La Riatletizzazione tra Attività Sportiva e Attività Motoria

Return to Functional between Sporting Activity and Motor Activity

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Abstract

The aim of the paper is to highlight the main aspects of functional re-education as a tool for the recovery of the athlete after an injury. Specifically, the fundamental stages of a re-education process have been outlined, considering the latter between sports and motor activities.

Re-education is also considered as a tertiary prevention tool that not only optimizes routes, but is a potential source of savings.

For this reason, the present work also considers the managerial implications deriving from the construction of a path that relies on a structural organization that influences the performance of the teams.

Lo scopo del paper è quello di evidenziare gli aspetti principali della riatletizzazione quale strumento per la ripresa dell'atleta dopo un infortunio. Nello specifico, sono state delineate le tappe fondamentali di un percorso di riatletizzazione, considerando quest'ultimo a cavallo fra le attività sportive e quelle motorie.

La riatletizzazione è altresì considerata come uno strumento di prevenzione terziaria che permette non solo di ottimizzare i percorsi, ma risulta essere una potenziale fonte di risparmi.

A ragion di questo, il presente lavoro considera anche le implicazioni di natura manageriale derivanti dalla costruzione di un percorso che faccia leva su di una organizzazione strutturale che influenzi la performance dei teams.

Keywords

Return to functional; Sport; Physical activity.

Riatletizzazione; Sport; Attività fisica.

Introduction¹

The most recent sporting experience shows clear lines of meaning in the activity of the subjects that perform sport activities, sports disciplines and the importance that they carry out in the life of different people besides in the social fields.

This context also highlights the increase in traumatology and actions, a complete recovery of sport in general and the athlete in particular (Zaffagnini, Bruni et al, 2008).

Historically, this path has been entrusted mainly to the physiotherapist who, once rehabilitated, returns the athlete to the trainer for the resumption of activity; in this passage there is a risk of overloads, with hypotheses of inflammation, recurrence and in any case a slowing down of the recovery path if not the completion of the same (Giannotti, 2007).

The experience of the sciences has concerned the training of the sport that is found, in the case of post-rehabilitation subjects, to receive little information and little support from those who have worked in the immediately preceding phase, in fact, of reactivation (Gregory et al, 2012).

The rehabilitation has been defined as the last phase of the rehabilitation process, in which, exploiting the principles of sports training, the complete recovery of the conditional abilities and athletic-specific skills of the athlete will occur ".

It is a field of care for the reintegration process of the specialist sportsman who has developed over the last twenty years between the health professions of rehabilitation, physiotherapy, and that of a kinesiologist more relevant to training. In fact, it has been noted that this process is increasingly important in order to obtain the maximum specific functional restitutio in neuromotor and biomechanics in high-intensity performance actions.

Following the physiological returns of functionality in the field of movement and the cessation of hypofunctionality which allows the integration of the man according to daily life necessities it is necessary to access a third phase necessary to bring the athlete back to the activities preceding the pathological lesion. The sportsman therefore needs a further activity compared to those of the sedentary common person, not being enough to bring him back to a logic of basic functions of the social man, but having to go further, to what he could perform previously, which constitutes a peculiar living space, additional to the vital space of basal restitution of a medium subject. The rehabilitation process is therefore successive and further compared to that of rehabilitation, described by the World Health Organization as "the use of all systems aimed at reducing the impact of disability and the condition of disability by means that, at the time same, can help disabled people to achieve an optimal social reintegration " (Abbott, 2014; Beynnon, 2002).

The peculiarities of the athlete and / or sportsman in fact already characterize the scope of biological damage recovery: after the necessary surgical-medical treatment necessary for the repair of the injury, the athlete's rehabilitation is different from that of the athlete as well it differs even more from that of the sedentary subject. The athlete will need his repair systems, enhanced compared to a normal subject thanks to training, targeted and personalized sessions in order to proceed cautiously towards the best and fastest recovery. What has been said allows us to fully grasp the meaning of the definition proposed by S. Fiorini on Riathletization (2003): "Riathletization is the last phase of the rehabilitation process in which, exploiting the principles of sports training, the complete recovery is achieved. conditional abilities and athletic specific abilities of the athlete "; in this part of the study I intend to focus on the statement of "exploiting the principles of sports training".

¹ The manuscript is the result of a collective work of the authors, the specific contribution of which is to be referred to as follows: Antonio Ascione: Introduction and paragraph n. 1 – Patrizia Belfiore: paragraph n. 2 and Conclusion

1. Return to functional: physical activity and sport

The identification of the rehabilitation and rehabilitation operative areas and of the operating activities as well as of the respective professional figures of reference, as we have seen, leads to affirm the opportunity to build up teams of different professionals who are adapted to the specific recovery path. overall that the patient will have to follow in order to activate the effective employment of those same areas of life that he had before the trauma. However, this is not sufficient if it is not defined how to build the work team, determine its respective activities and the coordination criteria as well as the allocation of the respective responsibilities (Sajovic, 2005).

An essential contribution in this process can be given by a management activity defined as management science, and, more specifically, by sport management. This inception derives from the evidence, emerging over the years, which places the intra-functional and inter-functional coordination between the central factors in determining monetary, economic, temporal, human management and their efficiency. Topics that are dedicated to the studies and academic areas related to the management of human resources, the definition of their positions, roles and tasks. Although I know that these studies and related theories have been developed mainly with reference to business activities and business contexts, they can still be a valid reference parameter also for sports clubs and federations which share with the former the need to achieve objectives and targets deriving from an extended behavioral process aimed at an intangible product subjected to different ales (Orio et al, 2016; Di Palma et al, 2017). In the world-class teams and in the leading football clubs, whose business is characterized by economic interests strongly equivalent to those of large companies, the differences are further reduced and the performance objectives are headed by a structural and operational pyramid which they watch from a part, the actors of the sports organization and, on the other, the athletes in the front line.

Although sometimes these objectives seem to deviate from short-term interests (such as daily needs of players in the game, which sees pressure from many stakeholders to its participation), they naturally return to realign in the medium to long term as necessary conditions so that they can be reached the most important targets and guarantee the increase over time (clearly, to continue with the example just mentioned, a player who is likely to get injured, compromises the investment in the long run) (Gallè, 2017; Belfiore, 2018).For a sporting society, its athletes certainly represent the "work force" necessary to produce the sport result and trigger the virtuous spiral, but also raw material, in the sense of constituting themselves an object of media interest and unique characteristics that make them more difficult replaceable with respect to a "common" employee.

2. Management of return to functional and sport

Returning to the definition of Management added to its semantic expansion of the term has come to identify this area as a science that studies how to coordinate the attitudes and skills of individuals to achieve objectives and objectivity using resources in an efficient and effective way. To achieve such a goal it is necessary to understand in the sense of planning, organizing, leading or directing, controlling the organization in place (Masteralexis et al, 2012). The resources available involved in the process are human, financial, technological and natural. Nowadays the world of sport is a social phenomenon as well as being a personal right. This significance is revealed by looking at the part of the industry, of most industrialized nations, fueled by this sector. The phenomenon, aroused predominantly by the media interest, is realized by unveiling its potential in economic terms and elevating it to the business. For such a rampant and urgent need, joint with the very high specificity of the sector that requires to manage multidisciplinary specificities, the Management of Sport emerges as an economic branch that can better satisfy and exploit this lever (Rejc, 2018).

Thus defined, for the purposes of this study, the boundaries of a material so intersected between the two disciplines, medical and sports, appears even more important, in order to optimize the recovery and performance of the athlete, the management of this process also from the point of view of a company, club or federation governance with its athletes, which can place a balanced focus at the center between the economic and health interests of the athlete in question.

This lack of ability to identify precise boundaries of one or the other professional area creates problems in managing the phases and can lead to a deterioration of the process that has been completed so far in the evolution of the recovery of the subject. Therefore, as in any management area, especially economic, it is probably desirable a well-hierarchized support organization that allows the comparison and dialogue between the supporting figures of the team (Burland et al, 2013). These examples of integration derive from numerous European and world experiences on the complex management of this event. In this regard, it is interesting to mention the model proposed by H. Paul Dijkstra and N. Pollock "Performance Health Management and Coaching based on the UK Athletics experience in preparation for the London Olympic and Paralympic Games" in which the medical and technical team are directed by experts in the field working in synergy, looking for common performance objectives, ascribable to the Director of Performance and reviewed by the body of the Directors (Dijkstra, 2014). Such a system was simplified by a balanced approach from training to competition decisions, especially in cases of illness and / or injury of the observed athletes. It is now a consolidated belief that the structural organization influences the performance of the teams, therefore its optimization should be a strategic priority for every club or sports organization. In such well-organized nations, we have moved from medical management consisting of services focused on injuries, reactive delegates to general practitioners, orthopedic surgeons and other clinicians specializing in sports with a clear long-term neglect on the athlete (Drogset, 2002). The model proposes SEM (specialists in sports medicine and physics with integration of 6 years of training and study on the subject) who have a role at the top of the decision-making pyramid about the athlete's health management, through the definition of objectives reachable by the teams in charge, thus marginalizing the work of the physiotherapist who sometimes seems the unique and decisive figure that ratifies the RTS.

Overcoming the problem of dependence of the doctor from the club, from which it appears to be subjected to pressures for significant economic interests through clear definition of roles and an appropriate external body such as the "Faculty of Sports and Exercise Medicine and General Medical Council" in Great Britain. Athletes who can refer to a specific department of medicine with different specialists who may have different consultations, but always validated by the team and not a single reference as a clinical dictate. In the current state, and in most of the managements of the Clubs, the head coach or a physician influences and has provisions superior to clinical decisions, this in the proposed model can not happen (Sylia, 2014). The obstacle is bypassed by the organizational figure of the Performance Director who, having heard the medical opinion, together with the athlete, decides alternative routes that are more suited to the case. For operational choices, the model has also developed a colored graduated scale to highlight the injury / injury risk areas of the athletes and the relevant intervention priorities according to the necessary specialists, on the basis of the specially designed organigramme (Drogset, 2008). Such a structured intervention appears useful and appropriate also in the light of the testimonies given in numerous other published papers describing the difficult cooperation and frequent conflicts dictated by high levels of specialization and the necessary constitution of an environment characterized by high levels of intra and inter professional interaction. in professional teams (Heba et al, 2015).

In the literature some scholars have tried a different approach extolling in particular the preventive function of Reli-loyalty, in a more general context, to carry out an economic evaluation in terms of cost-effectiveness by calculating the real and hypothetical incidence of a prevention program. This induction is possible on the basis of the epistemic ascription of the reorganization to the Prevention category: one of the interventions considered coincides with this branch. In this sense it is interesting the study proposed by Simon Gianotti and Patria A. Hume in New Zealand by applying a preventive program, with different sports-specific interventions, to different national sports (Di Palma, 2017; Belfiore et al, 2018).

This study elaborates a formula of outcomes of the costs before and after implementation that highlights the point of balance between the number of participants in sport in relation to the prevalence of injuries and the cost of the prevention program. Excellent solution in order to decide positively or negatively about an investment in the preventive area. This study appears to be pioneering, although of generic application in various areas and at all levels of prevention possible, thanks to the achievement of ROI and giving light to a long-term vision about sports prevention programs. There have been nine national sports in this area, including football and alpine skiing. The variables in the pre-implementation formula to obtain the number of how many preventive interventions are necessary in order to exceed the costs have been: cost of the program with national distribution, the total supported by each injured person or by the administrators (current costs), maximum number of participants of the analyzed sport, historical number of participants to whom the prevention program intends to apply, number of participants that could be the target (Taks, 2011). The post-implementation formula includes these variables considered: delta between the number of complaints before and after the application of the program, corrected complaints according to what would have happened if no program had been implemented. This study would fill the gap about the effectiveness or otherwise of applying a specific preventive program in sports with a high risk of injury, possibly saving careers of many athletes. Through the correction of certain parameters we could also estimate the possibility and the applicability in terms of cost-effectiveness and return on investment of rehabilitation programs, especially because within the preventive programs of this study there are specific sports training approaches as an education to the athletic gesture and performance intelligence, the first objectives of the path of re-optimization

Conclusions

Thus emerges a complex picture in the process of recovery of the athlete who, opportunely investigated, still offers ample room for improvement. The professionalization of the athlete's activity and activity together with the huge economic interests requires the knowledge of technical tools and specific skills in the management organization of the athlete's activity, of the team within which he carries out this activity, sporting body that represents it up to the federation of belonging. It must therefore take into account the inseparability between sport and accident, such that the planning of the recovery path can already be structurally integrated into the sports organization in question (Belfiore et al, 2018).

However, specialization must not be understood as indifference; the different activities are in fact connected and more strongly interdependent: the physiotherapist must take into account the patient-athlete's specialty and the specific work of rehabilitation that awaits him and that will be represented by the kinesiologist, who in turn will have to receive from the first news and information on any problems or problems encountered during the rehabilitation phase, comparing each other on the best solutions for the full and more efficient recovery of the athlete (Di Palma et al, 2017).

The regulation of this deliveries not only belongs to the logic and professional diligence, but must be built with rigor and scientific analysis involving interests that are not exclusively the patient's own, extending in the case of the athlete to the sports club of belonging, to the federation itself up to the community of fans and supporters who await their return.

The conceptual formulas expressed in this study can be achieved through the allocation of the management function in charge of a subject who oversees and coordinates the activities and dialogue between physiotherapist and kinesiologist in order to ensure the correct and efficient transfer of knowledge and information.

References

- Abbott, A. (2014). The System of Professions: An Essay on the Division of Expert Labor (Institutions). University of Chicago Press.
- Belfiore, P., Di Palma, D., Ascione, A. (2018). Adapted Physical Activity (Apa) For The Tutelage Of Patients With Type II Diabetes. Acta Medica Mediterranea 2018; 34: 1257.
- Beynnon, BD., Johnson, RJ., Fleming, BC., Drogset, JO., Grontvedt, T., Tegnander, A. (2002). Anterior cruciate ligament replacement: Comparison of bone-patellar tendon-bone grafts with two- strand hamstring grafts. A prospective, randomized study. J Bone Joint Surg Am. 2002; 84-A(9):1503–1513.
- Burland, JP., Toonstra, J., Werner, JL., Mattacola, CG., Howell, DM., Howard JS. (2013). Decision to Return to Sport After Anterior Cruciate Ligament Reconstruction, Part I: A Qualitative Investigation of Psychosocial Factors. Br J Sports Med. 2013;47(1):15-26.
- Di Palma, D., Ascione, A., Belfiore, P. (2018). *Experimental Approach Of Water Polo Training To Improve Psycho-Physical*. Acta Medica Mediterranea 2018; 34: 1253.
- Di Palma, D., Ascione, A., Peluso Cassese, F. (2017). Management of sports activity and disability in Italy. Sport Science 2017; 10 Suppl 1: 18-22.
- Dijkstra, HP., Chakravert, NPC., Alonso, J M. (2014). *Managing the health of the elite athlete: a new integrated performance health management and coaching model*. Br J Sports Med, 2014;13(3):638-44.
- Drogset, JO., Grontvedt, T. (2008). *The effect of graft choice on functional outcome in anterior cruciate ligament reconstruction*. Int Orthop. 2008; 32(4):473–478.
- Drogset, JO., Grøntvedt, T. (2002). Anterior cruciate ligament reconstruction with and without a ligament augmentation device: Results at 8-Year follow- up. Am J Sports Med. 2002; 30(6):851–856.
- Gallè, F., Di Onofrio, V., Romano Spica, V., Mastronuzzi, R., Russo Krauss, P., Belfiore, P., Buono, P., Liguori, G. (2017). Improving physical fitness and health status perception in community-dwelling older adults through a structured program for physical activity promotion in the city of Naples, Italy: A randomized controlled trial.GeriatrGerontolInt. 2017 Oct;17(10):1421-1428.
- Gianotti, S., Hume, PA. (2007). A cost-outcome approach to pre and post-implementation of national sports injury prevention programmes. 2007 Dec;10(6):436-46.
- Gregory, D., Myer, Larry Martin., Kevin, R., Ford, Mark V., Robert, S., Heidt, Jr, Colosimo, A., Timothy, E.(2012). Investigation performed at Cincinnati Children's Hospital Medical Center, No Association of Time From Surgery With Functional Deficits in Athletes After Anterior Cruciate Ligament Reconstruction: Evidence for Objective Return-to-Sport CriteriaAm J Sports Med. 2012 O; 40(10): 2256–2263.
- Heba, A., Delbani, S., Hassane, KE., Khodor, HH., Karaki H. (2015). Criteria for the return to sport after reconstrution of the anterior cruciate legament (RACL) ESJ 2015 Special edition Vol.1 ISSN: 1857 – 7881.
- Masteralexis, LP., Barr, CA., Hums, MA. (2012). *Principles and practice of sport management*. (4th edition) Ontario, Jones and Bartlett Learnings LLC.
- Orio, F., Tafuri, D., Ascione, A., Marciano, F., Savastano, S., Colarieti, G. (2016). Lifestyle changes in the management of adulthood and childhood obesity. MINERVA ENDOCRIN-OLOGICA 2016; vol. 41, p. 509-515.
- Rejc, E., Floreani, M., Taboga, P., Botter, A., Toniolo, L., Cancellara, L., Narici, M., Šimunič, B., Pišot, R., Biolo, G., Passaro, A., Rittweger, J., Reggiani, C., Lazzer, S. (2018). Loss of maximal explosive power of lower limbs after 2 weeks of disuse and incomplete recovery after retraining in older adults. J Physiol. 2018;596(4):647-665.
- Sajovic, M., Strahovnik, A., Komadina, R. (2005). Endoscopic reconstruction of the anterior cruciate ligament using bone-patellar tendon-bone grafts fixed with bioabsorbable or metal interference screws: A prospective randomized study of the clinical outcome. Am J Sports

Med. 2005; 33(8): 1160-1165.

- Sylvia, C., Brad A. (2014). Variables Associated With Return to Sport Following Anterior Cruciate Ligament Reconstruction: A Systematic Review. Br J Sports Med. 2014; 48(5): 356–364.
- Taks, M., Kesenne, S., Chalip, B. (2011). Economic Impact Analysis Versus Cost Benefit Analysis: The Case of a Medium-Sized Sport Event. International Journal of Sport Finance, 2011;6:187-203.
- Zaffagnini, S., Bruni, D., Russo, A., Takazawa, Y., Lo Presti, M., Giordano, G., Marcacci, M. (2008). ACL reconstruction: Double strand plus extra-articular sling vs double bundle, randomized study at 3-year follow-up. Scand J Med Sci Sports. 2008; 18(5):573–581.