

The Halliwick Concept according to the ICF Framework

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Abstract: The aquatic environment is often chosen by individuals, parents, exercise professionals, therapists and other professionals due to the unique characteristics that water provides. There are a variety of approaches used in both swim teaching and aquatic rehabilitation when working with individuals with impairments in the water. This paper focuses on the use of the Halliwick® Concept and the benefits this approach offers. The Halliwick Concept while developed long before the World Health Organisation's International Classification of Functioning Disability and Health (ICF) framework fits well within this model. A number of examples are outlined in this paper to highlight some of the main benefits of Halliwick on the 2 main lists of the ICF: 1. Body Functions and structures and 2. Activities and Participation. The latter is further divided into activities and participation in and out of a Halliwick session in order to demonstrate the transfer of benefits beyond Halliwick sessions.

Keywords: Halliwick, ICF disability, aquatics, rehabilitation

Introduction

The aquatic environment is often chosen by individuals, parents, exercise professionals, therapists and other professionals due to the unique characteristics that water provides. This environment provides an opportunity to utilise the principles of hydrostatics and hydrodynamics to create challenges for the individual which can benefit their health or assist them to achieve a variety of goals. Immersion in water allows for benefits to be gained from reduced loading on the joints due to buoyancy, resistance to movement through turbulence and hydrostatic pressure and the temperature of the water. These unique characteristics of exercising in water may allow people to perform exercises that they would be unable to perform on land and may also provide safer or preferable exercise conditions to those available on land.

There are a variety of approaches used in both swim teaching and aquatic rehabilitation when working with individuals with impairments in the water. This paper focuses on the use of the Halliwick® Concept and the benefits this approach offers.

The popularity rating for aquatic programmes is often high for people with disabilities¹. It has also been found that rates of swimming participation and level of enjoyment from swimming among children with disabilities are higher than that of peers without disabilities². The increased figures for people with disabilities may be attributable in part to the prescription of aquatic exercise for therapeutic purposes and additional benefits such as the greater freedom of movement experienced³, reduced pain⁴ as well as desired sensory feedback.

Halliwick Concept

Halliwick is a concept that was developed in the United Kingdom by James MacMillan in 1949 whereby the knowledge of hydrostatics and hydrodynamics is used to assist swimmers gain control of movement in the water which can lead to independent and safe movement in the water and swimming. The concept follows a Ten Point Programme which is designed to guide swimmers and instructors through a structured learning process towards achieving psychological and physical mastery of movement in water⁵. The term 'swimmer' is used to describe the learner in the water as they progress through the Ten Point Programme, emphasising the positive future participation outcome. While originally developed for people with physical disabilities the Concept is now used worldwide by a variety of populations.

Halliwick is a unique approach as it focuses not only on physical skills but also on psychological and social development. This holistic approach has resulted in the concept being used for a variety of reasons by a variety of professionals and swimmers as it can meet the individual needs of anyone wanting to use the medium of water. The Halliwick Concept exploits all that the aquatic environment has to offer but further enhances the environment through the use of individual instructors for support to each swimmer and by encouraging interaction with other swimmers through the use of games and group work. The various elements of the Halliwick Concept optimise the opportunities for learning and developing independence in an aquatic environment.

The Halliwick Concept follows a Ten Point Programme⁵. The first 2 points; mental adjustment and disengagement, are areas which are constantly being developed as the subsequent physical skills are developed. Mental adjustment refers to the development of comfort in the aquatic environment. One aspect that the Halliwick concept places emphasis on is the ability to control breathing in order to be mentally and physically relaxed. This focus on the psychological state of the individual creates a real and perceived safe learning environment where the swimmer can gain confidence in their own ability in the water. Disengagement is the process of acquiring physical and mental independence so that the swimmer is gaining control of their movement in the water. This is achieved through a conscious effort by the instructor to subtly reduce the physical, cognitive and affective supports provided to the swimmer. For this reason, Halliwick does not use flotation aids.

Points 3-6 of the Ten Point Programme focus on gaining control of movement 3-dimensionally, initially through each of the planes of movement discretely and then combining planes. This breakdown offers immense flexibility to therapists who choose to focus on the functioning of the body and are looking for a transfer of benefit from the aquatic environment to functioning on land for movement or activities of daily living. The sequencing of these points suggests a logical progression of motor control which can challenge swimmers based on their current ability level.

Points 7 and 8, upthrust and balance in stillness, challenge the swimmer to coordinate their movements in order to be able to resurface following submersion and to be able to maintain a balanced position in the water.

Points 9 and 10 of the Ten Point Programme progress the swimmer to moving through the water, initially through the assistance of turbulence and then by creating propulsion independently. At this stage the swimmer can safely engage in a variety of activities in the water.

The Halliwick Concept while developed long before the World Health Organisation's International Classification of Functioning Disability and Health (ICF) framework⁶ fits well within this model.

The ICF aims to provide a standard language and framework for the description of health and health-related states. ICF is a multipurpose classification intended for a wide range of uses in different sectors. It is a classification of health and health-related domains that help us to describe changes in body function and structure, what a person with a health condition can do in a standard environment, as well as what they actually do in their usual environment.

These domains are classified from body, individual and societal perspectives by means of two lists: a list of body functions and structure, and a list of domains of activity and participation. ICF also lists environmental factors that interact with all these components. ICF offers an extensive list of codes for capturing performance and capacity measures e.g. D4554 is the code for Swimming.

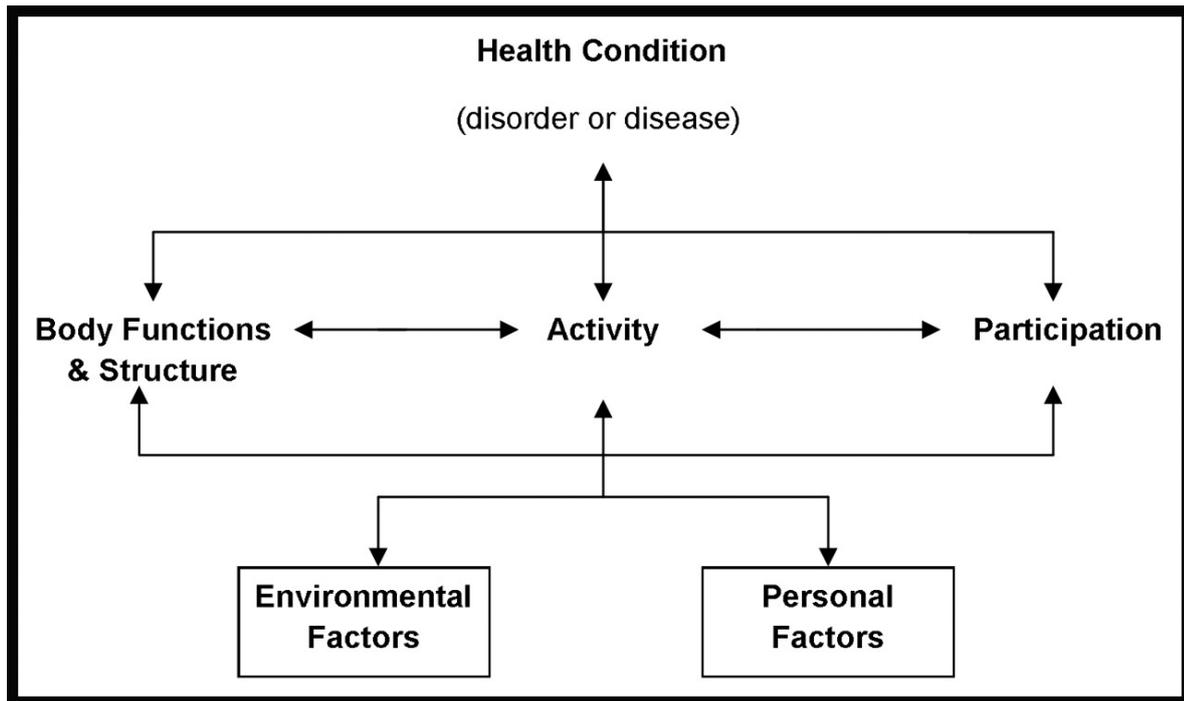


Figure 1: The International Classification of Functioning Health and Disability (ICF) 2001⁶

Figure 1 above illustrates the ICF model which shows how the components of functioning and disability (body functions & structures and activities & participation) interact with the contextual components (environmental and personal)⁶. The interactions depicted in the model suggest that changes made to any component may potentially cause change to other components.

The Versatility of Halliwick

The Halliwick Concept can be adapted and used to achieve a variety of aims, in different contexts which focus on one or more components of the ICF framework and impact on others. A number of examples will be outlined to highlight some of the main benefits of Halliwick on the 2 main lists of the ICF: 1. Body Functions and structures and 2. Activities and Participation. The latter will be further divided into activities and participation in and out of a Halliwick session in order to demonstrate the transfer of benefits beyond Halliwick sessions. The examples below show how using Halliwick in the pursuit of 5 different aims produces outcomes across the ICF Model. The way Halliwick is adapted to meet the specific aims will be reflected in the effect at the body function and structure level and the benefits in terms of participation.

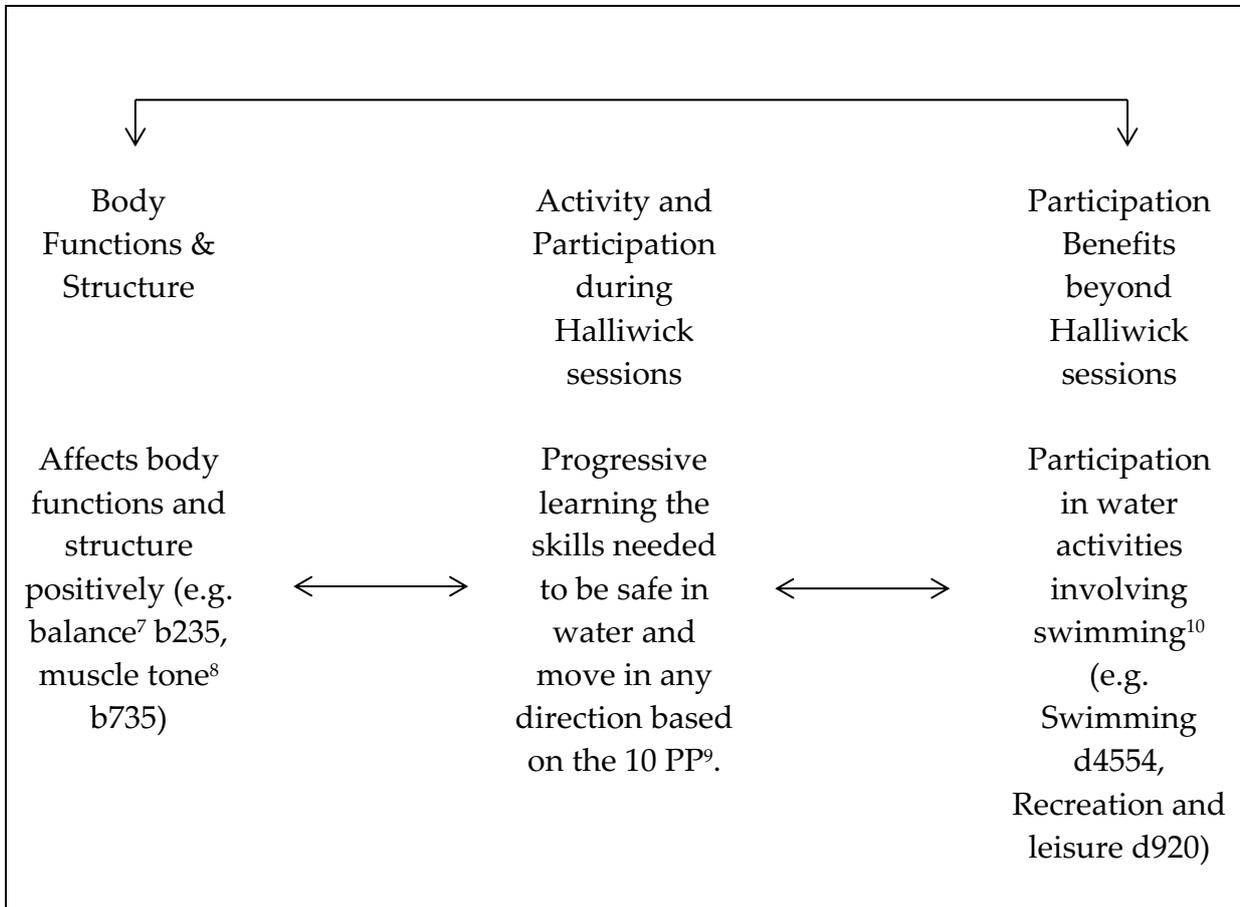
Example 1:

If your aim is to teach someone to **swim**, you can follow the 10 Point Programme (10PP) to develop the skills and confidence needed to float, coordinate breathing and change body position which are required when swimming or playing with others in the swimming pool or sea.



Figure 2: Swimmer sculling on their back

Table 1: Impact of Halliwick on the individual as defined by ICF for example 1.



In this example, Halliwick is used as tool combined with knowledge about swim teaching and aquatic fitness. A few examples of the impact on body functions and structures and participation as defined by ICF are given.

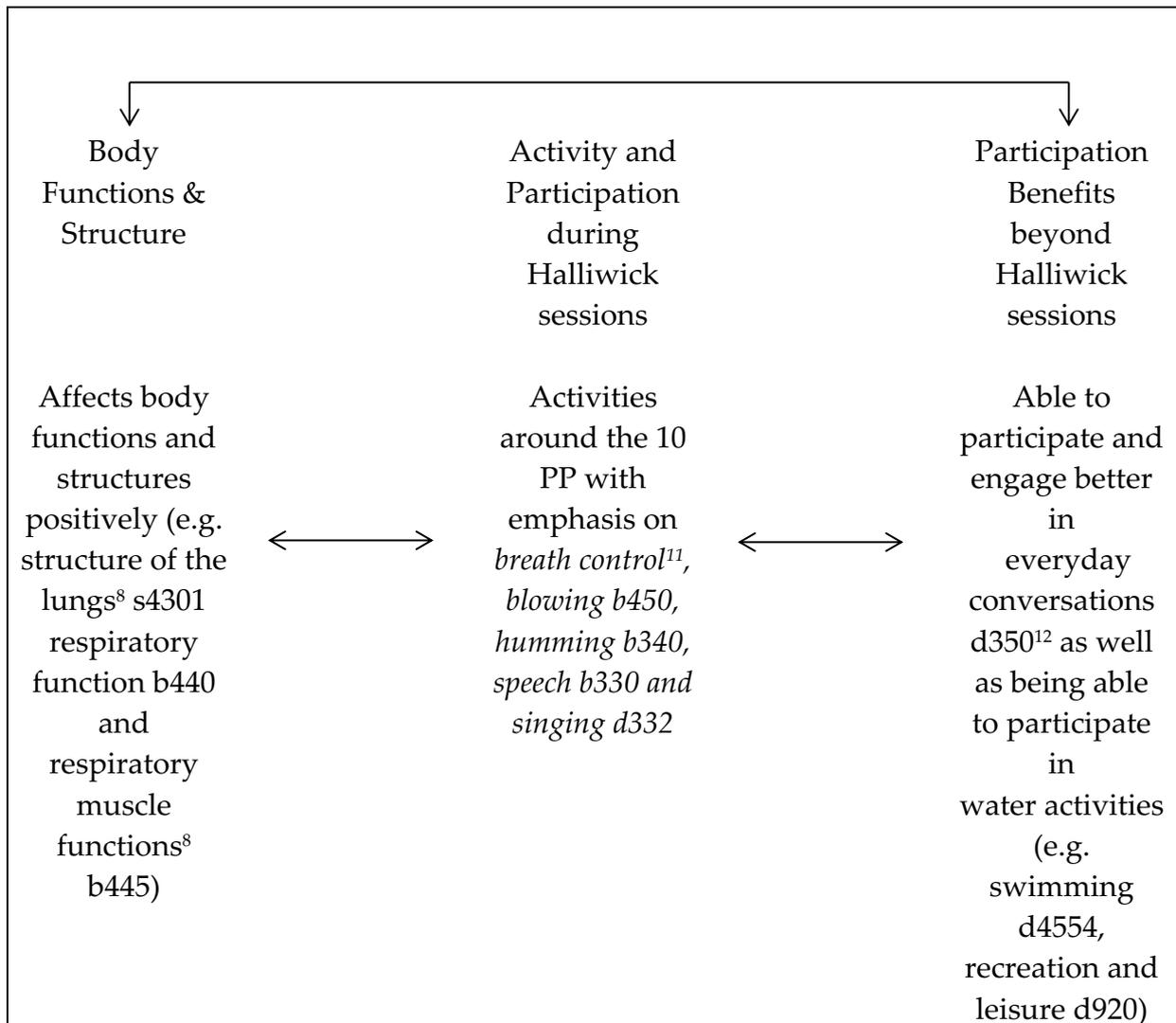
Example 2:

If your aim is to develop and improve **speech and voice production**, so that the person can more easily engage in everyday conversations, the 10 Point Programme (and the way you might adapt activities around the 10 Point Programme) allows you to create opportunities to work, for example, on coordination of lips and strengthening of the diaphragm and other muscles involved in breathing and voicing.



Figure 3: Swimmer working on breath control with the support of an instructor.

Table 2: Impact of Halliwick on the individual as defined by ICF for example 2.



In the above example, Halliwick has been used as tool combined with knowledge about respiratory function and voice production.

Example 3:

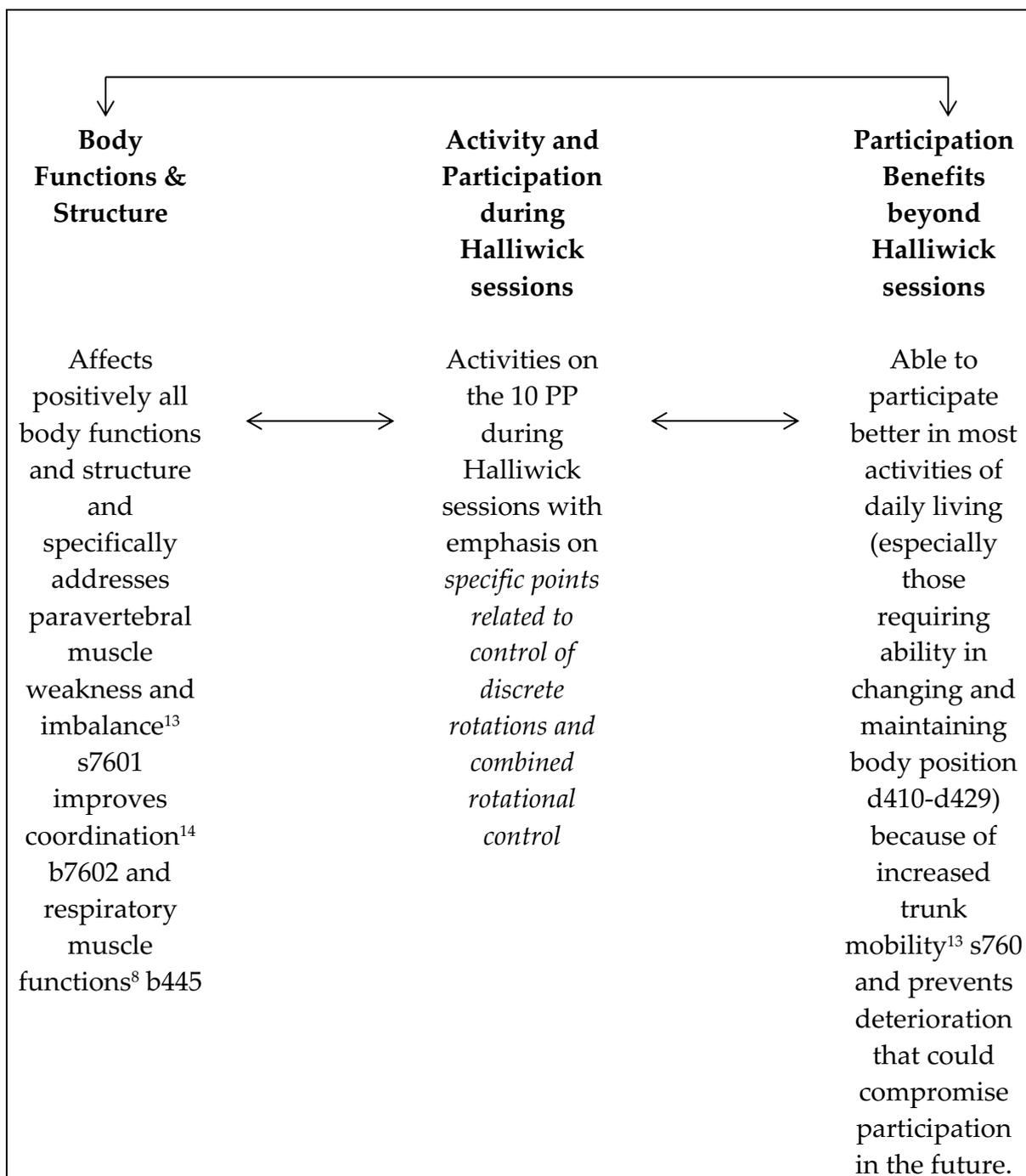
If your aim is to **reduce spinal weakness** and malalignment in the context of a **developing scoliosis**, you will find for example that 3-Dimensional control of rotation, which is part of the 10 Point Programme, in addition to exercising against the resistance of water provides you with powerful therapeutic tools to limit the deformity and reduce physical discomfort.



Figure 4: Swimmer performing a rotation

See table below.

Table 3: Impact of Halliwick on the individual as defined by ICF for example 3.



In this example, Halliwick has been used as tool combined with orthopaedic knowledge about spinal mobility and mechanisms that influences scoliosis.

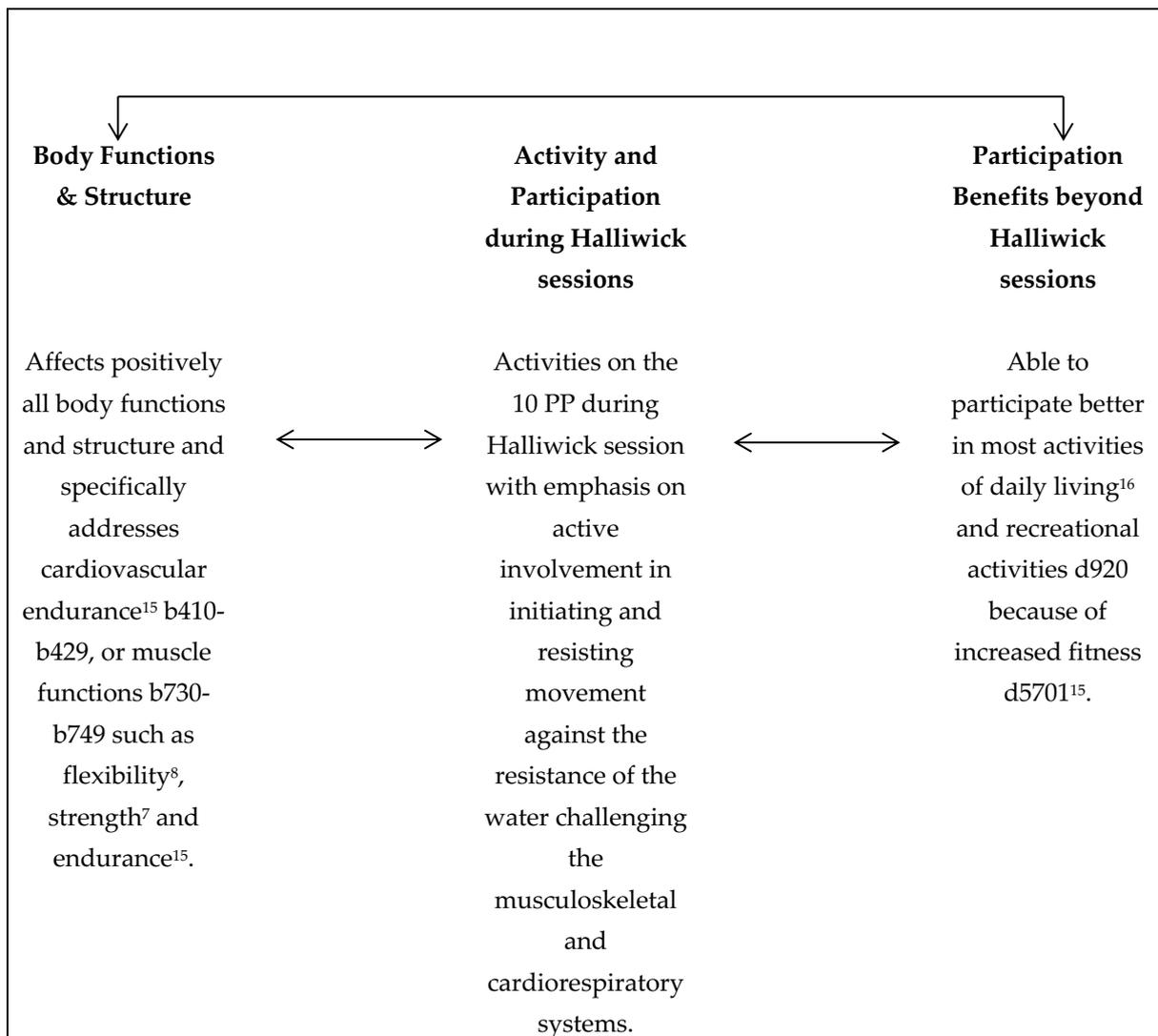
Example 4:

Halliwick and activities that supports its 10 Point Programme provides you with excellent opportunities in term of improving **health related fitness** such as cardiovascular endurance, flexibility or muscle strength. If your aim is to practice activities offering health and wellbeing benefits Halliwick offers the ability to focus on these domains.



Figure 5: Swimmer performing movements in the water.

Table 4: Impact of Halliwick on the individual as defined by ICF for example 4.



In this example, Halliwick has been used as tool combined with knowledge about sport physiology, health and fitness.

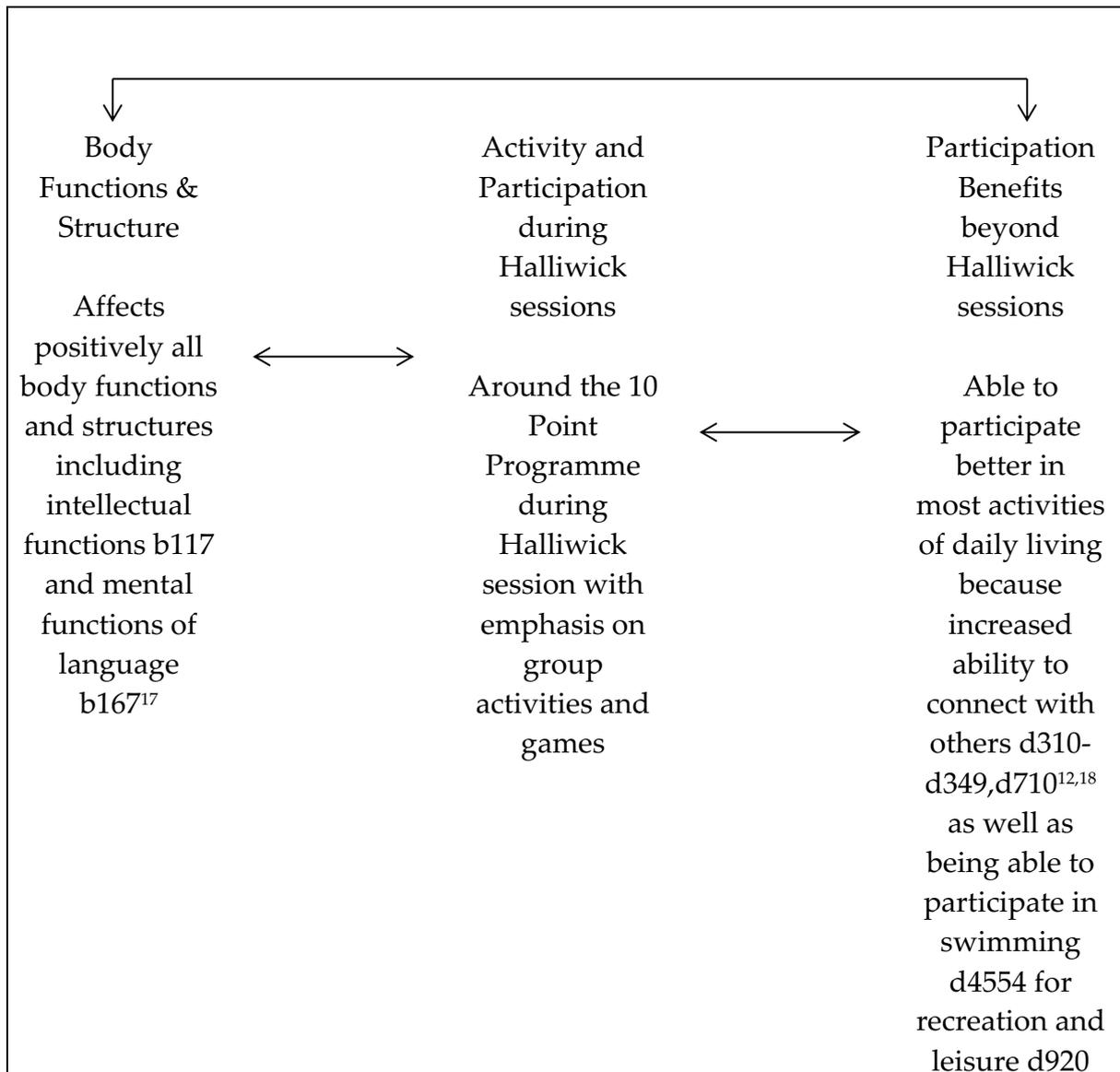
Example 5:

If your aim is to provide opportunities for a person with **autism spectrum disorder** to learn to structure tasks or develop **social and conversational skills**, you will find structured games and activities as well as opportunities for communicating and forming relationships with other swimmers in Halliwick group sessions useful.



Figure 6: Swimmer performing movements in the water.

Table 5: Impact of Halliwick on the individual as defined by ICF for example 5.



In this example, Halliwick has been used as tool combined with knowledge of autism spectrum disorders.

Contextual Factors

The examples provided in this article have focussed on the main lists of the ICF model: Body structures and functions and Activities and Participation. Figure one also showed the interaction between these areas and the Contextual factors: Personal and Environmental. Items in these categories can be identified as qualifiers i.e. they act as barriers or facilitators to functioning.

While little emphasis has been placed on the personal factors area of the ICF model (items under this heading are not classified in ICF) this is a crucial dimension to the individual which cannot be overlooked. Grotkamp et al. (2012) put forward a list of personal factors for consideration under 6 headings: general personal characteristics; physical factors; mental factors; attitudes, basic skills and behaviour patterns; life situation and socioeconomic/sociocultural factors and other health factors¹⁹. The Halliwick Concept is adaptable to cater for a diverse range of personal factors. For example, if a swimmer has a fear of water they will be provided with greater support and through a focus on activities to develop mental adjustment will slowly progress their exposure to and tolerance of water. If a swimmer does not currently identify with a group, then being part of a Halliwick club or group will help develop this sense of belonging. Activities based on the Halliwick Concept have been found to influence some of these areas. For example, increases in perceived social acceptance have been found in children with cerebral palsy following a five-month Halliwick based intervention²⁰.

The environment which is created when using the Halliwick Concept facilitates maximum participation of all swimmers. Not alone does the warm water offer an accessible environment but the addition of the support of one instructor per swimmer within a group offers sufficient support as well as the opportunity for relationships, such as friendships (e320), to develop. Halliwick Instructors also focus on the abilities of the swimmer and this positive attitude (e450) can facilitate greater motivation and effort.

Rosenbaum and Gorter²¹ suggested that a number of F words should be used when working with children with disabilities: function, family, fitness, fun, friends and future. The authors linked these words to the ICF model and argued that they provided a suitable focus for family and professionals when working with children with disabilities. Many of these elements have already been covered in the narrative so far however one important element has not yet been highlighted – FUN. The Halliwick concept, through its use of games, firmly believes that enjoyment facilitates participation and encourages repetition of activities that in turn enhance body functions and structures.

The Halliwick Concept therefore creates the environmental conditions that can influence positively personal factors and the activities selected can focus on achieving improvements in body function and structure and/or activities and participation. The choice of activities in the water to suit individual needs is guided by an understanding of the Halliwick Ten Point Programme as well as the philosophy behind the Concept. This is achieved through training of instructors who use Halliwick as a tool which they add to their other areas of knowledge and expertise.

How to know more about Halliwick?

Halliwick has developed since 1949 in a variety of ways. Over the years, volunteers and professionals have trained and are still training to allow Halliwick to be practiced in recreational context and as valuable tools for sports and health professionals. Swimming Clubs for people with disabilities where Halliwick is practiced are operating in the UK, Ireland and many other countries. Health professionals worldwide are combining the Halliwick principles with their respective professional knowledge to better achieve their specific goals.

Internationally training on the Halliwick Concept is overseen by the International Halliwick Association (IHA) who ensure consistency across the delivery of courses to people wishing to deliver Halliwick. Foundation (basic) or Advanced courses are delivered each year all around the world by accredited lecturers and senior lecturers. This training provides participants with knowledge of the Halliwick Concept, and an understanding of how to teach people with special needs to be as competent as possible in the water. The interactive courses offer a balance between pool work and theory and are attended by professionals and non-professionals. Course participants experience movements from the perspective of the 'swimmer' and as an 'instructor' and receive feedback on their performance as instructors so that they leave the course ready to apply what they have learned. Common feedback from course participants is that they have gained practical skills and knowledge which they can use professionally but also that have improved their own personal skills or comfort levels in water. Course evaluation over a 6-year period indicate high satisfaction (90% of course participants rating very good or excellent) with comments including "Great to have the theory underpinning the practical explained and discussed"²². Details on courses are available on the IHA website (www.halliwick.org).

Perspective

Interventions are becoming increasingly responsive to the preferences of the 'client'. Since exercises in the water are so popular amongst people with disabilities then it is fitting that more opportunities to meet this demand are provided. The Halliwick Concept when used appropriately offers great versatility to individuals, families and professionals who want to use water to achieve a variety of aims. All individuals are biopsychosocial beings and therefore any intervention or lifestyle choice will impact on a number of dimensions of their being. An understanding of the interactions of the domains presented in the ICF model allow us to consider the 'swimmer' in a wider context and can broaden our approach when designing activities in a Halliwick session to exploit all of the benefits which the concept offers.

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Conflicts of Interest: Both authors are accredited lecturers with the International Halliwick Association.

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