

## 28 - BENEFITS OF RACE RUNNING / PETRA SPORT FOR THE QUALITY OF LIFE OF PEOPLE WITH CEREBRAL PALSY

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### INTRODUCTION

In developing countries such as Brazil, statistics show a prevalence of Cerebral Palsy (CP) of 7 per thousand live births, mainly due to the precariousness of the public service and education that impact on precarious care in pre-birth care.

This statistic reveals the importance of developing practices that favour the inclusion of people with disabilities. In this article, we will emphasize the contributions of the interdisciplinary practice of the psychologist and physical education professional to the quality of life in people with CP. The indication of physical activities by health professionals has been established as a practice recommended by the World Health Organization since 2010 for patients based on the studies that prove benefits not only for physical but also for mental health.

#### The Pathology of Cerebral Affection or Cerebral Palsy

According to the Brazilian Association of Cerebral Palsy, CP is characterized as a group of disorders in the central nervous system that compromise the development of movement and posture, causing limitations in activities; it may occur at birth, where specific parts of the brain have been injured as a result of a medical complication (FOOSE AND ARDOVINO, 2008; SWANN, GUERRERO AND MACKEY, 2008; TECKLIN, 2008) or a result from other clinical impairments (e.g. brain haemorrhage, a tumor or injury / trauma before or shortly after birth which causes an anomaly (PORRETTA, 2017).

In 1843, an English orthopaedist William John Little described cerebral palsy for the first time. Based on his studies with children with clinical signs of spasticity. However, only fifty years later, Sigmund Freud proposes the terminology that identified three main causal factors for CP: (1) maternal and congenital (pre-birth), (2) peri-birth and (3) post-birth (MORRIS, 2007).

Another definition for CP describes it as a neurological condition manifested by a group of symptoms characterized by difficulty in controlling posture and movement caused by an abnormality or brain injury between the fetal stage and the 2-year-old. The symptoms tend to appear when the child begins to develop motor skills, among them posture disorder and persistent movement.

These injuries or anomalies can result in different types and levels of impairment among them:

- Hypertonia, which is an exacerbated increase in muscle tone or permanent in the muscle.

- Dyskinesia (Dystonia, Korea, Atetose)

- Athetosis is the continuous flow of involuntary, slow, sinuous, writing movements, usually in the hands and feet.

- Korea, which is a pathology that promotes involuntary abrupt movements and suddenly changes from one part of the body to another, usually continuous.

- Ataxia, is characterized by low muscle tone, balance and motor coordination.

The Cerebral Palsy classifications are subdivided into different categories, which are:

- Axiomatic (low muscle tone, balance and motor coordination), pyramidal spastic (Injury in the cortical spinal tract and nuclear cortic, intervene in voluntary motricity);

- Extrapyramidal (disturbance of tone, movement and posture, lesions in cortical or subcortical motor neurons);

- Hypotonic (decreased muscle tone and strength);

- Mixed (with symptoms of spastic and athetoid paralysis).

It is important to emphasize that the physical compromises imposed by the disease can also impact on mental health, since its limitations make it difficult to socialize and often favour the feeling of loss and the belief of incapacity and impact on the quality of lives of patients under such condition.

Given these limitations, a sport of Danish origin called Petra / Race Running developed in 1990 has proved to be an effective strategy for both sports and recreational activity, thus contributing to the better quality of life for such population. Petra / Race Running is an international sport where its practitioners run (regardless of their mobility, difficulty of balance or wheelchair) on a Tricycle moving on their own legs. The practice of this sport stimulates a possible improvement in motor sensory development, increased self-esteem and socialization.

Since physical mobility is one of the major limitations for an individual with CP, the sport allows CP individuals to race with the use of a tricycle, regardless their classification - those who make use of manual or electric wheelchairs, or those who they are imbalanced, have autonomy for the practice of physical activity,

Race Running is an international sport in athletics, in which athletes compete with the tricycle race on tracks ranging from 100 to 5000 m. Competitors are classified on the basis of their disability and compete with other competitors in their class. It is an innovative sport that enables people with CP, wheelchair users and amputees to race independently, making it both an option for sports and leisure.

The individual with CP tends to have the same desires as people with no disabilities, both in recreational and sports field, but for this population the barriers imposed by society make this access difficult (BUSH AND SILK, 2013). This fact has awakened the interest in developing practices that provide the quality of life for people with CP. And sport has proved to be an effective strategy for such a goal.

#### Quality of Life

According to Lim and Zebrack (2014), Quality of Life (QL) is a multidimensional, subjective construct and is related to physical, psychological, social and spiritual well-being. Achieving satisfaction in all these areas is a complex task, and in the case of people with Cerebral Palsy, because of their condition, already have limitations in at least one of these areas (physical

impairment), therefore, there is a need for complementary strategies for contributing with life satisfaction.

In this context, sport has proved to be an effective strategy, not only because it contributes to motor skills, but research emphasizes its expressive contribution to mental health, being an agent of inclusion, improving self-esteem and developing social skills in healthy patients.

Although these benefits are widely discussed for healthy populations and are already included in some treatment protocols, the literature presents few studies in populations, especially those with CP, considered to be the most frequent condition of motor incapacity in childhood (FEITOSA et al., 2017).

With regards to mental health, Feitosa et al. (2017) state that the possibility of sports practicing for autonomy promotion crucial for people with CP, as practitioners are able to develop each one a larger number of daily routines which facilitates social interaction and promotes increased self-esteem. Given these data, it can be inferred that the sport, besides promoting good physical conditioning, also promotes mental health.

The World Health Organization (WHO) for the International Classification of Functioning, Disability and Health highlights functionality as an important component for health and points out that the proposed interventions should aim at contributing to social inclusion and participation.

Regarding the perception of participation and social support, Nohara, Acevedo and Fiammetti (2010), in a study on social representations for people with disabilities in inclusion, portray speeches that reveal the feeling of well-being and happiness: "I have many colleagues, they help me whenever I need them, and I also help them. "I try to be relaxed, cheerful and friendly ... I try to always help my neighbour by talking."

#### FINAL CONSIDERATIONS

In addition to understanding the needs and demands of individuals with CP, it is important to recognize the individual behind their condition and their need to feel satisfied and happy in life. In this context, the practice of sports is a powerful tool for the improving of Quality of Life, as well as the Inclusion for people with CP or some other types of disability. In addition to improving physical fitness, it reduces maladaptive behaviour, besides improving self-esteem and social competence in children with disabilities.

Although we have few specific studies regarding Petra / Race Running observing the behaviour of athletes, as well as comparing them with other studies with CP, allows us to infer that Petra / Race Running will favour quality of life in this population.

#### REFERENCES

BUSH, A; SILK, M; PORTER, F & HOWE, P. Disability [sport] and discourse: stories within the Paralympic legacy, *Reflective Practice: International and Multidisciplinary Perspectives*. 14:5, 632-647, 2013.

FEITOSA, L. C; BAGGIO M. S. R; RODRIGUES, D. C. B; CRIPPA, A. C. S; ZONTA, M. B. O Efeito do Esporte Adaptado na Qualidade de Vida e no Perfil Biopsicossocial de Crianças e Adolescentes com Paralisia Cerebral. *Revista Paulista de Pediatria [en linea]* 2017, 35 (Outubro-Diciembre): [Fecha de consulta: 21 de noviembre de 2018] Disponible en: <<http://www.redalyc.org/articulo.oa?id=406053589011>> ISSN 0103-0582

FOOSE, A; ARDOVINO, P. Therapeutic Recreation and Developmental Disabilities. In: Robertson, T. and Long, T., eds. *Foundations of Therapeutic Recreation: perceptions, philosophies and practices for the 21st century*. Champaign, IL: Human Kinetics, 127-144, 2008.

KNAPP, D; DEVINE, SHAY D. & PIATT. Examining Perceptions of Social Acceptance and Quality of Life of Pediatric Campers with Physical Disabilities. *Children's Health Care*. 44:1, 1-16, 2015.

LIM, J; ZEBRACK, B. Caring for family members with chronic physical illness: a critical review of caregiver literature. *Health and Quality of Life Outcomes*. v. 2, n. 50, 2004.

NOHARA, J. J; ACEVEDO, C. R; FIAMMETTI, M. A vida no trabalho: as representações sociais das pessoas com deficiência. In: CARVALHOFREITAS, M. N; MARQUES, A. L. *Trabalho e pessoas com deficiência: pesquisas, práticas e instrumentos de diagnóstico*. Curitiba: Juruá, 2008.

PORRETTA, D. L. Cerebral Palsy, Traumatic Brain Injury, and Stroke. In: Winnick, J P and Porretta, D L., eds. *Adapted Physical Education and Sport*. 6th ed. Champaign, IL: Human Kinetics, 217-290, 2017.

SWANN-GUERRERO, S; MACKEY, C. Wellness Through Physical Activity. In: Robertson, T. and Long, T., eds. *Foundations of Therapeutic Recreation: perceptions, philosophies and practices for the 21st century*. Champaign, IL: Human Kinetics, 199-216, 2008.

TECKLIN, J. S. *Pediatric Physical Therapy*. 4th ed. London: Lippincott Williams & Wilkins, 2008.

#### BENEFITS OF RACE RUNNING / PETRA SPORT FOR THE QUALITY OF LIFE OF PEOPLE WITH CEREBRAL PALSY

##### ABSTRACT

The practice of sports has always been associated with longevity due to physical well-being, but there is currently an investment in research that reveals its importance to the quality of life of individuals. Regarding people with disabilities, especially with Cerebral Palsy (CP), Petra / Race Running is a sport modality in which the patient is able to take part in a race running on his own feet, which seems to be able to provide life satisfaction feeling. The aim of this study is to present a bibliographical review in order to better understand the contributions of Petra / Race Running to the quality of life of people with Cerebral Palsy. The results point to an increase in the sense of well-being and autonomy, which can be considered a strategy of intervention for the referred population.

Key-Words: Adapted Sport; Petra; Race Running; Cerebral Palsy

#### AVANTAGES DE LA COURSE À PIED / PETRA SPORT POUR LA QUALITÉ DE VIE DES PERSONNES ATTEINTES DE PARALYSIE CÉRÉBRALE

##### Résumé

La pratique du sport a toujours été associée à la longévité pour des raisons de bien-être physique, mais il existe actuellement un investissement dans la recherche qui révèle son importance pour la qualité de la vie. Dans le cas des personnes handicapées, en particulier des personnes atteintes de Paralyse Cérébrale (PC), le Petra / Course à pied, un mode sportif dans lequel le patient peut participer à une course à pied par lui-même, procure un sentiment de satisfaction de la vie. Le but de cette étude est de présenter une revue bibliographique afin de comprendre les contributions de Petra / Race Running à la qualité de vie des personnes atteintes de Paralyse Cérébrale. Les résultats indiquent une augmentation du sentiment de bien-être et d'autonomie, ce qui peut être considéré comme une stratégie d'intervention auprès de la population visée.

Mots-Clés: Sport Adapté; Petra; Course à Pied; Paralyse cérébrale

**BENEFICIOS DEL DEPORTE RACE RUNNING / PETRA PARA CALIDAD DE VIDA DE PERSONAS CON PARÁLISIS CEREBRAL****RESUMEN**

La práctica de deportes siempre se ha asociado con la longevidad debido al bienestar físico, pero actualmente hay una inversión en investigaciones que revelan su importancia para la calidad de vida. En el caso de las personas con discapacidad, en especial de las personas con Parálisis Cerebral (PC), el Petra / Race Running, una modalidad deportiva en la que el paciente puede participar en una carrera corriendo sobre sus propios pies proporciona un sentimiento de satisfacción de la vida. El objetivo de este estudio es presentar una revisión bibliográfica que permita comprender las contribuciones del Petra / Race Running a la calidad de vida de las personas con Parálisis Cerebral. Los resultados apuntan a un aumento de la sensación de bienestar y autonomía pudiendo ser considerado una estrategia de intervención a dicha población.

Palabras clave: Deporte Adaptado; Petra; Race Running; Parálisis cerebral

**BENEFÍCIOS DO ESPORTE RACE RUNNING/PETRA PARA QUALIDADE DE VIDA DE PESSOAS COM PARALISIA CEREBRAL****RESUMO**

A prática de esportes sempre foi associada à longevidade em razão do bem-estar físico, mas, atualmente há um investimento em pesquisas que revelam sua importância para qualidade de vida. Tratando-se de pessoas com deficiência, em especial das pessoas com Paralisia Cerebral (PC), o Petra/ Race Running, uma modalidade esportiva no qual o paciente pode participar de uma corrida correndo sobre os seus próprios pés proporciona um sentimento de satisfação de vida. O objetivo deste estudo é apresentar uma revisão bibliográfica que permita compreender as contribuições do Petra/ Race Running para a qualidade de vida das pessoas com Paralisia Cerebral. Os resultados apontam um aumento da sensação de bem-estar e autonomia podendo ser considerado uma estratégia de intervenção à referida população.

Palavras-chave: Esporte Adaptado; Petra; Race Running; Paralisia Cerebral