

Artistic gymnastics and down's syndrome

SARA DI CONCILIO¹, DANTE FORTE², BARBARA SENATORE³

^{1,2,3}University of Salerno, Salerno, ITALY

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Abstract:

Women's artistic gymnastics is one of the oldest existing sports, present in the Olympic program since 1896. It involves the use of four large apparatus: floor exercise, uneven bars, balance beam and vault. Down's syndrome is a pathology that falls within the intellectual-relational disabilities of genetic origin, characterized by the presence, in the genetic kit, of an additional chromosome, the number twenty-one, which is why the syndrome is now recognized as "trisomy of chromosome 21". The objective of this study is to verify, through a type of research called case study with ethnographic approach, whether the athlete with Down's Syndrome finds, in the practice of this discipline, benefits from the personal point of view, particularly with regard to self-esteem and social inclusion and verify, through the monitoring of a year's work, whether or not there is an improvement from the technical point of view. The case is represented by Carlotta Sanna from Cagliari, a 23-year-old gymnast suffering from Down's Syndrome, who follows the Special Olympics program; the study made use of the point of view of the gymnast's coach, Greca Rossi. The results, obtained through unstructured interviews and a logbook with a technical evaluation of the 2018/2019 sporting year, have shown how the practice of this discipline has enriched the personal and social background of the gymnast and how he is able to expand his technical skills thus allowing her to compete both nationally and internationally with great results.

Key words: Down's syndrome; artistic gymnastics; ethnographic approach..

Introduction

Women's artistic gymnastics is characterized by the use of large apparatus: floor exercise, balance beam, uneven bars and vault. It's a discipline that requires many physical abilities: speed, dexterity, strength, balance, elasticity, as well as harmonization of movements and musicality.

Down's syndrome has specific characteristics, the most common are: generalized muscular hypotonia, small head with superabundant nuchal skin, eyes with shape facing upwards, small nose sometimes crushed, small ears located below, small mouth. As far as the cognitive sphere is concerned, the syndrome can be accompanied by mental retardation, which can vary from mild (with IQs between 70 and 50), moderate (between 50 and 35), to, in rare cases, severe (between 35 and 20) (Altavilla et al, 2016).

The greatest gap, in subjects affected by this disease, is that between the logical-rational competence and the emotional-social one, in which the latter will develop more than the former. The aspects that present the greatest compromises are those of the sphere of perception, problem solving, abstraction and memorization (Valentini et al, 2018).

From a motor point of view, children with Down's Syndrome reach development with evident delay compared to children with typical development, due to marked hypotonia and lack of control of muscle contraction.

For the intellectually-relational disabled, including those suffering from Down's Syndrome, the Special Olympics program, an international sports association that also organizes the Special Olympics Games every four years, provides four levels of competition for the women's section, where they compete for:

- vault
- uneven bars
- balance beam
- floor exercise
- all around (combination of the scores of the four apparatus)

Material and method

The method used is that of the case study. It is a set of ways of doing research that have in common the decision to focus the cognitive investigation on a situation that may be indicative of a larger set of problems. The case study is a tool to deepen the knowledge of a process, rather than its individual products, the understanding of a context as a whole, rather than the specific variables, in short, an activity based on discovery, rather than on confirmation (D'Elia et al, 2018).

The case study focuses on an event in the space and time in which it takes place (real context) by recording the most significant characteristics of the event itself.

This methodology is characterized by the set of questions to which the researcher is called to provide answers, following the following steps of work:

- identification and selection of the data to be collected;
- data collection;
- analysis, connection and interpretation of the data, through the inference on the causal relationships between the variables under investigation and research;
- elaboration of conclusions that lead the results back to the initial variables of the research and define the scope of the generality of the results themselves to different subjects and different situations.

The tools used in this study are the unstructured interview, which allows the collection of qualitative data, and the logbook for the narration of the facts investigated (Raiola et al, 2017).

The ethnographic approach is a methodology in which the observer carefully studies the individual case and does not always aim to achieve practical goals. It consists in studying for a certain period of time what you are interested in and through some research techniques, such as observation or interview, allows you to understand the object in question. It prefers the use of participatory observation for the collection of information in specific contexts, but is often integrated with the use of other detection techniques (e.g. unstructured interviews, logbook, life stories).

Results

In order to investigate the social and personal sphere, as well as the perception of the sporting experience, two unstructured interviews were carried out, one with the gymnast and one with the technician. From the answers obtained by the gymnast, it is a sporting experience lived with maximum positivity, not only from the personal point of view, but also with regard to the paradigm of social inclusion. Some of the questions asked were so structured:

- ***What motivated you to continue the practice of this discipline for all these years?***
 - It practically pushed me to keep believing in myself, and to always go on, and in believing in dreams, and I believe in it. To believe in it you always have to put sacrifices, work, determination and everything else into it.
- ***What was the best gymnastics experience for you?***
 - Going to the Special Olympics summer world championship in Los Angeles 2015
- ***Is there any aspect of gymnastics you'd like to change?***
 - No, I wouldn't change anything because it's a discipline as beautiful as it is.
- ***Would you recommend this discipline to other children with Down's Syndrome?***
 - Yes, I would recommend it to other boys with Down's Syndrome because artistic gymnastics is a sport for everyone, sport is important to integrate and to make many friends and acquaintances, in sport despite performing the exercises and also way of having fun and being all together and to give yourself the strength to overcome any obstacle.
- ***You think gymnastics has personally enriched you?***
 - It has enriched me a lot, because despite everything I remain committed both to the personal point of view and to my family. Because it made me grow and also mature even more and it evolved me to improve even more, in the performance of my life.

From the interview with the technician, the answers underlining the benefit at a psycho-physical level that disabled athletes get from the practice of this discipline, especially with regard to self-esteem and socialization. It is important, however, to underline the criticism that the technician makes of the institutions, which still show a lack of interest in the disabled. Some of the questions asked were so structured:

- ***Are your athletes exclusively affected by Down's Syndrome or are they also affected by other intellectual/relational disabilities?***
 - Among my athletes there are various types of disabilities, not just Down's Syndrome.
- ***How many times and for how many hours do your athletes train in a week?***
 - Unfortunately we fight with the availability of the gyms, the institutions are not close enough and the space for us is a bit reduced. Artistic gymnastics suffers from the fact that to carry it out needs special tools see beam, rings, parallel etc.. I mean that it is not like a football field that you can find quite easily, so we can train 2 times a week for 1 hour and a half each day per hour, but we are working to increase training.

- ***What do you think are the most critical points in teaching artistic gymnastics to people with intellectual-relational disabilities?***

- You need to know how to work with a lot of love, how to take your athletes in a different way from each other, with some it takes firmness with others sweetness. You don't have to get tired of waiting for the results, but try and try again waiting for the right moment, which will come, the moment when that exercise,

which until a moment before seemed never to be learned by that athlete, a moment later as by miracle it is done. Never be in a hurry for the results. And beware the result is not only to make a kippe on the asymmetrical parallels but the result is also to see an autistic boy walking without being held by the assistants on a beam on the ground.

- Have you noticed any psycho-physical benefits related to the practice of this discipline in your athletes in the long run?

Certainly, aware of their achievements in the sport, they increase their self-esteem. To live the conquests of one's companions with joy, to help one another even just to move a carpet from one side of the gym to the other, to go to the companion to comfort him if he has performed an exercise not exactly up to his expectations, increases the level of socialization; even the scolding can be useful and I do not save them just because they are disabled. For me they are my boys and girls and if I have to intervene for incorrect behavior, with the approval of the families, I intervene in no uncertain terms.

For the technical evaluation, the coach was asked to monitor the year of work 2018/2019 of the gymnast, reporting in a logbook, for the periods September-January and February-June, the difficulties acquired by the gymnast in each tool and for each category of elements. The results showed a technical improvement in almost all the categories of equipment elements beam, free body and parallel in the second half of the year, only the vaulting does not result in an increase in technical difficulty but only a consolidation of the elements performed at the beginning of the year. All this reflects a positive situation if one takes into account the fact that the gymnast is an adult (23 years old) and has already 13 years of experience behind her, therefore with a wealth of skills already acquired. The logbook was structured as follows:

TECHNICAL EVALUATION GYMNAST WITH DOWN'S SYNDROME

APPARATUS	ELEMENTS REQUIRED	SEPTEMBER-JANUARY	FEBRUARY-JUNE
FLOOR EXERCISE	<ul style="list-style-type: none"> ACROBATIC ELEMENTS GYMNASTIC ELEMENTS 	The gymnast presents elements of medium difficulty, such as rolling forward, without any kind of help / assistance from the technician, proving to be already in possession of a certain degree of coordination and autonomy consolidated over time.	The gymnast increases the degree of technical difficulty in the acrobatic elements, passing from a rolling to a tipping over, even if it needs a minimum help from the technician; in the gymnastic elements it improves and consolidates the one acquired in the previous five months.
BALANCE BEAM	<ul style="list-style-type: none"> REVENUE TURNS BALANCES JUMPS OUTPUTS 	The gymnast performs a series of elements already of medium-high difficulty in all the required categories; for some needs of the help/assistance of the technician	The gymnast does not propose elements of a higher order but consolidates those acquired in the previous five months; she no longer needs any type of help/assistance from the technician demonstrating a greater car of my own and a complete acquisition of the elements
UNEVEN BARS	<ul style="list-style-type: none"> REVENUE ELEMENTS ON LOW BAR ELEMENTS ON HIGH BAR OUTPUTS 	The gymnast is already able to perform elements of medium-high difficulty that require a major work of muscle strengthening; in almost all categories of elements needs the help / assistance of the technician	The gymnast shows technical improvement in all categories of elements. Particularly in the category of exits and elements performed on high voltage, the required difficulties are all fully acquired. The gymnast no longer needs the same degree of help/assistance from the technician.
VAULT	<ul style="list-style-type: none"> VAULT 1 VAULT 2 	The gymnast performs an element of medium difficulty, i.e. a forward tipping, which repeats for both executions	The gymnast does not present an increase in technical difficulty in the execution of jumps, but improves and consolidates that acquired in the previous five months.

Conclusions

Artistic gymnastics is a highly complex and selective sport, which requires countless physical qualities such as speed, elasticity, strength, dexterity that does not make it a discipline suitable for everyone (Senatore et al, 2019) Despite her disability, the gymnast has found in gymnastics her strong point, and the practice of this discipline has allowed her to express herself and her potential in a society that too often has focused on what a disabled person is not able to do, rather than on what he is able to do when given opportunities and possibilities.

The results of this study encourage to break down the barriers that society often creates, even if only morally, against disabled people and pushes to deepen the connection between sport and social inclusion.

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