Medicina Sportiva (2017), vol. XIII, no 1, 2833-2838
Journal of the Romanian Sports Medicine Society

Management of sport to improve the performance and status of the wellbeing of people with disabilities

Davide Di Palma[1], Filomena Mazzeo[2], Antonio Ascione[1]
[1]*Department of Sport Sciences and Wellness, Parthenope University, Naples, Italy*
[2]*Department of Science and Technology, Parthenope University, Naples, Italy*

Abstract. The goal of the research project, which is also the subject of this paper, is twofold. It aims to demonstrate that through the appropriate management of a sports program, specifically of water polo, it is possible to achieve both an increase in the sports performance by a group of disabled athletes, and an increase in their health and well-being level.
The 10 athletes were subjected to a series of trainings, planned and performed by staff specialized in water polo and in the management of individuals with disabilities, for a period of 8 months, and have performed two series of assessments at the beginning and at the end of such period of sports activity.
Improvements both in terms of the sports skills and in terms of the level of psycho-physical well-being of all individuals with disabilities who took part in this project were recorded. This proved that sports activity, if managed efficiently, can provide benefits on the athletic performance and on quality of life for persons with disabilities.
Key words: *sport performance, psycho-physical wellbeing, waterpolo, sport management, disability*.

Introduction

To date, disability is one of the main social, health and economic problems worldwide. It's estimated that more than a billion people in the world lives with some form of disability. At least one-fifth of them, approximately 200 million individuals, suffers from severe disabilities, and so they are forced to face a number of significant difficulties and problems in everyday life. In addition, the percentages of disability in the world are constantly increasing due to the progressive aging of the population, and the consequent increase in individuals suffering from chronic-degenerative diseases (1, 2).
Sports activity can often be an important tool to enable social inclusion for the disabled person (3, 4). On the other hand, the concept of sport is more and more frequently associated with that of disability. In fact, the link between sport and disabilities is inherent in the social nature of the first, and in the possibility of improving the psycho-physical status in the disabled subject (5-7). The "adapted" sports activity originated in the relatively recent period (in the Forties), and provides a valuable aid to promote independent living and the social inclusion of people with disabilities; for years the Paralympics Olympics are performed right after the most popular Olympics, and include an always-increasing number of disciplines, federations and athletes (5, 8, 9).
But it needs to have projects managed optimally in order that, through sport, effective and efficient objectives (both in socio-health, economic and even athletic terms) able to contribute to the improvement of the conditions of disability worldwide can be pursued. In fact, sports management does not only concern the mere economic aspect of this sector, but includes the will to plan, organize and control activities and projects concerning sport itself. In this regard, this paper proposes the analysis of a recent research activity managed to assess the improvement of the athletic performance and the mental and physical benefit of a group of 10 disabled athletes, as a result of a water polo training program lasting 8 months.
It needs to point out that the project recognized by the FINP (*Federazione Italiana Nuoto Paralimpico* - Italian Paralympic Swimming Federation) and involved also the FISDIR (*Federazione Italiana Sport Disabilità Intellettiva Relazionale* - Italian Intellectual and Relational Disabilities Federation), a Federation which is related directly to the CIP (*Comitato Italiano Paralimpico* - Italian Paralympic Committee).

Material and Method

The study was carried out on a sample of 10 young male athletes with disabilities and aged between 14 and

22 years; specifically, 8 athletes were characterized by mild physical disability, while the remaining 2 athletes by mild mental disability.
The sports discipline, the subject of the research project, to which the sample was subjected, was water polo; in this regard, all 10 athletes were able to approach a water discipline and possessed the basics of swimming.
The project lasted for 8 months, from October 2015 to May 2016; this period corresponds to the training period of a regular season for a water polo team registered in a FIN (Italian Swimming Federation) championship. It needs to specify, in reference to the time, that the long-term project went on also after the duration expected and is still in progress, but the tests, assessments and outcomes presented in the elaborate refer specifically to that period.
The boys were subjected to two weekly trainings followed by a friendly meeting with a team of non-disabled subjects every 2/3 weeks; there was also an aggregative meeting, consisting of a group dinner between athletes and coaches, every 2 weeks. The training sessions involved both a part focused on swimming another one focused on the teaching of the water polo fundamentals: eggbeater, couple dribbling, shots on goal (10, 11, 12); while the aggregative meeting had mainly the aim of refining the team spirit and stimulating a process of social inclusion.
The staff consisted of an instructor holding the highest water polo coaching level recognized by the FIN and national certificates attesting his knowledge of the first aid and cardio-pulmonary resuscitation techniques, and two collaborators holding the first the water polo coaching level recognized by the FIN.
During the training, the sample was subjected to two different test methods and relative assessments inherent in the two different research objectives of the athletic-sports and medical-social research. Both methodological approaches provided for a first series of tests with associated measurements and assessments in November 2015 (time n°1), after an initial period lasting a month dedicated to the athletes' adaptation, and the repetition of the same series of tests at the end of the project in May 2016 (time n. 2).
In reference to the will to detect the presence of an improvement in sports performance of the research sample, the latter underwent the following series of tests in time n° 1, and then repeated it in time n° 2 (13, 14): 25-meter freestyle at the maximum speed; 50-meter freestyle at the maximum speed; Maximum number of consecutive couple dribbling without making the ball drop.
Specifically, for the last test which involved the use of the ball, the best performance was evaluated on a maximum of 10 attempts. Concerning the analysis the expected increase in the level of psycho-physical well-being, first in time n° 1 and then in time n° 2, the 10 subjects responded, with the help of the instructors (when necessary) to the "SF-12 Standard questionnaire on health status" (15).

Results

The first important result to note is that all of the 10 disabled athletes who took part in the research projects completed it, setting up a situation characterized by a drop out equal to 0. In addition, an average level of attendance in the training of a 78% was detected, which further validated the analyses carried out.
As for the outcomes obtained from the measurement and test assessments, submitted at time n° 1 and time n° 2 to 10 water polo disabled athletes who dealt with the 8-month training, they will also be surely specified on the basis of the objective for which they were programmed. In reference to the sports objective of the test measurements carried out in time n° 1, they are presented in Tables I and II.

Table I. 25/50 Meters Freestyle (time 1)

Athlete	25 Meters Freestyle	50 Meters Freestyle
1	38.00	1:20.11
2	32.12	1:08.30
3	34.09	1:11,96
4	44.15	1:38.19
5	35.08	1:13.01
6	33.08	1:10,14
7	40.07	1:29.02
8	34.88	1:13.02
9	39.08	1:30.27
10	38.91	1:29.30

Source: Our Elaboration

Table II. Consecutive passes (time 1)

Pair of athletes	25 Meters Freestyle
1-2	15
3-4	9
5-6	11
7-8	6
9-10	6

Source: Our Elaboration

It can be noted how the assessment parameter pertaining to the 25-meter freestyle sprint at maximum speed oscillates between a value of 32 seconds and 12 hundredths of a second (32.12) performed by the athlete 2, and a value of 44 seconds and 15 hundredths of seconds (44.15) by the athlete 4. According to the 50-meter freestyle sprint at maximum speed it is still the athlete 2 that achieves the best outcome with a time of 1 minute, 8 seconds, 20 hundredths of second (1:08.20), as it is always the athlete 4, with a time of 1 minute, 38 seconds and 19 hundredths of second, that determined the other extreme of this range. Finally, as regards the last sports test, that one mainly focused on the fundamentals of the water polo discipline, the best performance was achieved by the athletes 1-2 pair who performed 15 consecutive dribbling without making the ball drop, while the lowest number of consecutive dribbling was established by the athletes 7-8 and 9-10 pairs with 6 consecutive dribbling.
The results analyzed in time n° 2, as a result of the 8-month training, are shown in tables III and IV and are characterized by the fact of being all more performing compared to those measured in time n° 1. In fact the extremes of the measured values in the various tests are the following: 25-meter freestyle at the maximum speed; 30.08 (athlete 2) – 42.78 (athlete 4); 50-meter freestyle at the maximum speed: 1:04.98 (athlete 2) - 1:36.04 (athlete 4); maximum number of consecutive couple dribbling without making the ball drop: 21 (1-2 pair) - 10 (7-8 pair).

Table III. 25/50 Meters Freestyle (time 2)

Athlete	25 Meters Freestyle	50 Meters Freestyle
1	36.14	1:17.13
2	30.08	1:04.98
3	31.14	1:09.12
4	42.78	1:36.04
5	32.94	1:11.09
6	32,02	1:07.29
7	38.37	1:25.08
8	33.12	1:11.12
9	38.22	1:28,13
10	35.08	1:27.19

Source: Our Elaboration

Table IV. Consecutive passes (time 2)

Pair of athletes	25 Meters Freestyle
1-2	21
3-4	12
5-6	18
7-8	10
9-10	11

Source: Our Elaboration

Again, it is important to emphasize that in the 25-meter freestyle at the maximum speed the athlete 10 is the one with the best differential between the two measurement periods, reaching the 3 seconds and 83 hundredths of second (3.83); while in the 50-meter freestyle at the maximum speed the best differential between time n° 2 and time n° 1 was achieved by the athlete 7 with 3 seconds and 94 hundredths of second

(3.94); in the dribbling test, however, it was the 5-6 pair that reached the highest increase from a time interval to another, with 7 additional dribbling to the previous outcome

Focusing then the analysis to the assessments regarding the measurement of a possible increase in the level of health and psycho-physical well-being perceived by the athletes as a result of the sports project, it is stressed that in time n° 1 the following main overall indications for the whole sample emerged: the well-being and health level was perceived as "poor"; the health status negatively influenced the level of concentration in daily activities; the health status limited the expected performance in the various daily activities (mainly in the study); the majority of subjects (7/10) felt "almost always" discouraged and sad, while the rest of the subjects (3/10) felt discouraged and sad for a "long time"; the entire sample felt "almost never" full of energy; the health status interfered "almost always" in social activities, carried out both in the family and with friends.

After the 8-month training in the water polo discipline, characterized also by a fairly large number of Integrating meetings, the second survey, carried out by means of the SF-12 Standard health status questionnaire, the following progresses were observed: the well-being and health level was perceived as "good" for 6/10 of the sample, "acceptable" for 3/10 and even "very good" for the athlete 2; the health status no longer influenced the level of concentration in the daily activities for 6/10 of the sample; the health status did not limit the expected performance in the various daily activities (mainly in the study) for almost all of the sample (8/10); the entire sample felt "almost never" discouraged and sad; the entire sample felt full of energy for "a long time"; the health status interfered only to for "part of time" in social activities, carried out both in the family and with friends.

Discussion and Conclusion

In order to discuss the results obtained from the projects subject of this scientific contribution, it is necessary to make an assumption on the importance of the optimal management of the sports sector. Indeed, it should be noted that the meaning of "sports management" must be not absolutely referred to the economic dynamics, but it involves the will to organize, coordinate, manage and control effectively and efficiently any expression of sport, especially if devoted to persons belonging to vulnerable groups such as the disabled (3, 4).

The ability to pursue both the objectives of the research was, in fact, the result of a sports project for disabled athletes managed in the best possible way, both in the training modalities and in the social approach, thanks to the presence of highly qualified human resources, infrastructure and appropriate materials and tools.

As anticipated, a net improvement of sports performance by all athletes participating in the project was achieved, which emphasizes the "normality" with which any person, if trained appropriately, can obtain an athletic benefit. The study carried out by Kung & Taylor (2014) confirmed this hypothesis, showing that the propensity to sports by the disabled is even higher than that showed by the non-disabled (16). On the other hand, nowadays, sport disability is continuously developing and, however, it needs suitable structures and workforce (17, 18).

Important results were then obtained in relation to the will to increase the health and well-being level perceived by the young athletes participating in research projects, through sports activities. Clear improvements were found mainly in the emotional and social status of the athletes who, at the end of the training period, claimed not to feel sad because of their disability condition for the benefit of a perception of energy and will to emerge. This, in turn, generated a benefit also in the sphere of social relationships with family members and with the rest of the people. This result is also reflected in several studies in the literature involving sports athletes with disabilities, in the US school-age children, who have developed greater self-esteem and, above all, a higher degree of autonomy with respect to disabled subjects of the same age who do not practice sports (19). In perfect agreement are also the study results regarding sports activity for people with disabilities in Australia, which reaffirm the autonomy increased by athletes with the same disabling condition, sex, age and education level, and also adds the need to propose policies to encourage the practice of sports in relation to the different forms of disability (20).

In addition, the opportunity to practice team sports activity such as water polo, organized and managed in a way in detail, made it possible to pursue a benefit also on the performance and level of concentration that athletes paid only to daily activities.

So what emerged from the results has fulfilled the research objectives, confirming that sport is a development opportunity for disadvantaged communities, like that of the disabled, but only if this is organized and managed precisely in relation to this opportunity (21).

Another confirmation is represented by the Paralympics that, thanks to an efficient management, have made it possible that there was, over time, a strong sense of awareness by the disabled (and in respect of them) on their condition and the possibility of achieving success in life through an "Olympic" sports event. All this by going beyond the conception of disability understood as limit and granting the disabled subject the possibility to be a sports, and consequently, a social/economic resource (8).
The importance that sport can play in the management of important social and health problems, such as disability, was highlighted.
In fact, a project that involves the administration of a training program for a specific sports activity to a group of disabled people can increase both his athletic and sport performances, and improve the well-being and health level they perceive (22).
More specifically, through the management of a research strategy focused on the practice of water polo for a period of eight months, a marked improvement in the quality of life of disabled athletes, who have positively changed their emotional state and developed a greater predisposition to socialization with the peers, was observed (23).
Through sports, disabled athletes can reach a higher level of self-esteem and autonomy that makes them move away from the conception of disability understood as an insuperable limit, to the benefit of a vision that enhances their condition (4).
It is appropriate, however, to emphasize that sport does not constitute in itself a winning strategy to be adopted in any circumstance, but it needs also to be managed efficiently and effectively so to experience the athletic, health and social benefits resulting from the research project analyzed in this contribution.

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Corresponding author
Filomena Mazzeo
Science and Technology, Parthenope University, Naples, Italy
E-mail address: *filomena.mazzeo@uniparthenope.it*

Received: February 2, 2017
Accepted: May 15, 2017