b>Lunch/ coffee</b>	<b>Lunch/ coffee</b>	<b>11.35 – 11.45 Hjortkjaer C.:</b> Use of Halliwick Concept in Neurorehabilitation  <b>11. 45 – 11.55 Chandolias K.:</b> Halliwick Researches that have been completed or are in progress in Greece  <b>11.55 – 12.05 Olasinska A, Kampa M:</b> Group sessions as a response to the main developmental needs of children  <b>12.05 – 12.15 Christodoulaki E., Chandolias K., Hristara-Papadopoulou A., Iakovidis P.:</b> The effect of hydrotherapy on the respiratory system of children with cerebral palsy
14.00	<b>14.00 – 14.20</b> <b>Opening ceremony</b>  <b>Novinc Inge:</b> How swimming changed my life  <b>14.20 – 16. 00 Participation</b> <i>Chairs: Groleger Sršen K., Ten Nappel H.</i>  <b>14.20 – 15.00 Ten Nappel H.:</b> ICF with focus on participation  <b>15.00 – 16.00 Hadar Frumer M.:</b> Halliwick and participation- the impact of the Halliwick based water activity on the participation of children in their various daily lives activities	<b>14.00 – 16.00 Free oral presentations</b> <i>Chairs: Hadar-Frumer M., Burja C.</i>  <b>14.00 – 14.20 Ibrulj S., Flisar D., Korelc S., Groleger Sršen K.:</b> Swimming skills in Parkinson disease patients with deep brain stimulation  <b>14.25 – 14.50 Alt N., Alt D., Hadar-Frumer M.:</b> Applying and Assessing Case-based Learning in a Halliwick Method Training Course  <b>14.50 – 15.20 Burja C., Gerbec A.:</b> Halliwick and sensory integration  <b>15.20-15.40 Vlahović H., Lulić Drenjak J.:</b> Halliwick and sensory integration in swimming club  <b>15.40 – 16.00 Discussion</b>	<b>12.15 - 12.30 Closing ceremony</b>

## Conference program cont.

	Friday, 8 <sup>th</sup> September	Saturday, 9 <sup>th</sup> September
16.00	Break for coffee	Break for coffee
16.30	<p><b>16.30 – 18.30 Participation</b>  <i>Chairs: Sršen A.,  Olasinska A.</i></p> <p><b>16.30 – 16.50 Sršen A., Perzel I.:</b> From the Halliwick Concept to the Paralympic Games (Long-term Development of Swimmer)</p> <p><b>16.50 – 17.10 Browne B.:</b>  A phenomenological study of parental and child perspectives on their participation in the Halliwick program</p> <p><b>17.10 – 17.30 Barmatz C., Sharon H., Dotan Y., Sege G.:</b> Rehabilitation, Disability and Participation: "Water Is Medicine"</p> <p><b>17.30 – 17.50 Olasinska A.:</b>  "No matter how. Important that together with others!" – Halliwick Gala</p> <p><b>17.50 – 18.10 Sršen A.:</b> Wholehearted coaches</p> <p><b>18.10 – 18.30 Discussion</b></p>	<p><b>16.30 – 17.50 Free oral presentations</b>  <i>Chairs: Thomson Ann,  Barrett Ursula</i></p> <p><b>16.30 – 16.50 Ben-Anat N.:</b> NO means NO!!!  Halliwick method as a tool to work with victims of sexual assault</p> <p><b>16.50 – 17.20 Barrett U.:</b>  Multimedia and Halliwick</p> <p><b>17.20 – 17.40 Ronchi K.:</b>  Swimming teaching techniques for children with different impairments</p> <p><b>17.40 – 17.50 Discussion</b></p>
		<p><b>18.00 - 19.00 Gala group meeting</b></p>
		<p><b>POSTER PRESENTATION</b></p> <p><b>17.50 – 18.10 Hagani Shapira N., Natan D.:</b> Getting over fear of movement with Halliwick mental adjustment: a case study</p>
18.30	<p><b>Buffet and get together at URI SOČA for all participants</b></p>	<p><i>Time for transfer to the city center by bus</i></p>
20.00		<p><i>Ljubljana castle – dinner for all participants (against additional fee)</i></p>

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## Novinc Inge: Halliwick and me

*Vipava, Slovenia*

I'm Inge. I'm 14 years old. I was born with cerebral palsy, GMFCS level IV. I have severe scoliosis, so water has an important role in my life.

I'm very lively by nature, I have a communicative spirit and I'm very optimistic. I'm open-minded with a strong wish to explore new things. I know that the word cerebral palsy means barriers and limits to people. But it isn't like that. A person with cerebral palsy needs to know how to adjust and handle things the best way she or he can.

When I was three, I first experienced water with Mrs. Sonja, my first teacher. She is a very cheerful person and she believed in me, she knew that I could succeed. That was my first time and I was really scared. Water was like a giant monster with very long hands that were reaching and inviting me. I was imagining the water pulling me into its murky depths and never letting me go. But my fear grew smaller and smaller after many practices. Sonja was the person that made something immensely important. I became a friend with the water.

After a while, other therapists came into my swimming experiences. I was improving and working on straightening the correct movement patterns. When I was seven, big changes came into my life. I did my first swimming strokes and this was excellent. I have incredible momentum and willpower to deal with challenges ahead of me. I have started to believe in myself, I started school in a new environment with new friends. My physiotherapist and good friend Klavdija Krušec pushed me to go a little bit further. She introduced me to Mrs. Boža Madić, physiotherapist and a great expert in the Halliwick method.

The first time we met I was full of doubt and fear. Am I the right person, could I make it? Mrs. Boža had a lot of knowledge and experiences and I was just a beginner. But when we shook hands for the first time, I found out that this was real, not a game, but work, hard work. This moment was a turning point in my swimming path. We were practicing regularly, twice a week for two hours. We started with simple exercises and slowly increased the difficulty. Every success gave me courage and I worked harder. Sometimes my practices were longer. But they were also days, dark days, when I was too hard with myself. I lost my power and strength. But then my inner voice appeared. » Don't quit! Fight! « My strong will for movement came back.

Halliwick method was a base for my improving swimming abilities. It allows me to know the water and perceived it the other way. I worked on different swimming technics like free style, backstroke, breaststroke, butterfly stroke and others. I like all, but my favorite one is the butterfly stroke.

Swimming means a lot to me, physically and mentally. These are my moments. Jumping into the pool makes me feel freedom, all my fears and concerns are gone. Water washes my fears and worries away. This is my place, where I can be independent, without barriers and obstacles. While swimming, I go below the water level and everything disappears. I'm just myself, me and my body. Going with the flow and listening to the rhythm and rustling waves.

My head goes empty and very light. I have no control. My eyes are focused on one point on other side of the pool. Words in my head are speaking out loud: » Don't think! Don't worry! Go with the flow! « That is my moto in life: » Relax, enjoy and go with the flow! Nothing can stop you! «

I want to say my deepest thanks to all that helped me to make my wish come true. I couldn't do without you. I'm grateful. Thank you very much with all my heart.

Thank you for listening!!

## Invited speakers

### Ten Nappel Huib: International Classification of Functioning, Disability and Health

*WHO-FIC Collaborating Centre in the Netherlands*

The lecture will present the principles and content of the ICF, but with a focus on the principles and less on the complete content of the classification. Participation and inclusiveness are the key words here.

#### Introduction

##### What is the ICF?

The International Classification of Functioning, Disability and Health (ICF) provides a standard language and framework for describing and organizing information on functioning and disability. The ICF conceptualizes a person's level of functioning as a dynamic interaction between her or his health conditions, environmental factors, and personal factors.

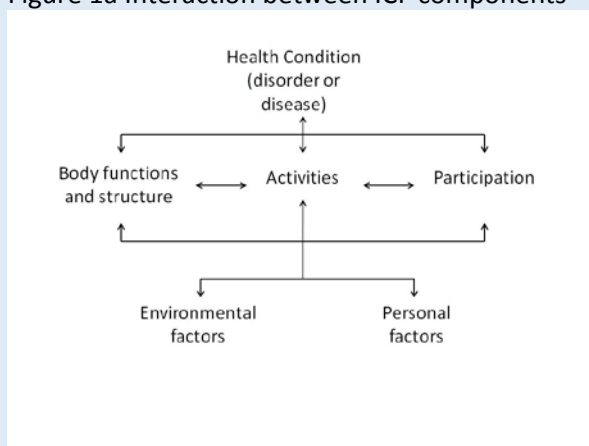
Components of functioning and environmental factors are classified in the ICF; diseases and other health problems are classified in the International Statistical Classification of Diseases and Related Health Problems (ICD). The ICF was developed by the World Health Organization (WHO) and was endorsed by the World Health Assembly in May 2001. The newest 2017 version is an updated version, including a high number of ICF-CY codes and classes.

##### Components of the ICF

The ICF defines functioning and disability as multi-dimensional concepts relating to:

- The body functions and structures of people
- The activities people do and the life areas in which they participate; and
- The factors in their environment that affect these experiences. For each of these components, the ICF provides a hierarchy of classifications and codes. In the ICF, a person's functioning is conceived as a dynamic interaction between health conditions and environmental and personal factors (Figure 1a). An illustration using cerebral palsy as an example is at figure 1b.

Figure 1a Interaction between ICF components



Source: World Health Organization 2001. International Classification of Functioning, Disability and Health. Geneva: WHO.



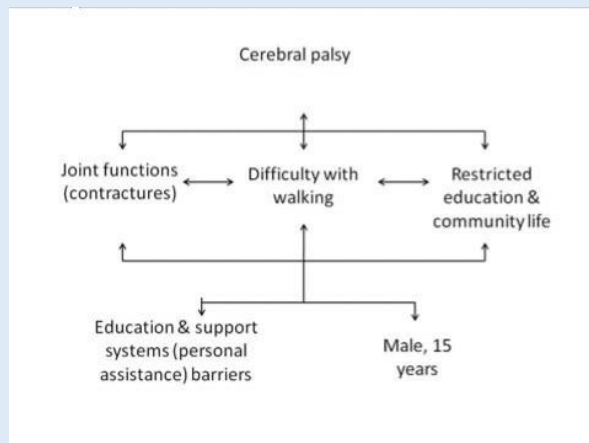


Figure 1b Illustration of functioning associated with cerebral palsy

### ICF definitions

- the **body functions and structures**, and **impairments** thereof (functioning at the level of the body);
- the **activities** a person performs and the **activity limitations** he or she experiences (functioning at the level of the individual);
- the **participation** or involvement of a person in all areas of life, and the **participation restrictions** the person experiences (functioning of a person as a member of society); and
- the **environmental factors** which affect these experiences (and whether these factors are facilitators or barriers).

### Value of using ICF

The ICF provides a universally applicable framework and language to advance the development of policies and services to meet the needs of people with disability. The needs of children with disability are captured using the ICF version for children and youth (ICF-CY).

The ICF:

- recognizes the role of environmental factors in the creation of disability and the importance of participation as a desired outcome, as well as underlying health conditions;
- is in tune with current trends towards a greater focus on long-term health and functional outcomes in the health and community services fields;
- presents an overarching conceptual framework for the development and analysis of joined up data to support a wide range of government policies;
- incorporates key concepts from a wide range of fields relating to human functioning, and offers an extensive menu from which concepts and items can be selected for the design of information systems, or for targeted clinical or research applications; and
- provides detailed hierarchical sets of codes to assist in the collection of data.

But most important: ICF changes the way we can look at people, it is a true paradigm shift!

## **Hadar Frumer Merav:** Halliwick and participation - the impact of the Halliwick based water activity on the participation of children in their various daily lives activities

*Beit Issie Shapiro, Israel*

### **Background:**

Working in water within the Halliwick approach, promotes the children's ability in acquiring the mastery of swimming skills. Alongside the swimming activity, the instructors place great emphasis on promoting the physical, emotional, cognitive and functional abilities of the swimmers. In recent years, there has been a growing understanding that we need to integrate water targets within the ICF framework.

### **Methods:**

In a questionnaire distributed to instructors and parents, we wanted to understand the relationship between the activity in water (focused on the Halliwick principals) and the goals of participating in daily life as defined in the ICF framework. In order to do so, we turned to some of the Halliwick lecturers and, together, we have developed a questionnaire that its basic questions were taken from the "Comprehensive ICF core set for children & youth with cerebral palsy from birth to 18 years of age"

**The structure of the questionnaire:** We developed two almost identical questionnaires - One for Halliwick instructors and the other for parents and care-givers. Each questionnaire contained 3 parts: (1) general information, (2) 14 ICF categories (28 questions) and (3) Questions about the relevance of the questionnaire. The main topics we wanted to examine by the questionnaire were:

1. Is it possible to use categories from the ICF framework, in order to set functional goals in Halliwick water activities?
2. How often do Halliwick instructors use these components in their goal setting?
3. What do the parents think about these goals and their importance?

The main questions that we examined by the questionnaires are:

1. **Total Mean Scores:**
  - Total Mean scores of instructors and parents.
  - Is there a difference between those scores?
  - Which questions got the highest scores?
  - Which questions got the lowest scores?
  - Is there a difference between parents to instructors?
2. **Instructors - Is there a correlation between the overall responses and:**
  - The method of work (one-on-one/ group/ both)
  - The Water Temperature
  - The Length of Meeting
  - The Depth of Pool
3. **Instructors – Is there a correlation between Level of Qualification & Seniority and:**
  - The general results (means)?
  - Specific attitude toward MA and Swimming?

### **Results:**

We got responses from 84 Halliwick instructors and lecturers from 14 Halliwick associations and countries and from 39 parents and care givers from 7 countries.

*During the lecture, we will present the main findings obtained in the statistical analysis of the questionnaires and try to explain the trends. At the end of the lecture, we would like to hold a discussion and see if we can come up with recommendations as a result of the outcome achieved.*

## Oral presentations

### **Sršen Ana, Perzel Ivan:** From the Halliwick Concept to the Paralympic Games (Long-term Development of Swimmer)

*Natator, Croatia*

#### **Introduction:**

Many children and adults, involved in the Halliwick concept, at one point reach the limit of abilities and motor skills that Halliwick concept can offer. The question is what next and how to include these people in further work in order to facilitate further progress and development of their motor skills and abilities in the water. In this article, we'll show you how the Swim Club Natator was organized through a swim season including club statistics. We will also show the organization of Halliwick and statistical data throughout the season.

Play'n Swim is the club's new group since September 2015 that implements Halliwick Concept with other swimming courses such as FSA (Fred's Swim Academy) swimming learning method and it's showing great results confirmed with results of SWIM tests. You will see the swimming competition system from the lowest to the highest levels of competition and a case study of a girl with proximal femoral deficiency.

#### **Aim:**

The purpose of the work is to show that the Halliwick concept is a great method that provides children, with or without disabilities, an excellent foundation for further training and advancement in water, and guides them to strive for best personal achievements through the swimming competition system.

#### **Methods:**

We used the SWIM test and observed the progress of children in the Halliwick Concept and in the Play'n Swim program. The progress of competitive swimmers is observed through the best personal results in competitions on an annual basis.

#### **Conclusion:**

The Halliwick concept is excellent for creating a base and as an implementation in swimming training combined with other methods of teaching swimming techniques. Children and people with disabilities can strive for the best personal achievements through the current swimming competition system.

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# **Browne Brid, McNamara John: A Phenomenological Study of Parental and Child Perspectives on their Participation in the Halliwick Program'**

*Institute of Technology Tralee, Ireland*

**Background:** This study investigates an aquatic based rehabilitation intervention, which incorporates the aim of removing environment and social barriers through delivery of a Halliwick program in a public swimming facility. Bartlett et al. (2006) discuss how rehabilitation research shares a common aspiration to optimize the lives of individuals living with disabilities. Similarly, to Bartlett et al (2006), this study aims to investigate what findings an intervention such as this Halliwick aquatic program has on people living with a disability. Additionally, it investigates the findings from a phenomenological approach on children with disabilities and their parents.

**Aim(s) of research:** We wanted to describe the child's experience of participating in a Halliwick program, discuss parent's outcomes for their child's participation in a Halliwick program and to identify the outcomes of participating in a Halliwick program for parents of children with disabilities.

**Methods:** This is a qualitative case study using a phenomenological approach with semi structured guided interviews. Data was analyzed through coding interviews into categories. The following criteria were set to select participants involved in this research.

The children participating in this study had to have been part of a Halliwick program for more than 5 years. They had to be between 8-13 years of age. A group interview was used to gather data and all children had to know each other before hand.

**Results:** The results of this study highlighted three main themes from both the parents and the children. In the children's interviews, the themes included incorporating technology in a session, using games as part of a swimming lesson, and the impact teaching style has on segregation versus inclusion. In the parents' interviews the main themes that emerged were parents seeing their children overcome the fears parents had for them; *the impact* segregation and inclusion has on both them and their child, as well as developing a support network among other parents of children with disabilities.

## **Conclusion:**

1. Overall participants reported having negative experiences in inclusive swimming lessons. This was due to instructors not listening to parents and how they delivered feedback, which only highlighted the child's disability to their classmates.
2. Friends were a significant factor in children having an enjoyable experience within their Halliwick session. Parents reported that fitting in was an important feeling for both them and their child.
3. Exclusion existed in relation to public swimming lesson. Although the child was present and the class was inclusive, the child with a disability was not actually being included. Parents reported this was due to lack of time and training on the instructor's part within the inclusive setting.
4. Parent found that through their child participating in a Halliwick session they saw their children overcoming the fears parents had. These fears included building confidence, having a voice, fitting in and independent living skill.
5. As a result of each of the parents spending time with each other while their child attended their Halliwick session, they formed a support network for each other. Parents reported that this support was important to them and it was one group of people who really understood what each other were going through.
6. Several recommendations for swim teachers have emerged from listening to the parent's experiences. These should be incorporated into both Halliwick and inclusive lessons to enable a positive experience for both the child with a disability and their parents. These recommendations included applying the Halliwick Philosophy to both the child and the parent sitting on the side of the pool, observing the session.

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**Caroline Barmatz, prof. Michael Heim, Hanania Sharon, Yael Dotan, Gal Segev:**  
Rehabilitation, Disability and Participation: "Water Is Medicine" young adult patients recovering from injuries, or with a disability, can function in all environments with the ability they have, thereby promoting independence and self-care

*Hydrotherapy dept., Orthopedic dept., Physiotherapy dept., Sheba Medical Center, Israel*

### **Introduction:**

Modern military conflicts result in casualties frequently suffering from multiple system damage. Patients rarely suffer from a single wound, although high velocity projectiles may cause significant damage. Patients are referred to a rehabilitation center once the initial damage has been assessed and the necessary surgery has been provided. Many of the patients still have open wounds, sutured wounds, fractures stabilized by internal or external fixators.

Upon arrival at a rehabilitation center the patients physical and mental status is assessed by a multidisciplinary team and a management protocol is established. Our center comprises of physicians, physical, occupational and speech therapists, psychologists and staff specially trained in hydrotherapy, virtual reality and gait training.

The center contains the "state-of-the-arts" equipment including an anti-gravity treadmill. Patients with open lesions and external fixators are treated by on-land physiotherapy and the remainder benefit from hydrotherapy and physiotherapy. Hydrotherapy enhances the movement of all body parts, thus addressing joint range of motion and muscle power, providing the opportunity to regain functional abilities.

Patients with central or peripheral nerve injuries are supplied with thermoplastic splints, which allow them to participate in hydrotherapy sessions. A few case studies will be used to highlight the contribution of participation in hydrotherapy in the overall rehabilitation process.

August – September 2014, 54 soldiers and 2 civilians injured in the Israel- Gaza conflict also known as Operation Protective Edge were treated in the Orthopedic ward at Sheba Rehabilitation Center, together with another 11 in the Neurological ward.

In August patients received 821 treatment sessions, in September 818, including anti-gravity treadmills. 45 patients participated in adapted physical activity in the gym, 28 patients from the orthopedic ward and 8 patients from the neurological ward received hydrotherapy, 20 patients were treated with Virtual Reality. 3 patients were fitted with prosthetic devices and returned to full functional daily activity. Penetrating missile wounds, injuries from blast phenomena and burns are the typical features of modern conventional war. Patients with cervical injuries or direct blast injuries were evaluated for vestibular disorders.

February 2015 – 15 soldiers were still receiving treatment in our daycare center.

July 2017 – three soldiers are still receiving hydrotherapy X3/W.

### **Objective:**

The objective is to examine the effect of participation in activities in water (hydrotherapy), including the use of The Halliwick Concept, on the motivation and rehabilitation of young wounded soldiers, using "Water Is Medicine" as a concept.

### **Methods:**

The study compares intervention in water to intervention on land. The intervention in both methods started in August 2014 and is being followed up until today. Neurological rehabilitation is measured by functional assessment, FIM<sup>®</sup> (Functional Independence Measure), a case study will be presented of a war veteran with SCI incomplete ASIA C, C4 – FIM – 48 on admission, FIM – 56 on discharge. The effect of participation in water activities - Hydrotherapy is measured by the use of Virtual Reality in water (video will be shown).

**Conclusions:**

From August 2014 to July 2017, 67 patients participated in the multidisciplinary rehabilitation program. Hydrotherapy was included for 36 patients. All patients showed functional improvement, patients who participated in individual and group hydrotherapy had a better quality of life post injury.

List of injured soldiers admitted to the Orthopedic Rehab department in Sheba:		
Upper limb injury	16	(shrapnel removal, plastic surgery and debridement)
EX. FIX	13	
ORIF	9	
Lower limb injury	24	(shrapnel removal, plastic surgery and debridement)
EX. FIX	13	
ORIF	11	
Head injury	11	
Eye injury	12	(3 eye evisceration)
Ear injury	11	
Nerve injury	13	(3 brachial plexus)
Vascular injury	12	
Pelvic /abdominal injury	5	
Chest injury	4	
Amputations		Bilateral BKA, BKA, SYME'S AMP
Burn injury	1	(55% 2nd-3rd degree burn)
Complications	1	DVT

Results have not yet been published.

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**Olasinska Anna:** “No matter how. It is important to be together with others!” – the Halliwick Gala Day

*Krakow, Polska*

The Halliwick Gala is a day, which is the culmination of year-long effort of many people. Above all, it is an important day for all the competitors who have come to prove to themselves and their families they are able and can do things that for others are still a big challenge.

It is also a time to meetings, conversations, pranks, exchange of experiences and good fun with people who's the positive competitiveness is joining.

The purpose of the presentation is to present the organization and how to conduct a swimming competition in a handicap system that is applied during the Halliwick Gala.

The use of the temporary handicap method equates the players' chances and gives them the opportunity to start in the same starting group without the division into a gender, age or type of disability. Competitors compete according to their abilities and the main motivation in the race is to improve their own starting distance.

The principle of competition expresses respect for the individual differences between people. The winner of the Gala is not the fastest swimmer but one who has achieved the greatest improvement of his time.

Competition in the spirit of Halliwick gives everyone an equal chance of victory, is above all barriers to direct its attention to the skills and abilities of each person.

## **Sršen Ana: Wholehearted coaches**

*Natator, Zagreb, Croatia*

### **Introduction:**

People with disabilities are the largest minority in the world, with a share of 15% and 520,437 people with disabilities living in Croatia alone, yet their basic right to practice exercise and sports is not provided. This fact is especially visible among children with disabilities. Due to the lack of infrastructure and the lack of parents' confidence in the competence of the coaches, the possibility of many disabled children to do sports is withheld.

Driven by the vision to enable every child with disabilities to his or her fundamental right to exercise sports and learn how to swim through the Halliwick concept, this program was planned and started on the 1<sup>st</sup> October 2013.

### **Aim:**

The aims were: to enable children with disabilities to participate in water using Halliwick concept; to reduce the fear of parents and increase trust so that at least 10 children will be attending the program per city, and to ensure the sustainability of the activities initiated.

In the sports community, it is customary to single out the benefits of exercise/sports, but among parents, sport is not mentioned. They talk about coaches!

The communication target groups are primary - parents of children with disabilities and local authorities, and secondary - the wider society of people with disability.

The communication focus is directed at the wholehearted coaches, who are dedicated to the children with disabilities, teaching them self-esteem even while knowing that the disabled sports career doesn't offer adequate pay and no high society status.

### **Methods:**

We will present the development and implementation of Halliwick concept in Croatia through network of swimming schools, the development of a communication strategy, which reduces fears and increases trust and how we initiated the dialogue with the local authorities to ensure systematic support and sustainability.

### **Conclusion:**

15 cities were enriched by a Halliwick concept for children with disabilities and this is a giant step towards equality and inclusion! The communication tools were selected to reach the target groups - parents and local authorities.

The innovations of this project are using a sponsorship as a springboard to solve real social issues in a sustainable way by interrupting them, inventing solutions, and talking to people behind the scenes – to Halliwick instructor coaches.

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## Invited speakers

### Foens Knudsen Bodil: How to speed up the learning process for adults

Denmark

#### Background:

This hermeneutic phenomenological study has focus on the learning process for adults who want to learn to swim by using the Halliwick concept. At the Halliwick basic courses we often have participants/new instructors, whose skills in water show problems with mental adjustment to the water. After two pool-sessions and a day of theory, many of them are able pass the green badge in the third pool-session. We believe that structured pool-sessions with focus on the quality of the skills in water combined with theory have a high influence on the learning process.

This inspired a Halliwick Swimming Club to structure the start for all new adult swimmers. The Club's web-site has information about the Halliwick Concept and story-telling from individuals. A small group of three to four swimmers that start at the same time. They have a theoretical introduction on land given by a Halliwick Lecturer before the first pool session. All instructors have a Halliwick Basic Course.

#### Aims:

To achieve knowledge from swimmers and their instructors about the learning process. Thus, the aim is to contribute to develop the quality of the learning process for new swimmers.

#### Methods:

For this study, interpretive phenomenological analysis method inspired by Kvale and Brinkmann (2009) were used with theoretical framework based on Elias (2000), Antonovsky (2000), Bandura (1977). Data were collected through semi-structured qualitative interviews (groups and individuals) with nine swimmers and six Halliwick-instructors. The swimmers represent beginners with the Halliwick Concept from September 2016 and January 2017. Written documents at the Club's web-site and the Power-Point presentation from the Introduction. Observation of pool-sessions. The data were collected from middle of March until Middle of Mai 2017.

#### Results:

The process for the swimmers begins many years before with a wish of learning to swim, searching for information at web-sites before they contact the Club using the Halliwick Concept. Findings for the study were analyzed into five themes, which have influence on the learning process for adults, who have started to learn to swim in the Club: (1) "we will" - group-spirit reduce shame, (2) theoretical knowledge reduce fear (mental control), (3) trust and confidence, (4) "take your time" - individual process (control and performance), (5) "I can" – "perceived self-efficacy". In standing they submerged their heads and in supine they could float without physical support.

#### Conclusion:

It seems to be embarrassing or ashamed not being able to swim in the Denmark. Knowledge about the Halliwick concept from the Internet and the theoretical introduction is an important part of the process for moving forward. Being a member in the small group helps reducing shame and the group-work support creates a group-spirit. Trust and confidence is needed in the cooperation between swimmer and instructor. "Time" seems to be a keyword for the swimmer in the individual process. The stimulation of the swimmers "perceived self-efficacy" can be told "I can" stories and they believe "I can and we will" learn to swim.

## **Pulec Lah Suzana, Filipčič Tjaša: Understanding and Managing Students with ADHD during swimming lessons**

*University Ljubljana, Faculty of Education Ljubljana, Slovenia*

### **Introduction and aim:**

Swimming is one of the basic movement skills. It presents natural movement that people need to learn to improve their safety and has great influence to the bio-psycho-social development of an individual. It is a locomotor activity that differs from other activities because of the specific environment - the water. Knowledge of swimming is important worldwide and also in Slovenia, which is being reflected in state co-financing of some preschool and elementary school swimming programs. In the group of novice swimmers, not all of them have the abilities to learn fast and efficiently. Among them are those who have different deficits, disorders or special needs that require suitable adaptations during a swimming lesson and some specific knowledge of swimming teacher. The aim of the presentation is to focus on special needs that might be present in students with attention deficit hyperactivity disorder (ADHD) during a swimming lesson.

### **Key points of presentation:**

ADHD is characterized by persistent, age inappropriate attention, activity level and self-control (impulsivity), manifested as complex and diverse behavior profiles in individuals. ADHD affects learning, which includes the learning of new motor skills such as swimming strokes. Problems can manifest in different manners, in different scope and combination, and with different intensity with each student. Attention problems are often presented as a problem of sustained, selective, alternating and divided ability to focus on instruction details and locomotor tasks (in the water). As the swimming pool and the water represent a multisensory environment, a student with ADHD is easily distracted by non-essential outside stimuli (e.g. sounds from the surroundings of the swimming pool, movement of other peers). Hyperactivity that is presented by restlessness and poor coordination of hand and leg movement may hinder the efficacy of the coordination in swimming. A teacher should consider that locomotor tasks with a high demanding coordination strain (acyclic activities) are difficult to perform for these students. It would be much easier for them to succeed at recurrent (cyclic) activities. Students with ADHD are often perceived as "driven by a motor", running and jumping around the swimming pool. They often have difficulty waiting for their turn, often interrupt or intrude on other peers (e.g. pouncing on other, sinking them under the water). This may present a risk factor as safety plays an important role in a swimming lesson. The functional impairments in individuals with ADHD are significantly influenced by environmental demands. Therefore, an organized, supportive environment and a competent swimming teacher are crucial to support the success of a child with ADHD during swimming lessons. A competent swimming teacher with adequate knowledge and understanding of ADHD and its management (appropriately structured environment and demands, e.g. clear rules) can reduce the intensity and frequency of difficulties as a result of the child's ADHD. For a successful progression of learning (swimming) it is highly important that the individual with ADHD experiences success. Therefore, besides understanding the child's special needs, it is of equal importance to discover and enhance his strengths (e.g. maybe he is good in diving or in jumping into the water). The presented issues will be discussed in depth during the presentation.

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**Gimeno Hortensia: Cognitive orientation to daily occupational performance**

*Guy's and St Thomas' NHS Foundation Trust, London, United Kingdom*

Children with dystonia including dyskinetic cerebral palsy (CP), have significant problems carrying out everyday activities. Childhood dystonia is often refractory to pharmacological interventions and other currently medical strategies. At best, drugs usually focus on symptom management, and at worst lack empirical evidence of effectiveness. The therapeutic goals of drug and surgical treatments are typically aimed at what may be important biomedical goals – e.g., to reduce dystonia – but evaluation in terms of activity and participation in real life functioning contexts is still lacking.

Arguably this should be at the core of all our efforts to fully understand the outcomes of potentially expensive and invasive intervention such as deep brain stimulation (DBS). In childhood-onset dystonia, newly developed International guidelines for dystonic CP report OT, PT and SLP as the cornerstones of rehabilitation (AACPDm, Clinical guidelines). Thus, the recommendations must be interpreted and applied to clinical practice with caution.

Currently, there is only one rehabilitation study, led by the presenter, in childhood-dystonia that has been registered and the results will be presented in this meeting. This rehabilitation trial uses and Occupational Therapy Intervention, the Cognitive Orientation to daily Occupational Performance (CO-OP)) to augment the results of DBS.

The presentation will use a series of videos to demonstrate the results of the intervention, including a child with neuro-disability learning to swim in 5 sessions. Key concepts of the intervention will be outlined.

## Oral presentations

### **Korelc Simona, Snedic Anja, Katja Groleger Sršen: CO-OP in Halliwick program (a case report)**

University Rehabilitation Institute of Republic Slovenia, Ljubljana, Slovenia

#### **Introduction:**

We introduced the Halliwick program at our institute 17 years ago. Most of Halliwick instructors are working as occupational therapists or physiotherapist at the children's department. Some are also volunteers and parents. The program run once a week, for an hour, which means that children get the mean of 20 hours per season. The main goal of the Halliwick based program is to engage children in water activities, develop their independence and swimming skills. Most of the children adjust to water and master water independence, but have problems in mastering swimming skills. Eight years ago, we learned about the Cognitive orientation to daily occupational performance approach (CO-OP), which was at the beginning used to teach children with developmental coordination disorder. CO-OP approach is client centered, performance based, problem solving approach that enables skill acquisition of through a process of strategies use and guided discovery. We started to use the CO-OP approach in regular clinical praxis. Later some research results confirmed this approach could be used also in adults after stroke, children with dystonia, etc. We decided to use the elements of this approach in swimming program.

#### **Aim:**

We want to present the use of CO-OP approach in the process of teaching of swimming.

#### **Methods:**

6 years old, girl with myelomeningocele in the lumbar spine, was included in the Halliwick program already for two years. She developed good adaptation to water, was enjoying in group activities, but she still didn't learn how to swim. Since the girl had a great desire to learn how to swim, we decided to use the elements of the CO-OP approach. We have set up CO-OP learning protocol. In addition to the general strategy (four steps: goal, plan, do, check) and using the guided discovery, the girl used her specific strategies, that helped her to master the swimming skills. Specific strategies focused on the position of the body, attention to the task, to the characteristics of the task / adapting, acquiring knowledge about the task, feeling of movement, the use of key words and some phrases.

#### **Results:**

At the beginning of Halliwick program, she was evaluated by SWIM test (11 skills, scored on the scale from 1 to 7) and scored 38 points. In two years she progressed her skills, so she scored 61 points, but was still not able to swim independently. After five sessions of the individual CO-OP program in the swimming pool, she mastered the key swimming elements. She was able to move independently in the swimming pool only with the supervision.

#### **Conclusion:**

The case study showed that the Halliwick program helped the girl to adapt well to water, to feel safe and move in water, but to the certain limit. She was then later able to use her knowledge to learn new swimming skills with the CO-OP approach quite fast. CO-OP approach focuses on the implementation of a meaningful, performance based activity, that the child wants, need or is expected to do. By using general and specific strategies, that are gained through guided discovery, we could help the girl to use her abilities to learn to swim.

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**Introduction:**

The medium of water enables a freedom of movement that is very difficult or almost impossible to achieve on land. As a physiotherapist, lecturer and the Halliwick Concept instructor I combine the knowledge from both fields for the prevention practices in the swimming pool. In my workshop, I will present the water prevention practices, which I have been leading for 9 years once a week, from October to April for the Pensioner Club from Ajdovščina.

**Methods:**

The temperature of the water in the pool is from 29 to 30 degrees, the depth of the pool is from 110 to 150 cms. Water, with its physical characteristics, reduces strain in joints, increases elasticity of soft tissues, increases muscular activity, and improves blood circulation, which consequently reduces swelling. Exercising in water relieves pain. When our body is under water up to the breastbone, we experience a 75% relief of weight, which lets us move more freely and with support.

Prevention practice consists of a program of active exercises, such as walking, running and swimming. It is suitable for training to walk. Due to the effect of water buoyancy, we are able to help a person to make a step - in the swing phase as well as in the stance phase. During the practice, we can adjust the resistance so that we prolong the handle, use different speed and different direction of movement.

Pool work: we are going to show a series of exercises, and participants will be able to engage in those exercises in the pool.

**Conclusion:**

The benefits of practice in water are: increased mobility skills and *increased joint flexibility. It is a simple way to strengthen the muscles; it influences the cardiovascular endurance and encourages the development of balance and stability because it gives you a sense of security that you won't fall. Using regular practice, we relieve pain, normalize the muscular tension and decrease stiffness of muscles and joint structures.*

The people involved in the practice are highly motivated and always in a good mood. In all these years, we have made many friends. Group activities and diversity training exercises as well as good condition after the practice are reasons for group staying together for so many years.

**Gimeno Hortensia, Simona Korelc:** WORKSHOP - How to set COOP goals in Halliwick  
*Guy's and St Thomas' NHS Foundation Trust, London, United Kingdom*  
*University rehabilitation institute of republic Slovenia, Ljubljana, Slovenia*

**Background:**

Cognitive Orientation to daily Occupational Performance (CO-OP) is a performance-based treatment approach for children and adults with difficulties in performing the skills of daily life. Originally it was developed for children with developmental coordination disorder. Later it was reported that the CO-OP approach is efficient also in patients after stroke, with dystonia, cerebral palsy, traumatic brain injury, Parkinson's disorder, autism spectrum disorder, etc. It is a specifically tailored approach, that engages the individual at the meta-cognitive level to solve performance problems. The principles of the CO-OP approach are goal setting, dynamic performance analysis, cognitive strategy use, guided discovery, and enabling principles. Patients are asked to choose some tasks, they would like to learn or improve the performance, such as dressing, writing, bicycling, tying laces and other daily living skills, even swimming.

**Aim:**

The CO-OP Approach will be presented in more detail as it provides therapists with an evidence-based approach to enabling performance success in an effective and efficient way. CO-OP uses a process of guided discovery to enable the identification of the specific strategies that will support performance success. In CO-OP individuals learn how to talk themselves through performance problems. CO-OP's objectives are: skill acquisition, development of cognitive strategies, generalization of skills and strategies and transfer of learning to new skills and contexts.

Participants will learn basic principles of CO-OP and get information on further education programs. Together we will work on how CO-OP could be implemented within the water. Based on present experience it looks that children, with good adjustment to water and abilities to learn, could learn to swim in a more efficient way and in shorter time by applying CO-OP approach or its elements to Halliwick based swimming program.

## **Ibrulj Sandro, Groleger Sršen Katja, Korelc Simona, Flisar Dušan: Swimming skills in Parkinson disease patients with deep brain stimulation**

*University Clinical Centre, Neurology Clinic, Ljubljana, Slovenia*

*University Rehabilitation Institute of republic Slovenia, Ljubljana, Slovenia*

### **Background:**

Deep brain stimulation (DBS) is a surgical procedure used to treat a variety of neurological symptoms, most commonly the symptoms of Parkinson's disease (PD), such as tremor, rigidity, stiffness, slowed movement, and walking problems. In one reported case there was described, that swimming abilities after the implantation of DBS, worsened. We wanted to determine the swimming ability in patients with PD treated with DBS.

### **Methods:**

We tested a group of patients with PB with implanted DBS ( $n = 6$ ). Patients were kept on their individual oral medication regimens. Unified Parkinson's Disease Rating Scale (UPDRS) Part 3 score was used prior to each test in order to determine dry-land motor ability with DBS switched on and off.

Swimming abilities were tested in a warm ( $T=32^{\circ}\text{C}$ ), regular size swimming-pool at the University Rehabilitation Institute of Republic Slovenia. We measured the time needed to swim (breaststroke) two laps (~50m). Swim time was tested twice, first time with DBS switched on and second time with DBS switched off. Then we evaluated swimming skills with Swimming and water independence test (SWIM) twice, with DBS switched on and with DBS switched off. Swim time results and SWIM scores were evaluated and compared.

### **Results:**

All patients had a significant dry-land increase in UPDRS score with DBS switched off (mean absolute difference of 30.8 points). In five of six tested patients, swim time with DBS switched off significantly increased (mean absolute difference of 35.6 seconds). One of patients was swimming faster with DBS off (the second measurement), but he took levodopa shortly prior to the testing, so we excluded his data from further analysis. The same patient had also the same SWIM score in both occasions.

All other patients scored lower at SWIM test when the DBS was off. The mean absolute negative difference was 3.4 points (range from 1 to 6 points). Since they had different swimming skills (SWIM results from min 39 to max 72 out of 77 possible points), we calculated also the relative negative difference (mean 5.3%, min 1.8 %, max 8.6 %). The analysis of individual SWIM items showed that patients with DBS off had more problems at the backward transversal rotation (mean 4.75 points), sagittal rotation (mean 3.5 points), lateral rotation (mean 3.0 points) and combined rotation (mean 4.5 points).

### **Conclusions:**

This preliminary study results suggests, that swimming abilities in PB patients are significantly better, when their DBS stimulation is switched on, compared to the abilities, when the DBS stimulation is switched off. Based on our findings we wouldn't be able to support the above-mentioned report, that DBS in patients with PB increases the hazard of drowning.

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## Alt Nir, Alt Dorit, Hadar-Frumer Merav: Applying and Assessing Case-based Learning in a Halliwick Method Training Course

*Buot Centre for Hydrotherapy Swimming and Professional Training, Jabotinsky 84, Ashdod,  
Education and Community Department, Kinneret College on the Sea of Galilee, Israel,  
Beit Issie Shapiro Hydrotherapy Center, Raanana, Israel*

### Background:

Case-based Learning (CBL) is a pedagogy that uses case studies or case reports that have been written for teaching purposes. Case studies are written summaries or syntheses of real-life cases that require students to tease out the key issues involved and to identify appropriate strategies for the resolution of the 'case'. In this study, CBL was applied in a Halliwick method professional training course.

### Aims:

The aims of the study were to examine the effectiveness and limitations of the CBL in order to improve the teaching methods and students' skills in Halliwick method professional training course and Hydrotherapy courses.

### Methods of delivery:

Until now, about 60 questionnaires were gathered included hydrotherapy students that participated in Halliwick foundation training course. A mixed-method of qualitative and quantitative was used. Data were gathered from the students regarding the CBL implementation and their experience with self- and peer- assessment by a new measurement that was specifically designed for the purposes of this study. Based on the qualitative analysis, the scale included seven categories: **Transferability, Thinking skills, Prior knowledge, Self-regulation, Alternative assessment, Multiple perspectives** and **Collaboration**.

### Results:

The preliminary results of the qualitative data indicated that CBL could be considered an effective tool for Halliwick foundation training course. Based on the quantitative analysis - **Thinking skills, Prior knowledge**, and **Self-regulation** were the most effective factors that directly enhanced **Transferability**. **Alternative assessment** and **Multiple perspectives** were found more effective in enhancing students' perceived ability to identify, understand and apply new knowledge to case solving during the course (i.e., **Thinking skills**). **Collaboration** was not correlated with the dependent variables in the research model, however, was found significantly correlated with **Self-regulation** and **Alternative assessment**. This result might be explained by the small sample size used in this study, and several difficulties raised by the participants in the open-ended questions.

### Conclusions:

From these results, we can conclude that we as lecturers (guides) have the ability to influence several CBL constructs: **Prior knowledge** that also refers to the level of knowledge acquired during the course; **Thinking skills** (the ability to identify, understand and apply new knowledge into the case solving), linked to **Multiple perspectives** (encourage creativity) and **Alternative assessment** (engaging the students in a self - and peer - assessment work). Due to time limits we might have less influence on **Self-regulation** (student ability to be actively engaged in self-regulated learning processes). We also have to try finding solutions to the problems raised by the students with relation to **Collaboration**.

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## **Burja Cirila, Gerbec Anka: Halliwick and sensory integration**

CIRIUS Kamnik, Kamnik, Slovenia

The number of children with problems in processing sensory stimuli is steadily increasing. The center for Education and Rehabilitation of Physically Handicapped Children and Adolescents Kamnik (CIRIUS Kamnik) is a specialized center for the education and rehabilitation of children and adolescents with motor impairments or chronic illnesses. Over the years at CIRIUS Kamnik the number of physically handicapped children with sensory stimuli processing disturbance has been increasing. Research shows that the treatment of sensory integration helps a child organize all seven sensory systems (proprioceptive, vestibular, tactile, visual, auditory, olfactory and gustatory). Sensory integration by J. A. Ayres is an accepted approach of treatment in occupational therapy. In the sensory therapy room, a child gradually adapts to different stimuli with the purpose of reaching an adaptive response. The swimming pool is one of the multisensory environments that offer a child the possibility of meeting and gradually adapting to different stimuli. At CIRIUS Kamnik we have been using the Halliwick concept for many years, within the last two years we have been combining it with the treatment of sensory integration. Adaptive responses, which are established by a child in the sensory integration treatment with occupational therapy, are supplemented and upgraded in the swimming pool with activities from the Halliwick concept.

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Sensory Integration (SI) refers to the way we use the information we receive from the senses from our own body and environment, which share common information channels with us, provide a reliable picture of the world around us and our role in it. As the brain on a very organizationally way uses visual, acoustic, tactile, nerve information and information about the body's position, brain give us the meaning of sensory experience and we know how to react and behave appropriately to that situation. In treatment of impaired SI, sensory stimulation should be controlled in a way that allows a child to make a customizable response that integrates sensations and promotes brain organization ie. a response that leads to growth, learning, and / or appropriate interactions; Therefore, therapy provides controlled sensory input.

The primary goals and activities of the SI program primarily relate to the main categories of tactile, vestibular and proprioceptive activities. The key to the efficiency of programming SI is to detect what is settling or what stimulates each individual child to control the child's environment in order to achieve better self-control. In order to understand the child's sensory needs, it is necessary to record activities that the child likes and activities that the child avoids or refuses. By recording the activities of the child, we adjust the SI program through the Halliwick concept.

Take for example a child who is swimming on its own. It feels the smell and the taste of water, it sees the water in which it is, and over the skin body feels the water. Moving through the water all parts of the body interact with each other. All of you feel the child gets, they are joining in one place in the brain and their integration allows the brain to experience the movement through the water as a unique process. The brain must arrange all this to help the child "normal" move, teach and behave.

When the perception of the body does not contain good and clear information on the relationship between the left and right side of the body, the child will experience difficulties in exercising requiring co-ordination. The disturbed rhythm of movement through the water is noticed. However, with adequate motor planning, the child adapts to unknown tasks and then learns how to accomplish the task automatically. The key to motor planning is body perception with accurate tactile, proprioceptive and vestibular information we achieve through 10 points of the Halliwick concept.

Brain baby organization can be seen in its range of attention and level of activity. If they are out of control, the child is unable to focus on the task in the water. Hearing or visual stimuli such as noise and a large number of children and aids can hinder or exaggerate it. In children with disrupted SI, fear of water may appear, and we apply psychological adaptation activities in which the child slowly comes into contact with the water before the whole body is immersed in the water, such as washing up the face or dive of the suffocation of the facial part with the blowing in the water.

In order for a swimmer with a SI disorder to be self-sufficient, he or she must gradually acquire the psychological and physical independence we achieve through various exercises to reduce the support and contact. For people with impaired SI tactile apparatus this exercise is a bigger challenge. Exercising rotation, balancing, and raising the affected person, we improve the sense of body position in the area and affect the tactile system with constant flow of water on the surface of the skin. In turbulence exercises, we also influence the body consciousness in space. Passive water flow around the body affects the development of touch sensation.

**Ben-Anat Noga: NO means NO!!! Halliwick method as a tool to work with victims of sexual assault**  
*Israel*

*Note: At some points, the female language is in order to simplify the text, but aimed at both genders.*

**Sexual assault**

Sexual assault is defined by using physical or psychological force; touching that occurs against one's will; and the aim of the attack is to hit and humiliate the victim. Assault and sexual harassment can occur when we meet a person face to face, but the harassment can also happen via a telephone, an e-mail, at a forum. Assault victims can be harassed through touch, words, images and in other ways. Sexual assault does **not** only mean rape. Neither of us invite sexual assault, people don't choose to be a victim. The responsibility and the blame of the assault lies only on the assailant. Nothing is on the victim. There is no excuse to blame the victim.

**Mental effects**

A man who was sexually assaulted can experience a wide range of emotions:

- Anger and frustration
- Depression and anxiety and a desire for seclusion and detachment from the environment
- Damaged self-esteem
- Guilt, shame or confusion
- Sleep disturbances and nightmares
- Eating disorders
- Sexual difficulties
- Difficulties in contacting members/partners

Sexual assault can cause the victim to lose control of her body, on her own territory.

It is very important not to panic. The feelings that appears are normal and we must understand that the mind and the body react in the following way to cope with the trauma: **Fight, Flee, Freeze**

When we think about rape, we are often influenced by movies we've seen, where the victim screams and fights back. Therefore, sometimes victims question themselves after the attack: "Why didn't run? Why? Why did I stay and didn't scream?" These questions are accompanied by guilt.

In fact, the body and the mind are often in a state of shock and paralysis. Even if after the attack we know exactly what needed to be done, the body is not always able to follow our directions.

**It is important to know**

Sexual assault can happen to anybody in all segments of the population: boys and girls, no matter their age or religion. Sexual assault can be performed by a stranger, acquaintance, spouse or a family member.

**The goals of working with victims of sexual assault.**

1. Creating faith in the body (you betrayed me?)
2. Strengthening the body image.
3. Supporting and strengthening the self-image
4. Creating a new personal belief in the ability to control life.

**Rationale**

By using the Halliwick steps of progress we will lead the swimmer to renew intimacy with her body's abilities until obtaining complete control and trust, with an emphasis on support for individual needs.

**Treatment plan**

An outside meeting to coordinate expectations.

Observing the initial contact of the swimmer with the water and the initial adjustments to present time needs (can be a professional swimmer who will just agree to dip her feet)

Adjusting the atmosphere of the conversation (language, humor, age)

Progress and moving from step to step as necessary to achieve the goals (or part of them)

If possible, posting the swimmer as a volunteer in a Halliwick team.

Required — contact/accompaniment with the accompanying emotional therapist in everyday life. If not, a recommendation to do so.

**Description of Case Studies:**

- Girl raped
- A woman who suffered from Sexual abuse by her father in her childhood.
- A boy who suffered from sexual harassment of his friends in the garden.

**NO means NO!!!**

Even if you say it only once in a whisper, or don't say it at all and only not being cooperate, no matter how say it or don't say it: NO means NO!!!

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## **Barrett Ursula: Multimedia and Halliwick**

This presentation aims to explore some of the media which can be used for the delivery of courses, promotion of Halliwick, assessment and communication. The discussion will stimulate ideas on how all of us can add something new to how we do things so that Halliwick keeps moving with the times and rises to the opportunities and challenges of an international voluntary organization in the 21<sup>st</sup> century.

## **Ronchi Katja:** Swimming teaching techniques for children with different impairments

Creating a 9-month swim training plan for a group of children with different impairments and ages from 5 to 17 years is very challenging. The children and their parents attended swimming sessions once a week. Most of the children had beforehand developed independent swimming skills through Halliwick swimming program at University Rehabilitation Institute of Republic of Slovenia.

The 9-month swim training plan had three main stages, the duration of each stage was 2 to 3 months. The goals of the first stage were to homogenize the group as much as possible and to get all the participants acquainted with 2 to 3 swimming techniques.

The goals of the second were to keep children and their parents motivated for learning swimming techniques and develop self-motivation if possible.

In the third stage the goals were that the children would be equal among their peers in primary school swimming courses and that they would be able to participate in swimming competitions for people with different disabilities.

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**Background:**

One of the main principles of the Halliwick concept is to teach how to control body position, movement and swimming in the water without the use of floatation aids. Reasons for that are varied and reasonable: a) floatation aids create dependence and prevent the swimmer from fully adjusting to water; b) aids might break down or slip from the swimmer's body, thus endangering her or his life; c) aids create pressure on the body surface and maintain pathological body positions; d) aids interfere with learning how to move and control body posture in the water; e) aids inhibit the learning of good swimming movements. On the other hand, with swimming aids the instructor is able to provide safe support for a swimmer, change the support as appropriate and adapt the support to the swimmer's abilities.

**Aim:**

We want to discuss the essential question concerning the use of floating aids. If we do use them, when we do, what could be the purpose, in what way and how do we enable the swimmer to disengage from floatation aids in the long-term?

**Methods of delivery:**

Our work in the hydrotherapy center at Beit Issie Shapiro has been based on the Halliwick concept principles for over 20 years. In this time, we have achieved excellent results in developing water independence, improving movement quality, free swimming, swimming competitions, and last but not least, rehabilitation programs. Over the years, we have raised many generations of swimmers and we are proud of it. Within regular clinical practices, the question of floatation aids arises from time to time: Why not to add floatation device in a specific case?

During the lecture, we will present some unique cases in which the therapist decided to use floatation aids for specific purposes. We will give examples of creative solutions that we have developed along the years for these swimmers. We will describe the thinking process, which led to these solutions regarding the use of floatation aids, the characteristics of the activity and the methods of disengagement from floatation aids.

## **Yoshei Yael: Hydro-Zen: The Pool as an Adapted Sensory Environment**

*Beit Issie Shapiro, Israel*

### **Background:**

*We often use the water as a therapeutic tool for alleviating the motor, communication and cognitive dysfunctions. Many of our clients also demonstrate difficulties in sensory modulation and processing. These difficulties prevent them from efficiently managing their daily function and may inhibit their progress towards attaining independence in the water.*

*Beit Issie Shapiro was the first hydrotherapy center to build an adapted sensory therapeutic pool, which is a unique environment that combines the benefits of the unique characteristics of the water with the Snoezelen – a controlled multi-sensory environment.*

### **Aims:**

- 1. To deliver a positive experience to the patient, which will in turn enable adjustment to the pool environment and to the therapist.*
- 2. To gain confidence in rotations and independent initiative for movement.*
- 3. To allow the patient to participate in family activities in a swimming pool.*

### **Methods:**

*Patient*

*Liora, a client with Rett Syndrome, was chosen to receive hydrotherapy treatments in the "Hydro-Zen" – an adapted sensory therapeutic pool.*

### **Protocol**

*Liora's abilities were assessed using the WOTA (Water Orientation Test-Alyn) before starting the sessions in the "hydro-Zen". The idea of combining the therapeutic pool with the Snoezelen approach was to create an environment in which the unique sensory qualities of water can be maximized. Liora received two hydrotherapy sessions per week, each lasting 30 minutes.*

### **Outcome:**

*The adapted environment created an immediate change: Liora stopped crying, created eye contact with the therapist and begun initiating movement. Her adjustment to water improved significantly, as measured by the WOTA (Water Orientation Test-Alyn). Liora continued to have therapy program in the adapted pool for six months and then began with therapy program in a regular treatment pool.*



**Dejan Škvarč: Halliwick concept in CIRIUS Vipava**  
*CIRIUS Vipava, Vipava, Slovenia*

The Center for education, rehabilitation and training Vipava (CIRIUS Vipava) is a professional and well equipped modern facility which educates and trains children and adolescents with special needs. We have been teaching, training, and adapting for 50 years. Since 1990's, we have been asking ourselves if there is more that can be offered to our boarders. We have found out that water as a medium with much to offer, and it is an element which enables movement to people with very severe disabilities. In 1995, an occupational therapist Boža Madić and a physiotherapist Klavdija Krušec trained as Halliwick instructors and were the first to bring the knowledge to our Center. Their mentor and role model was a renowned doctor Joan Martin from London.

In 1996, following the Halliwick concept, we began to offer our boarders the opportunity to swim in Nova Gorica, 30 km away from us. At the time, there were 26 children involved in Halliwick project. In the following four years, the number of children fluctuated between 24 and 44. The year 2000 was a crucial year for our center, as we built our own therapeutic swimming pool. This increased the number of participating children in our program, as there was no longer the need for transfer to Nova Gorica. We could then offer the treatment to children with severe disabilities. There were 96 children involved in the Halliwick concept swimming program. Nowadays, the number of children in the swimming pool program fluctuates between 80 and 104 to nowadays.

Concept Halliwick enables our children to reach their other motor potential, has a rewarding influence for mental state, and provides positive behavioral models. The smile of the instructor, optimism and good eye contact leads to less fear in children. Due to positive therapeutic and recreational effects that represent the Halliwick concept, it offers a wide variety of approaches to integral rehabilitation of people with special needs.

A program leader in Cirius Vipava is Klavdija Krušec, an instructor of Halliwick concept. The Program is executed by 14 therapists (physiotherapists, occupational therapists, and speech therapists) and special educators who have passed a basic training in Halliwick. Indispensable help is offered by nurses who prepare the children to enter the pool (showering, changing clothes, accompanying them).

The whole institute lives for the pool and our work in water. The results speak for themselves on the happy faces of our children.

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## **Maria de Lourdes Oliveira Vilela Garcia:** The influence of Halliwick program on performance in a patient with muscular dystrophy: a case report

*Brasil*

### **Background:**

Muscular dystrophies are genetic diseases that affects musculoskeletal and cardiorespiratory systems, causing weakness and contractures due to atrophy. These changes have negative influence on postural control and mobility, limiting a person's functional abilities such as walking, climbing stairs and later, standing and standing up from a chair.

When in water, due to the well-known effect of buoyancy, we can expect an increased amount of freedom and thus an increased range of movement in joints, leading to better balance and postural control and more muscular activity. Furthermore, the swimming pool environment allows patients with muscular dystrophy to experience more freedom and independence in comparison to the movement on land (where they use sticks, crutches or even a wheelchair). We can expect them to be more willing and able to move in water. The movement variability is enhanced. Such movement can be more active and controlled due to the physical properties of the water.

### **Aim:**

We want to present a patient with limb-girdle muscular dystrophy and show the effects of the Halliwick concept based aquatic physiotherapy on daily life activities.

### **Methods:**

#### *Patient history*

We present a female patient with limb-girdle muscular dystrophy. First signs and symptoms of the disease started at the age of 12 and progressed with the time. At the age of 14 she already had a characteristic walking pattern with weakness around the shoulder and pelvic girdle, but was still independent in all daily life activities. She was still able to participate in a social and cultural life and attend the school program. At the age of 14, she entered the Halliwick program and attended it for four years. At the follow-up, at the age of 25, she was presenting with severe progression of the disease and she was dependent in most of activities on dry land.

#### *Methods of work*

The Halliwick based water activity is suitable to support and encourage the patient to move actively and perform the various simple and complex movements, including rotations. During a series of sessions, the patient was able to explore the postural control adjustments in a new and more challenging situation. The patient was attending the program three times a week for four years, from the age of 14 to 18. Each water session was 40 min long. To evaluate her activities of daily life (ADL) we used the Barthel ADL Index in the course of the four-year program and at the follow-up at the age of 25 years.

### **Results:**

At the beginning of the program, at the age of 14 years, the patient was able to perform all points of the Halliwick concept. After some training, she was able to swim not only the basic swimming movements, using symmetrical movements, but also alternating movements, using arms and legs for propulsion, in prone and side-lying positions.

After finishing the program, the patient was able to swim independently and felt free in the water. She was able to move better as the signs of the disease decreased in comparison to the performance on dry land. The Barthel ADL Index results showed improvements in mobility, transfers, personal care, feeding, bathing, dressing and toileting. She was independent in all categories of the Barthel ADL Index. After the four-year program in water, she stopped with Aquatic Physiotherapy. The rehabilitation program was done at home only, with motor and respiratory physiotherapy.

At the follow-up, at the age of 25, all the scores of the Barthel ADL Index deteriorated. She lost independence in most of activities: was unable to climb stairs or walk independently, she was bound to the wheelchair, she could not transfer without help, needed help to use toilet, to get dressed, to bathe and even to feed herself.

**Discussion:**

We were able to show the progression of functional abilities for a patient with a limb-girdle muscle dystrophy in the time she was attending the Halliwick program, even though her disease slowly deteriorated. Due to specifics of water, we know that the movement in water gives a person time to think and act slowly. In this way, it enables the weak muscles to contract and act. The patient was able to activate her muscles, keep a good posture, move in a more active way and do all the rotations associated with a good breath control. In this way, she could prolong the activity of the muscles in the scapular and pelvic girdle, improve the postural alignment, stimulate the contraction of respiratory muscles and in the long-term prevent contractures, promote better balance and coordination.

Many factors have to be considered to increase the benefits of a water based Halliwick program and enhance the performance on dry land: the progression of the disease, the frequency of aquatic physiotherapy and other multidisciplinary therapies that the patient practices. We also have to consider the psychological aspects.

**Conclusion:**

The rehabilitation program seems to be of great relevance for the patient with limb-girdle muscle dystrophy. Further research is needed to gain more knowledge on the benefits of Halliwick based water programs for patients with muscular dystrophies.

## POSTER PRESENTATIONS

**Noa Hagani Shapira, Dalia Natan:** Getting over fear of movement with Halliwick mental adjustment: a case study  
*Rambam Health Care Campus*

### **Background:**

Participant: 18 years old Palestinian female with hypophosphatemic rickets (a disorder in which the bones become painfully soft and bend easily, due to low levels of phosphate in the blood). At the age of 12 years she was reporting muscular pain and weakness. She was frequently falling and suffered a left wrist fracture. At the age of 14 years she suffered a second left wrist fracture. She was diagnosed for severe osteomalacia due to hypophosphatemic rickets. At the age of 15 years she suffered bilateral hip fractures and was referred to Dr. Dov Tiosano /Ruth Childrens' Hospital, Rambam Medical Center Haifa.

In November 2013, at the age of 17 years, J. was referred to hydrotherapy and physiotherapy due to a long period (20 months) of being wheel-chair bound. At admission, she suffered from bone pain, severe weakness, difficulty with ambulation and transferring, poor appetite and weight loss. She fearful of movement and used her wheel chair for mobility. She didn't walk or stand and needed a lot of assistance during all transitions, dressing and other activities of daily life. She didn't have any experience with hydrotherapy or swimming and was showing high levels of anxiety and fear from entering the pool. Due to her physical condition and low motivation, she didn't attend any school program for a long time.

### **Aim:**

To overcome the fear of movement and of water in a young patient through a therapy program based on the principles of the Halliwick concept.

### **Methods:**

The patient was given three hydrotherapy and physiotherapy sessions a week. We started a therapy program based on Halliwick principles, paying special attention to mental adjustment. We worked on gradual supported entrance to the pool, breath control, encouraging the patient to walk in all directions with support, bunny hops, and slowly progressing to engage her in all different rotations (sagittal, longitudinal, transversal and combined). The therapy program also consisted strengthening, and stretching, using the Bad Ragaz Ring Method and functional activities.

The land session included aided walking, strengthening exercises, practicing stairs and walking on different surfaces with a walker. We used the Tampa Kinesiophobia Scale in order to evaluate fear of movement. During that time, the patient received medical treatment and phosphate replacement therapy. In order to evaluate her progression, we used "6 minutes' walk test" on land and the WOTA 2 evaluation in the pool.

### **Results:**

On land: She gradually regained independence and confidence and became highly motivated. After ten months of treatment (August 2014) the patient stopped using a wheel chair for short and intermediate distances. She remained dependent on a wheelchair only in time of travelling. She dressed independently, walked approximately 50 meters at a moderate speed, went up and down stairs with crutches, and managed safe walking on different surfaces.

In the pool: she gradually began to transfer independently in and out of the pool, gained control over rotations and progressed to basic swimming movements.

She returned to her school program and finished her matriculation together with her friends.

After six months (February 2015), her physical condition deteriorated. She was diagnosed with a craniofacial tumour that prevented phosphate absorption - Tumour Induced Osteomalacia. The tumour was removed surgically (May 2015) and she returned to her rehabilitation program on February 2016. On admission the second time, she was wheel chair bound again, went back to aided transitions and ADL and regained her fear of movement.

After eight months (September 2016) of therapy, she was able to walk 380 meters unaided, progressed to basic swimming and breast stroke, and was completely independent.

**Conclusion:**

Throughout this case I found treating based on the Halliwick concept very rewarding. The fear of pain, movement and water were all addressed by mental and general adjustment approaches; progression was consistent and significant. I strongly believe, based on this case study, and other similar cases, that introducing hydrotherapy based on mental adjustment principles is very beneficial.

## Moscholouri Chrysoula: Halliwick Concept as Therapy Concept: Multiple sclerosis

IASO NICU - Greece

In this qualitative research (case study) we examined the case of a woman diagnosed with multiple sclerosis.

### **Purpose:**

the objective of this research was to outline how the combination of Halliwick concept and physiotherapy strategies and handling can further influence physical activity on land leading to participation on daily life and independence.

### **Method:**

the research was designed under the ICF framework, the FIM™ instrument and three axes are presented as a base framework for Halliwick – Therapy concept in practice: The 10-point program (emphasizing in rotations), the Halliwick Test Badges (adjust) and GMFM (adjust). Three assessments took place, one at the beginning of the program, one after six months, and one after a year.

### **Results:**

At the first assessment, her total FIM score was 69 (**motor subtotal score: 35**) and in the Red Badge of Halliwick. According to the ICF information matrix Marias's situation could be described as *"with moderate difficulty in performance (perhaps because of contextual factors such as personal stress or other peoples' attitudes)"*. By the second assessment she was working towards Yellow Badge. And her total FIM score was 82 (**motor subtotal score: 47**) by the time of the third assessment Marias total FIM score was 119 (**motor subtotal score: 57**), she has the Yellow badge and she is working elements of the Green and finally according to the ICF information matrix Marias's situation could be described as *"with mild difficulty both in performance and in capacity with assistance"*. The analysis of findings identified factors that can enhance the improvement and development of both water and land performance.

### **Conclusions:**

Research findings suggest that it would be useful for therapy programs to take into account the importance of both, increasing the water and land performance and social participation; providing the opportunities for this to happen in every context. We conclude arguing that the combinations of therapeutic handling, with respect on the basis of Halliwick concept, can possible enhance people's substantive participation in daily life and independence. Halliwick as a Therapy concept in practice has to be supported both in a theoretical and in evidence-based structure and evidence is emerging from selected clinical procedures. Continuing research to expand the science of Halliwick – Therapy concept is critical for elevating the evidence and supporting the practice recommendations.

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**Hjortkjaer Christine:** Use of Halliwick Concept in Neurorehabilitation.

*Kildebo – Center of Neurorehabilitation, Denmark.*

Kildebo is an institution in Denmark. We are specialized in neurorehabilitation of adults after brain injury (e.g. stroke). They all have moderate or severe injuries or in other ways in a complex situation. They struggle with several problems, mostly it is a combination of hemiparesis and cognitive deficits. They live at Kildebo for 3-6month.

The pool training is handled by physiotherapists.

The Halliwick Concept is used for a basic assessment of the swimmer skills and need of support in the water. We make an assessment of each swimmer with HASAMs Assessment Overview. It can also be used to clarify the areas of development and to document the progress.

We set aims for training together with the swimmer.

The aims for the training in the pool is related to the general aims for the rehabilitation on land.

We often experience that the training in water gives bonus for the abilities on land.

We have access to the pool ones a week. There are training on land every day.

The Halliwick Concept is used in combination with other concepts and kind of training.

With the IHA-conference in Slovenia there will be a presentation of 2 cases.

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**Chandolias Konstantinos:** Halliwick Researches that have been completed or are in progress in Greece

*Alexander Technological Educational Institute of Thessaloniki, Physical therapy department, Thessaloniki, Greece*

**Aim:**

The aim of this study is to present the researches made by the Greek physiotherapy and physical education University in Halliwick.

**Subject:**

A. Completed researches:

- i. Case studies: One about a child with mild spastic diplegia, one about a child with Louis-Bar syndrome.
- ii. Reliability and Validity: Investigation of the reliability and validity of SWIM, WOTA 1&2.
- iii. Research: The effect of hydrotherapy on the respiratory system of children with cerebral palsy.

B. Researches in progress:

- i. Evaluation of neurodevelopmental treatment- Bobath and hydrotherapy - Halliwick in treatment of children with neurodevelopmental disorder.
- ii. Evaluation of Halliwick in treatment of children with Juvenile rheumatoid arthritis.

**Discussion:**

The research in Halliwick is very important. There must be statistically measurable results that support the importance of philosophy in rehabilitation. The strength of an approach lies in the scientific support of its effectiveness.



**Olaśńska Anna, Kampa Maciej:** The Halliwick group sessions as a response to the main developmental needs of children. The Halliwick Concept at the Malta Centre of Assistance for Disabled Children and Their Families in Cracow.

*Krakow, Polska*

In the Malta Centre of Assistance for Disabled Children and Their Families in Cracow we are using the Halliwick group sessions as one of therapeutic interventions, solving the so-called main problem of the child defined in the therapy individual program.

The Halliwick group sessions through their form and nature naturally respond to the need for a major children's activity that is fun and play. At the same time affect all spheres of development of satisfying their health, sensory, physical, emotional, communication and learning needs, which in turn affects the well-being and quality of life.

Assumptions of the concept allow each child with disability to benefit from the classes at the level corresponding to his or her current capabilities, skills and needs.

In this report, based on group lessons with children with impaired psychomotor development, among others: with Cerebral Palsy (GMFCS IV and V), with Down Syndrome or with Autism Spectrum Disorder, examples will be given of the use of conceptual principles in response to their current development needs.

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**Christodoulaki Evanthia, Chandolias Konstantinos, Hristara-Papadopoulou Alexandra, Iakovidis Paris: The effect of hydrotherapy on the respiratory system of children with cerebral palsy**

*Alexander Technological Educational Institute of Thessaloniki, Physical therapy department, Thessaloniki, Greece*

**Aim:**

The aim of this study was to investigate the effect of hydrotherapy on the respiratory system of children with cerebral palsy (CP). The effect of hydrotherapy on both the musculoskeletal system of children with CP and the respiratory system of children with a variety of problems (cystic fibrosis, asthma, myopathy, scoliosis) has been extensively investigated. However, not many studies have investigated the effect of hydrotherapy on the respiratory system of children with CP.

**Methods:**

10 children with CP participated in this study. They were 5 to 15 years old. They participated in a hydrotherapy program once a week for 45 minutes, for a month. The respiratory function was measured with a spirometer, a flow-meter and a pulse oximeter. Moreover, the adjusted Greek version of test "Swimming with Independent Measure" (SWIM) was used to assess the child's progress in the control of their respiration under water. In addition, the adjusted to Greek version of the assessment forms Water Orientation Test Alyn 1 (WOTA<sub>1</sub>) and Water Orientation Test Alyn 2 (WOTA<sub>2</sub>) were used. All children were assessed twice, at the beginning (pre-test) and after the completion (post-test) of the program.

**Results:**

Eight out of 10 children completed the survey. One child was excluded from this because of an allergic reaction and one because he did not complete the program. All statistical analysis was performed using SPSS v. 16. The results indicated a statistically significant difference. Before the intervention, the mean heart rate was 93,87 bpm (HR pre= 93,87), the mean oxygen saturation was 93,25 (SPO<sub>2</sub> pre = 93,25), the mean peak expiratory flow rate was 103,75 (PEFR pre = 103,75), the mean of the maximum expiratory volume in the first second (FEV<sub>1</sub>) was 22,75 (FEV<sub>1</sub> pre= 22,75), while the mean percent of exhale volume was 0,86 (FEV<sub>1</sub> pre= 0,86). After the intervention, the mean heart rate was found 120,25 (HR post = 120,25), the mean oxygen saturation was 97,12 (SPO<sub>2</sub>post= 97,12), the mean peak expiratory flow rate was 131,25 (PEFR post= 131,25), the mean of the maximum expiratory volume in the first second (FEV<sub>1</sub>) was 24,75 (FEV<sub>1</sub>post= 24,75) and the mean percent of the maximum expiratory volume in the first second was 0,96 (FEV<sub>1</sub> post= 0,96).

**Conclusions:**

The results of this study showed that Hydrotherapy with the philosophy of Halliwick exhibits a positive effect on the respiratory system of children with CP. Further investigation is advised in order to assess the effect in a longer period of time.

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