Journal of Surgery
Fizzotti G and Vigorelli V. J Surg 9: 11201
www.doi.org/10.29011/2575-9760.11201
www.gavinpublishers.com
Research Article

The Relationship Between Sport, Physical Disabilities and Rehabilitation

Gabriella Fizzotti*, Vanessa Vigorelli

Spazio Maugeri Lodi, Lodi LO, Italy

***Corresponding author:** Gabriella Fizzotti, Spazio Maugeri Lodi, Lodi LO, Italy

Citation: Fizzotti G, Vigorelli V (2024) The Relationship Between Sport, Physical Disabilities and Rehabilitation. J Surg 9: 11201 DOI: 10.29011/2575-9760.011201

Received Date: 02 December 2024; Accepted Date: 05 December 2024; Published Date: 07 December 2024

Abstract

Introduction One of the most relevant disabilities is caused by Spinal Cord Injury (SCI). Typical causes of spinal cord damage are trauma, disease, or congenital disorders. In most cases SCI leads to paraplegia or quadriplegia. Sports activities are implemented during and after the rehabilitation of SCI people in order to improve strength, aerobic fitness, and physical functioning; in addition, sports activities have positive effects on psychological well-being. The purpose of this qualitative study was to evaluate the contribution of sporting activity to the individual rehabilitation project and to compare the personal experiences of professional agonist athletes.

Material and Methods A total of twenty-one individuals: twelve males, nine females were recruited currently participating in wheelchair handbike (11), wheelchair archery (2),wheelchair tennis (1), wheelchair ski (1), canoe (1), bicycle (5) were recruited. Their ages ranged between 23 and 56. A handcycle is a type of vehicle powered by the arms rather than the legs, as on a bicycle. An informational interview is planned with the goal of gaining specific information and making better comparison. Questions concern: individual medical history, rehabilitation program, sport and athletic individual results, final considerations.

Results In eleven handbikers it has been possible confirmed the tangible increase in muscle strength of the upper limbs, the main motor of propulsion in hand bikes. From the psychological point of view to begin this new sport has given them a concrete goal to follow. This new activity has allowed them to constantly improve and to meet new people who share them own difficulties and mostly the same passion.

Conclusions The contribution of sport in rehabilitation program is important because it can be used as a tool to improve the body's compromised motor functions. Emerging evidence indicates that exercise and sports can have significant physical and psychosocial health benefits for people with SCI.

Keywords: Inclusion; Rehabilitation; Spinal cord injury; Sport

Introduction

Talking about sports and disability is not easy. The sporting agonism can became the tool to overcome body immobility after an injury. It is a complex theme that requires a multidisciplinary approach**.** One of the most relevant disabilities is caused by SCI. Typical causes of spinal cord damage are trauma, disease (such as transverse myelitis, multiple sclerosis or polio), or congenital disorders (such as spina bifida).[1] People living with SCI face many barriers to physical activity participation [2,3]. Consequently, this population is considered to be vulnerable to diseases that have been linked with a sedentary lifestyle (eg, cardiovascular disease, diabetes mellitus). The fundamental outcome of SCI Rehabilitation is to provide patient with the highest level of indipendence in all daily living activities and the highest level of participation in social life. Functional autonomy and quality of life are related to subjective perception, physical and mental health, independence in daily activities. The inclusion of persons with SCI in social and recreational activities is one of the aspects of a long-term rehabilitation plan [4]. Sports activities are implemented both during [5] and after rehabilitation in order to improve strength, aerobic fitness, and physical functioning; in addition, sports activities have positive effects on psychological well-being . It can also provide a great social environment and is a great way to meet new friends. In recent years narrative forms of

inquiry have become increasingly visible within disability studies [6-11]. The aim of this study is: to evaluate the contribution of sporting activity to the individual rehabilitation project and to compare the personal experiences of professional agonist athletes.

Material and Method

A total of 21 individuals: twelve males, nine females were recruited. 19 subjects were Elite Athletes (Figure 1): 13 SCI (2 tetraplegic and 11 paraplegic), 2 upper limb amputation post injury, 3 lower limb amputation post injury and 1 right cerebral stroke hemiplegia. Their ages ranged between 23 and 56. We considered: bicycle (5 amputations), wheelchair hand bike (10 SCI and 1 right cerebral stroke hemiplegia), 1 wheelchair tennis (paraplegic), 2 wheelchair archery (paraplegic), 1 canoe (paraplegic) and 1wheelchair ski (tetraplegic). Hand bike is a bicycle propelled by power from the arms (Figure 2) It is an instrument of cycling mobility on three wheels. An informational interview was planned with the goal of gaining specific information and making better comparison. Questions concerning: individual medical history, rehabilitation program, sport and athletic individual results, final considerations.

Figure 1: Elite athlete Wellchair archery.

Figure 2: Elite athlete Handbike.

Results

The analysis of the results showed that post traumatic damage was the more common cause of disability in considered athletes. All the persons started sporting activity at the end of individual rehabilitation program (PRI) after returning home. The athletes decided to participate in competitive activities after being a part of a group of athletes with disability. Being a part of a group helps them having a development on psychological well-being as well as on a behavioral level. In eleven handbiker it has been possible confirmed the tangible increase in muscle strength of the upper limbs, the main motor of propulsion in hand bikes. Disable people referred that sport activity can improve coordination system and balance.

Discussion

Disability changes the self-image of people consequently the subject does not recognize himself in new reality. The separation between the memory of the past and the present reality seems an unbridgeable distance; patient needs to review his self-awareness and self-esteem after traumatic spinal cord injury. Self-esteem is a general concept referring to how people perceive themselves across activities. Correlation between sport and self-esteem is very strong. Instituting sport disciplines in therapy is certainly useful on physical and psychological level. Practicing sport helps to regain one's autonomy, fulfill oneself on a social level and recover mobility. For a person with disability, enhancing the sense of personal efficacy in the physical area means intervening precisely on the area that could negatively impact the perception of self-esteem, especially if the person links the perception of self to personal physical functioning. This is why sport is inclusion. Exercise is planned, structured, and repetitive physical activity intended to improve or maintain fitness [12], whereas sport is typically a competitive form of physical activity governed by rules [13]. Community reintegration is a broad term encompassing the process of returning home and re-establishing life following an event such as SCI. The process of reintegrating back to their local community is usually difficult and challenging (Gargaro et al 2013). According to Melo (2009), the regular practice of physical activity should be seen as a tool for the facilitation of the re-integration.

Patient who wants to redeem his physical condition must retrace the stages for the acquisition of personal maturity, self-image, independence and social belonging to a group. Generally people with disability report that it is easier interact with new friends than with people known before spinal injury. Past relationships don't affect the new ones. Difficulties are overcome more easily through mutual help. The primary aim of the group is to provide the foundation for high-level collaboration. The relationship between individuals conducive to achieving something extraordinary together. The disabled person finds his opportunity with the group members that presents the same needs. Sport in rehabilitation program is important because it can be used as a tool to improve the body's compromised motor functions. In eleven handbikers it has been possible confirmed the tangible increase in muscle strength of the upper limbs, the main motor of propulsion in hand bikes. Two wheelchair archeries confirmed improvement of trunk controlling. An important aspect of this sport is that there is no difference between disabilities or non-disabled athletes'performace; it is equal both in executive practice and in the equipment. This is foundamental concept because the importance of the obtained results eliminating the differences are experienced in their fullness. It is one of the few sports where normal and para people competing together.

One Wheelchair Ski Reported That: Playing sports helps you to be with others, to live the competition and to socialize with new people. Sport makes me live again the experiences of the past and overcome disability.

The athletes of this sample confirmed that sport activity has allowed them to constantly improve and to meet new people who share their own difficulties and mostly the same passion. The study sample may not be representative of all the disable athletes'population. Further research is needed to identify the most effective goals overcoming the concept of diversity and learn inclusion.

Conclusions

Sport is one of the most immediate tool to understand and improve the functional residual abilities of disable patient. According to literature this paper indicates that sports can have significant physical and psychosocial health benefits for people with SCI. The results highlight the progressive personal growth of athlete who experiences the highest levels of autonomy to overcome disability and promote inclusion.

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