

# The structural and human resources support for Brazilian Paralympic athletes

VINÍCIUS DENARDIN CARDOSO<sup>1</sup> ✉, MARCELO DE CASTRO HAIACHI<sup>2</sup>, ALBERTO REINALDO REPPOLD FILHO<sup>3</sup>, ADROALDO CEZAR ARAÚJO GAYA<sup>3</sup>

<sup>1</sup>Physical Education Department, State University of Roraima-UERR, Boa Vista, Brazil

<sup>2</sup>Physical Education Department, Federal University of Sergipe - UFS, Aracajú, Brazil

<sup>3</sup>School of Physical Education, Physiotherapy and Dance, Federal University of Rio Grande do Sul – UFRGS, Porto Alegre, Brazil

## ABSTRACT

The purpose of this study is to describe the importance of structural and human resources support for Brazilian Paralympic athletes. It is characterized as descriptive and qualitative approach. Data collection was conducted through semi-structured interviews. Twenty Paralympians, from both Athletics and Swimming modalities, participated of this research, all of them contemplated by grant Bolsa Atleta Pódio from Bolsa Atleta program of Ministry of Sports in Brazil. The results show that Structural Support (n = 20; 100%) and Human Resources Support (n = 19; 95%) are considered fundamental by the interviewed athletes. Actions focused on improving training conditions and the support of human resources are fundamental for the development of Paralympic sport and can guarantee the emergence of new generations of Paralympic athletes in Brazil. **Keywords:** Paralympic sport; Paralympic athlete; Structural support; Human resource support.

### Cite this article as:

Cardoso, V., Haiachi, M., Reppold Filho, A., & Gaya, A. (2018). The structural and human resources support for Brazilian Paralympic athletes. *Journal of Human Sport and Exercise*, 13(4), 873-883. doi:<https://doi.org/10.14198/jhse.2018.134.14>

✉ **Corresponding author.** Physical Education Department, State University of Roraima-UERR, Boa Vista, Brazil.

<https://orcid.org/0000-0003-4669-4290>

E-mail: [vinicardoso@yahoo.com.br](mailto:vinicardoso@yahoo.com.br)

Submitted for publication January 2018

Accepted for publication May 2018

Published *in press* July 2018

JOURNAL OF HUMAN SPORT & EXERCISE ISSN 1988-5202

© Faculty of Education. University of Alicante

doi:10.14198/jhse.2018.134.14

## INTRODUCTION

Brazilian Paralympic sport is experiencing great results due to its recent achievements: eighth place at the Rio de Janeiro Paralympic Games 2016 and winner nation for three consecutive editions of the Para-Panamerican Games (2007, 2011, 2015), the main competition of Americas. This continuous progression in rankings turns Brazil into an emerging Paralympic force.

These results confirm the national Paralympic sport's evolution. It is evident the crescent number of athletes with disabilities entering the modality. Encouraged by various factors, these athletes wish to improve their performance and leverage their sports career.

The career of a Paralympic athlete goes through several stages from beginning to success. The athletes undergo through an initiation processes, long preparation periods involving training and competitions, which require more structural support and quality human resources to reach success as high performance (Haiachi et al., 2016).

Thus, structural support in high-performance Paralympic sport is of great relevance for improving the athlete's career results. This support for high-performance Paralympians provides conditions for training with sports materials and structures of quality. It is possible to consider that this aspect can make a difference in the improvement of training and in the consequent outcome of a sport competition.

In addition, trained human resources can enhance the athletic career results of Paralympic athletes. The constant presence of these professionals contributes to the development of athletes' sports career.

Swanson et al. (2008) point out that specialized professionals in Paralympic sport may be able to broaden the motivational subjects of athletes with disabilities by providing skill improvement and psychosocial skills development. Furthermore, Hutzler and Bergman (2011) emphasize that the lack of knowledge of these professionals can be considered a strong reason for the sport's abandonment.

Therefore, the investment in Brazilian Paralympic Movement grows through the years; many governmental actions (financial support, structural support, technological support, etc.) are being carried out with the purpose of developing the sport, making possible to the country to remain among the major world powers of Paralympic sport.

Moreover, with the increasing number of athletes, competitions and Paralympic modalities, it becomes important to know the relevance of the various supports for the career of Brazilian Paralympic athletes. Thus, the study aims to describe the importance of structural assistance and human resources for the athletic career of Brazilian Paralympic athletes.

## MATERIALS AND METHODS

The study is characterized as a descriptive study with a qualitative approach. Twenty Paralympians, from both Athletics and Swimming modalities, participated of this research. The characterization of the sample is shown in Table 1 below. All of them contemplated by Bolsa Pódio grant from Bolsa Atleta program of the Ministry of Sports, in Brazil. The sample was non-probabilistic purposive, since it was characterized by the use of pre-defined criteria to obtain a representative group by people capable of providing the necessary information for research (Gaya, 2018).

Table 1 Characterization of the sample

MODALITY	QUANTITY OF ATHLETES		AGE OF ATHLETES (A± SD)	TIME* OF SPORT PRACTICE (A± SD)
	MAN	WOMAN		
Athletics	07	03	28 ± 7.95	10 ± 2.99
Swimming	08	02	22.50 ± 4.54	8 ± 4.14

\* In years

Subjects were interviewed in the cities of: São Caetano do Sul-SP, Itajaí-SC, Brusque-SC and Porto Alegre-RS, with time and place defined by common agreement between researcher and athletes, and with the coaches of Athletics and Swimming Paralympic Team knowledge. The study was approved by the Committee of Ethics in Research with Human Beings of the Federal University of Rio Grande do Sul, under the No. 922.077.

To collect information, it was used a semi-structured interview, which allowed the subjects to freely discuss about the proposed theme. This technique enables a flexibility in matters according to the objectives proposed by the study (Queirós e Lacerda, 2013). The interview script was composed of the following questions:

1. *What do you consider important for the beginning of your sports life?*
2. *Can you tell if there were any situations that made it difficult for you to enter the Paralympic sport?*
3. *What are the actions that contribute to your maintaining as a high-performance Paralympian athlete?*

To register the information, a *Stereo MP3 Recording Panasonic RR-US551* audio recorder was used, and for data evaluation Content Analysis was used (Bardin, 2010). After the interviews were carried out, the essential elements in the speech of each interviewee (unit of analysis) were identified, after which, the grouping and categorization of key points according to the study objectives (thematic categories) were executed for results discussion.

## RESULTS AND DISCUSSION

We found in our study that the importance of structural assistance was demonstrated by all the athletes of this research (n = 20; 100%). All Paralympians investigated consider this kind of support fundamental.

Actions focused on improving training conditions, whether on structural issues related to training sites or sports materials, along with the support of trained professionals (multidisciplinary team), are fundamental to consolidate the sporting career. The following speeches show it:

*A1: "... Today we have a great structure, but in the old days I did not have it... I started to have a better structure in 2012, when I moved to São Paulo ..."*

*A2: "... we are going to inaugurate a great training center soon... Today we have access to scholarships and travel, we are training and have evaluations with a coach from the United States ..."*

*A4: "... a training center is being built here in Sao Paulo... It is not for the 2016 game, it is a legacy that Paralympic sport leaves, it is what athletes are doing today for the next generations ..."*

A9: "... and also the other part I consider was that my club has a very good structure, gym and physiotherapists, SESI-São Paulo... If there were no such structure, I would not have means to work ..."

A13: "... the creation of the Paralympic Training Center motivates us enough as we know that we are going to be with a new structure, first world thing itself. It will contribute a lot to nowadays generation and to the next that will come. ..."

A16: "...Also the structure, this project here, this training center... but it is to come a very good there, right? In the center of reference, this will be a great incentive of structure..."

Structural support in the Paralympic sport is of extreme relevance for the improvement of the athlete's with disability career. This reinforcement provides training conditions with quality materials and structures that can make a difference when achieving results.

In this sense, the actions that favour the Brazilian Paralympic sport are broaden through initiatives from federal and state governments along with the Brazilian Paralympic Committee (CPB). All of this contributes to the sports initiation and to the training improvement of Brazilian Paralympic athletes.

The existence and availability of suitable places for sports practice are significant to the athlete's success (De Bosscher et al., 2006). Some actions concerning sports structures have been carried out in the country.

The Ministry of Sport designed the concept of the Sport Initiation Center under the second stage of the Growth Acceleration Program (PAC 2). The purpose is to expand the offer of infrastructure with qualified public equipment, encouraging sports initiation in areas of high social vulnerability of Brazil's main cities (Brasil, 2016).

The project integrates, in a single physical space, activities and practice aimed at high performance sports, stimulating the training of athletes among children and adolescents. In addition to Olympic modalities, six Paralympic modalities will be favoured (wheelchair fencing, judo, weightlifting, table tennis, sitting volleyball and goalball). The estimated investment is of R\$967 million.

The Brazilian Paralympic Training Center is the main legacy from Rio 2016 Paralympic Games. Its construction began in December 2013, the Training Center has a land of about 140 thousand m<sup>2</sup> and is the result of a partnership between the State Government of São Paulo, through the Office for the Rights of Persons with Disabilities, and the Federal Government, through the Ministry of Sport.

The complex's main purpose is preparation, competitions and exchanges of athletes and teams dedicated to the progress of Paralympic sport; physical training and teaching of new generations of athletes and coaches, functional classifiers, referees, managers and other professionals related to the sport. In addition, it should house a research center in various scientific and technological areas associated to Paralympic sport.

The project received investments of R\$305 million, being R\$ 187 million from the federal government and R\$118 million from the government of São Paulo (R\$ 281 million (construction) and R\$ 24 million (sports equipment and materials) (Portal Brasil, 2016).

The Training Center will also reduce the costs for Paralympic confederations. Today, for example, they pay

for the training phase: place renting, lodging, transportation, food. In the Training Center, this cost will be met, generating savings and subsequently application of resources by clubs and sports associations for people with disabilities. On this matter, athlete A10 emphasizes:

*A10: "The delivery of the Brazilian Paralympic Center will collaborate to consolidate the Brazilian Paralympic sport and also favour the renewal of new generations of Brazilian athletes."*

At Rio de Janeiro 2016 Games, it was not possible to perceive the influence these training structures gave to Brazilian athletes, but it will for the Tokyo 2020 Games, Japan, as well as other upcoming competitions (Paralympic World Championships and competitions for young athletes). Future Brazilian Paralympic generations will be able to improve their preparation in this high-quality training center and contribute to the maintenance of Brazil among world leaders in Paralympic sport.

Despite this, it is also evident the need to expand the sports structures to other regions of the country.

*A1: "... I think the question of creating new state training centers, creating new structures ... can be improved ..."*

*A5: "... a training center for the people who are there will solve ... in the northeast, and the people that are there in Cuiabá and the people who are in Porto Alegre ... you have to have several training poles, put everyone where they find, each pole has its core and each core has its professionals..."*

*A7: "... if we could combine trained professionals with small training centers with a suitable structure for the disabled athlete, it would be ideal, it would be a barn for Paralympic athletes in Brazil ..."*

*A17: "... Surely if there were new training centers in different regions of the country, new athletes would come for sure..."*

This subject needs to be improved. It is up to the government representatives, and also the private sector, to give more attention to it. It is clear that new Paralympic talents can be found in different regions of the country. In a nation with 45.6 million people with disabilities (23.9% of the population) (IBGE, 2010), new training structures and competitions may favour the search for new Paralympic generations.

New training centers can provide athletes and coaches better working conditions. Where activities and goals can be shared by all. The trust between athlete and team tends to grow and generate better results.

For this to occur, along with these great structures, there is the assistance of human resources trained for the Paralympic sport. To back it up, proved by almost of the totality of the study sample. 95% (n = 19) of the athletes emphasize that this support is fundamental.

*A2: "... today, an athlete in Brazil has all the necessary support of training structure, materials, professionals to work with, all necessary equipment, so today people have a complete team ..."*

A4: "...today we have a proper athletics track, a doctor, a physiotherapist, a nutritionist, psychologist...We cannot say a thing about a professional missing because the state is giving us this support ..."

A6: "...A structure to the athlete beginning to have a follow-up of the coach, the support of a physiotherapist, the sponsorship to give you peace of mind so you can work better not worry about being more focused... Having the proper training place and always important material, sneakers... Everything is important and so the logistics that is a psychologist, a doctor, a team... how do they give multi name, multi ... multiprofessional... so if I have a multiprofessional team and I follow the whole orientation I have no doubt that sooner later (results will appear) ... "

A9: "... we have the training and evaluation week, they do all fat percentage assessment, we have access to sports doctor, girls, in the case, to the sports gynaecologist... the Committee offers us, for Athletics a very good budget, you have nothing to complain about ... "

A17: "... today we are with ... I believe that if not the best, one of the best professionals in the field of nutrition and in the field of physical education and everything... I think we are here with a lot of great guys..."

It seems that providing trained human resources to enhance the athletic career of Paralympic athletes generates positive results. The constant presence of professionals with knowledge about the particularities of people with disabilities seems to make a difference in the results and are important for the continuity or abandonment of the sports career.

Authors such as Rimmer et al. (2004), Kehn and Kroll (2009) warn that the absence of human resources (physiotherapists, psychologists, physicians) to act in the Paralympic sport is shown as a strong barrier for athletes to continue involved with the practice.

Also, Jaarasma et al. (2014) highlight this issue. The authors conducted a study with 76 Dutch Paralympians. They reported that 32% of athletes claim as one of the main barriers to their continuity in the sport the possibility of not having qualified supervision in practice.

They also call attention to the need for continued education of these professionals, paired with the increasing number of modalities and athletes entering Paralympic sport. The up-to-date knowledge of these professionals can bring benefits to the athletes. Martin and Mushett (1996) also state the qualification of human resources as a facilitator for the continuity of Paralympians in sport.

Nowadays, it is possible to perceive that health human resources are already present in modalities of the Paralympic sport. This number is increasing, given the relevance and efficiency of these professionals' support.

Sports Psychology helps in the development of Paralympic modality. Understanding the needs of athletes and providing better performance conditions during training periods and competitions.

Martin (2012) declares that sport psychologists can help Paralympic athletes develop mental abilities to manage stressful competition factors, increasing the chances of achieving better results.

Studies concerning the main reasons why athletes choose their modalities (Perreault and Vallerand, 2007), mental preparation for sport (Perreault and Vallerand, 2007; Dieffenbach and Statler, 2012), competitive stress (Campbell and Jones, 2002), anxiety (Ferreira et al., 2013) and also, sports withdrawal (Wheeler et al., 1996), are the subjects that psychology have contributed to Paralympic sport.

Physiotherapy has acted constantly in Paralympic sport and is considered extremely relevant in the rehabilitation of muscular injuries. The use of physiotherapy is progressively present in sports: acting in the functional evaluation of athletes, in the treatment of pathological conditions of the musculoskeletal system and in the prevention of injuries resulting from sports practice. It has the purpose of minimizing injuries and make this athlete return as soon as possible and safely within the physiological and clinical limits after an injury. (Silva et al., 2016).

Reynolds et al. (1994) states that after the Barcelona 1992 Paralympic Games, this professional became an integral part of the medical team delegations, active in maintaining and recovering health and consequently improving sports performance.

The doctor's role is to prevent diseases and sports injuries, treat and recover under constant re-evaluation until the beginning of physical activity gradually and carefully (Vital et al. 2007).

In addition, a sports doctor conducts the clinical evaluations of the Paralympic athletes. These evaluations should be planned in an efficient and individualized way to know the athlete's health and should be able to classify them functionally, taking into account their residual potential to improve their performance.

The physician should ensure safety and educate the athlete on how to maintain a healthy lifestyle for injury prevention during training and competitions (Vital et al., 2007).

Nutrition also plays a key role in Paralympic sport. Barreto et al. (2009) emphasize that: Adequate food is one of the keys to good performance in exercise and to health. Nutritional care in people with disabilities must be reinforced, as they are more susceptible to secondary health problems. The authors also point out that in athletes with amputations, body weight should be controlled, to not overload the present limb, avoiding bone problems.

Goosey-Tolfrey and Crosland (2010) report that it is important to evaluate the nutritional intake of disabled athletes so that energy-consuming food programs can be developed to improve efficiency during training and competition. All of this helps to improve the training conditions of Paralympic athletes.

In Brazil, some initiatives have emerged to increase the number of human resources trained to work with the Paralympic sport. The CPB offers courses and workshops to prepare physical educators, physiotherapists, physicians, nutritionists, psychologists, massage therapists, nursing technicians and occupational therapists, among others. Besides the theoretical participation, these professionals follow and act in stages of Paralympic competitions of adults and teenagers in Brazil.

The CPB launched, in early 2010, the Brazilian Paralympic Academy (APB). It is focused on two areas: Education and Training; Science and Technology, and aims to foster and produce the scientific knowledge

of the Paralympic sport.

The "Education and Training" area has the purpose of training and qualifying professionals to work in the various areas of Paralympic Sport, such as management; communication and marketing; functional classification; arbitration; training of Paralympic modalities; health area; athletes-guides, and other areas of interest.

The area of "Science and Technology" of APB is the sector responsible for the coordination, elaboration and execution of the programs and projects in the area of Science and Technology focused on the various areas of the Paralympic sport, having a close relationship with Higher Education Institutes from public and private sectors in Brazil.

Then, the APB offers to the scientific community technical qualification courses for coaches of athletics, Swimming, Weightlifting, Goalball, and also training courses for functional classifiers in sports such as: Athletics, Swimming, Weightlifting, Shooting, Fencing wheelchair and Paracanoe (CPB, 2016).

The CPB also establishes, in its Strategic Planning 2010-2016, the University Project for Paralympic Education. This project aims to promote and enhance the training and qualification of human resources based on the latest technical and scientific knowledge focused on the technical preparation actions from university students and professionals who work in the sports development of children, teenagers and adults with disabilities (CPB, 2010).

Promoting and valuing the production, propagation and repercussion of the technical-scientific knowledge of the Paralympic sport in a scope of actions directed to technical preparation of university students and professionals who work in the Paralympic development of children, teenagers and adults with disabilities.

In this way, it is also up to the universities to expand the knowledge network. The university should be an allied in the development of professionals qualified for the Paralympic sport. Cardoso (2011) say: the academic qualification of professionals working in Paralympic sport is the initial process for the production and dissemination of scientific and professional knowledge.

Ribeiro and Araújo (2004) emphasize the necessity for higher education courses in Physical Education and other health areas to be able to prepare future teachers to work along with Paralympic, competitive, recreational or educational sports.

In addition, knowledge generated by scientific research should be applied to qualify and improve the training of athletes, promoting the advancement of high-performance sports in the country.

It is possible to affirm that the factors that have caused some countries to become great sports powers is precisely the use of knowledge generated by science in areas of sports management, organization and training.

Thus, Brazilian universities need to be attentive and enthusiastic for the Brazilian Paralympic sport, to be part of the development and contributing to the consolidation of the country as a Paralympic power.



## CONCLUSION

The Brazilian Paralympic sport is growing fast every day. New brands, new records, make success as a result of hard work and great planning by athletes, coaches and managers. The level of performance of the Paralympic athletes' surprises at each new competition.

Actions focused on improving training conditions - structural issues related to training sites and sporting materials - are considered as fundamental for the development of Brazilian Paralympic sport.

The Brazilian Paralympic Training Center is one of the main legacies that Rio de Janeiro 2016 Paralympic Games leave for the country. Considered one of the most modern sports center of the world, it is very likely that new Paralympic sports talents will be formed and developed within this sporting structure.

However, it is still necessary to expand the structural support actions, in order to cover all regions of the country. New training centers in different Brazilian states can expand the number of Paralympic sports talents.

The assistance of human resources is fundamental for athletes and their development in the chosen sports modality. This support helps to improve the results during athletes' career. The continuous passing of knowledge by human resources during periods of training and competitions are fundamental for the athlete to achieve the best result possible.

Thus, Brazil is considered an emerging power World Paralympic sport and the actions for its development grow every year and can consolidate this position of Brazil in the world scenario and transform the country into a great new Paralympic talent pool.

## REFERENCES

- Bardin, L. (2010). *Análise de Conteúdo* (70th ed.). Lisboa.
- Barreto, F., Panziera, C., Sant'anna, M., Mascarenhas, M., & Fayh, A. (2009). Avaliação nutricional de pessoas com deficiência praticantes de natação. *Revista Brasileira de Medicina Do Esporte*, 15(3), 214–218. <https://doi.org/10.1590/S1517-86922009000300010>
- Campbell, E., & Jones, G. (2002). Sources of stress experienced by elite male wheelchair basketball players. *Adapted Physical Activity Quarterly*, 19(1), 82–99. <https://doi.org/10.1123/apaq.19.1.82>
- Cardoso, V. (2011). A reabilitação de pessoas com deficiência através do desporto adaptado. *Revista Brasileira de Ciências Do Esporte*, 33(2), 529–539. <https://doi.org/10.1590/S0101-32892011000200017>
- CPB-Comitê Paralímpico Brasileiro (2016). *Academia Paralímpica Brasileira*. Retrieved January 20, 2016, from <http://cpb.org.br.187.38-89-161.groveurl.com/academia-paralimpica-brasileira/>
- CPB-Comitê Paralímpico Brasileiro (2010). *Planejamento estratégico do esporte paraolímpico brasileiro 2010-2016*. Retrieved December 30, 2016, from <http://www.cpb.org.br/wp-content/uploads/Planejamento-Estrategico-2010-2016.pdf>
- De Bosscher, V., De Knop, P., Van Bottenburg, M., & Shibli, S. (2006). A Conceptual framework for analysing sports policy factors leading to international sporting success. *European Sport Management Quarterly*, 6(2), 185–215. <https://doi.org/10.1080/16184740600955087>
- Dieffenbach, K., & Statler, T. (2012). More Similar than Different: The Psychological Environment of Paralympic Sport. *Journal of Sport Psychology in Action*, 3(2). <https://doi.org/10.1080/21520704.2012.683322>

- Ferreira, FA; Bussmann, AJC; Greguol, M. (2013). Incidência De Lesões Em Atletas De Basquetebol Em Cadeira De Rodas. *Revista Terapia Ocupacional*, 24(2), 134–140. <https://doi.org/10.11606/issn.2238-6149.v24i2p134-140>
- Goosey-Tolfrey, V., & Crosland, J. (2010). Nutritional Practices Of Competitive British Wheelchair Games Players. *Adapted Physical Activity Quarterly*, 27(1), 47–59. <https://doi.org/10.1123/apaq.27.1.47>
- Haiachi, M., Cardoso, V., Reppold Filho, A., & Gaya, A. (2016). Reflexões sobre a carreira do atleta paraolímpico brasileiro. *Ciência E Saúde Coletiva*, 21(10), 2999–3006. <https://doi.org/10.1590/1413-812320152110.18512016>
- Hutzler, Y; Bergman, U. (2011). Facilitators And Barriers To Articipation While Pursuing An Athletic Career: Retrospective Accounts Of Swimmers With Disabilities. *Therapeutic Recreation Journal*, 44, 1–6.
- IBGE. (2010). Censo Demográfico 2010: Características Gerais Da População, Religião E Pessoas Com Deficiência. Rio de Janeiro.
- Jaarsma, E., Geertzen, J., De Jong, R., Dijkstra, P., & Dekker, R. (2014). Barriers And Facilitators Of Sports In Dutch Paralympic Athletes: An Explorative Study. *Scandinavian Journal Of Medicine & Science In Sports*, 24, 830–836. <https://doi.org/10.1111/sms.12071>
- Kehn, M., & Kroll, T. (2009). Staying Physically Active After Spinal Cord Injury: A Qualitative Exploration Of Barriers And Facilitators To Exercise Participation. *BMC Public Health*, 9(168). <https://doi.org/10.1186/1471-2458-9-168>
- Martin, J. (2012). Mental Preparation For The 2014 Winter Paralympic Games. *Clinical Journal of Sport Medicine*, (1), 70–73. <https://doi.org/10.1097/JSM.0b013e31824204cc>
- Martin, J., & Mushett, C. (1996). Social Support Mechanisms Among Athletes With Disabilities. *Adapted Physical Activity Quarterly*, 13(1), 74–83. <https://doi.org/10.1123/apaq.13.1.74>
- Perreault, S; Vallerand, R. (2007). A Test Of Self Determination Theory With Wheelchair Basketball Players With And Without Disability. *Adapted Physical Activity Quarterly*, 24, 305–316. <https://doi.org/10.1123/apaq.24.4.305>
- Portal Brasil2016 (2016). Centro De Treinamento Paralímpico Inicia Suas Operações. Retrieved June 30, 2016, from <http://www.brasil.gov.br/Esporte/2016/05/Centro-De-Treinamento-Paralimpico-Inicia-Suas-Operacoes>
- Queirós, P. M. L., & Lacerda, T. (2013). A importância da entrevista na investigação qualitativa. In I. Mesquita & A. Graça (Eds.), *Investigação qualitativa em desporto (CIF12D)*, pp. 175–206). Porto: FADEUP.
- Reynolds, J., Stirk, A., Thomas, A., & Geart, F. (1994). Paralympics-Barcelona 1992. *British Journal of Sports Medicine*, 28, 14–17. <https://doi.org/10.1136/bjism.28.1.14>
- Ribeiro, S., & Araújo, P. (2004). A Formação Acadêmica Refletindo Na Expansão Do Desporto Adaptado: Uma Abordagem Brasileira. *Revista Brasileira de Ciências Do Esporte*, 25(3), 57–70.
- Rimmer, JH; Riley, B; Wang, E; Rauworth, A; Jurkowski, J. (2004). No Title. *American Journal of Preventive Medicine*, 26(5), 419–425. <https://doi.org/10.1016/j.amepre.2004.02.002>
- Silva, A; Vital, R; Mello, M. (2016). Atuação Da Fisioterapia No Esporte Paralímpico. *Revista Brasileira de Medicina Do Esporte*, 22(2), 157–161. <https://doi.org/10.1590/1517-869220162202154214>
- Swanson, S., Colwell, T., & Zhao, Y. (2008). Motives For Participation And Importance Of Social Support For Athletes With Physical Disabilities. *Journal Of Clinical Sports Psychology*, 317–336. <https://doi.org/10.1123/jcsp.2.4.317>
- Vital, R; Silva, HGP; Sousa, R. (2007). Lesões Traumatológicas Nos Atletas Paraolímpicos. *Revista Brasileira de Medicina Do Esporte*, 13(3), 165–168. <https://doi.org/10.1590/S1517-86922007000300007>

Wheller, GD; Steadward, RD; Legg, D; Hutzler, Y; Campbell, E; Johnson, A. (1999). Personal Investment In Disability Sport Careers: An International Study. *Adapted Physical Activity Quarterly*, 16(3), 219–237. <https://doi.org/10.1123/apaq.16.3.219>



This title is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivs 4.0 Unported License](https://creativecommons.org/licenses/by-nc-nd/4.0/).