

L'utilizzo della piattaforma barometrica come strumento di indagine: studio del caso

The use of the barometric platform as an investigation tool: case study

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Abstract

The aim of this work is to establish possible correlation between life style exercise, habits and choice of sport and any occurrence of paramorphisms and dysmorphism in children aged 6 to 14 years over a period of 9 months to provide a diagnostic tool for teachers of physical education for 'use for educational purposes. The experimental method is to collect data on static-dynamic through the longitudinal character by baropodometric platform on a sample of five students who attend physiotherapy center. The platform is used to detect incorrect attitudes, measure the deformation generated by the force applied by the foot on the same and any failures during walking with measurements in static and dynamic. The questionnaire will be administered to the sample will allow a first analysis of the data collected on specific parameters. The baropodometric data show that 80% of each student has the body center of gravity in the polygon of support shifted slightly to the right or left, the pressure points of the limbs left and right are not in line with each other, with respect to the body center of gravity of the foot are placed behind for some people or prefixes for other. The load distribution between the forefoot and hind foot indicates an excessive load on the forward foot. Finally the surfaces of the two feet are dissimilar to each other with greater support to the right. After three months we will proceed with a second test baropodometric and a second questionnaire on possible improvements and then compared to the first data collected. After another three months will be checked final and establish the hypothesized correlation.

Lo scopo di questo lavoro è di stabilire una possibile correlazione tra esercizio fisico e lo stile di vita, le abitudini e la scelta dello sport e qualsiasi presenza di paramorfismi e dismorfismi in bambini di età compresa tra 6 e 14 anni in un periodo di 9 mesi per fornire uno strumento diagnostico per gli insegnanti di educazione fisica per l'uso a scopo didattico. Il metodo sperimentale consiste nel raccogliere dati sulla dinamica statica attraverso il piano longitudinale mediante la piattaforma baropodometrica su un campione di cinque studenti che frequentano il centro di fisioterapia. La piattaforma viene utilizzata per rilevare atteggiamenti errati, misurare la deformazione generata dalla forza applicata dal piede sullo stesso e qualsiasi difetto durante il cammino con misure statiche e dinamiche. Il questionario sarà somministrato al campione consentirà una prima analisi dei dati raccolti su parametri specifici. I dati baropodometrici mostrano che l'80% di ogni studente ha il centro di gravità del corpo nel poligono di supporto spostato leggermente a destra o a sinistra, i punti di pressione degli arti a sinistra e a destra non sono in linea l'uno con l'altro, rispetto al centro di gravità del corpo è posizionato dietro per alcune persone o avanti per gli altri. La distribuzione del carico tra l'avampiede e il piede posteriore indica un carico eccessivo sul piede anteriore. Infine le superfici dei due piedi sono dissimili l'una dall'altra con maggiore sostegno a destra. Dopo tre mesi procederemo con un secondo test baropodometrico e un secondo questionario sui possibili miglioramenti e quindi confrontato con i primi dati raccolti. Dopo altri tre mesi verrà controllato il finale e si stabilirà la correlazione ipotizzata.

Keywords

Lifestyle, morphological imbalances, choice of sport

Stile di vita, squilibri morfologici, scelta dello sport,

Introduction¹

The sport is a key element in the lives of all people, it is the medium that allows us to understand the essential values and more meaningful life. The sport is the set of those assets, physical and mental, made in order to improve and maintain in good condition the entire apparatus psycho-physical human, resulting in the development of physical qualities such as quick reflexes, speed, motor skill, agility and strength, and, equally important, moral qualities such as courage, self-denial, self-control, perseverance, respect for opponents and loyalty

It takes on different meanings and may have different aim. In fact, to express a clearer picture is good to make the necessary distinctions between exercise and physical activity. Exercise is a planned and purposeful attempt, at least in part, to improve fitness and health. Includes activities such as brisk walking, cycling, aerobic dance, and also the active hobbies such as gardening and competitive sports. Physical activity, starting from encyclopedic definition, consists of any force exerted by skeletal muscles can determine an increase in energy expenditure, in other words the term “physical activity” refers to all the energy that is burned with the movement.

Physical activity also plays a vital role in improving and maintaining health, and is an effective tool to combat certain diseases by performing a program of adapted physical activity. It consists of an activity program useful for improving the painful symptoms associated with osteoporosis, osteoarthritis of the spine, shoulders and knees.

Extensive studies have shown that for these conditions the Adapted Physical Activity is more effective than traditional physical therapy that will, hopefully, give only transient improvement. Even more effective is to identify incorrect attitudes at an early stage, so do not yet resulted in diseases to correct and prevent deterioration. The goal then will be to ask the guys in development an exercise program tailored to their needs and identify in relation to morphological presenting the sport no longer correct. The aim of this work is to establish possible correlation between life style exercise, habits and choice of sport and any occurrence of paramorphisms and dysmorphism in children aged 6 to 14 years over a period of 9 months to provide a diagnostic tool for teachers of physical education for ‘use for educational purposes.

Expected results are as following. Observe and detect the presence of any changes that have occurred and especially if they have made improvements morphological structure. Develop through physical activity adapted musculature as to prevent any alteration or maintain proper body structure.

1. Method

The method is experimental, it uses the baropodometric platform performing a monitoring of a sample of five boys in longitudinal character for 9 months. The experimental method is to collect data on static-dynamic through the longitudinal character by baropodometric platform on a sample of five students who attend physiotherapy center. The platform is used to detect incorrect attitudes, measure the deformation generated by the force applied by the foot on the same and any failures during walking with measurements in static and dynamic. The questionnaire will be administered to the sample will allow a first analysis of the data collected on specific parameters.

The baropodometric platform is used to detect incorrect attitudes, measure the deformation generated by the force applied by the foot on the same and any faults in the process of walking. In fact, tests will be carried out in static and dynamic.

¹ The manuscript is the result of a work to refer to Author Davide Di Palma for Introduction and Discussion and Conclusions; to Author Salvatore Napolitano for the remaining parts.

The boys aged between 6/14 years, and will be given a questionnaire that will allow a first analysis of the data collected will be a recommended physical activity adapted to the type of problem encountered. After three months, we will proceed with a second baropodometric test and a second questionnaire on possible improvements and then compared to the first data collected. After another three months will be carried out in the checkout.

2. Results

The baropodometric data show that 80% of each student has the body center of gravity in the polygon of support shifted slightly to the right or left, the pressure points of the limbs left and right are not in line with each other, with respect to the body center of gravity of the foot are placed behind for some people or prefixes for other. The load distribution between the forefoot and hind foot indicates an excessive load on the forward foot. Finally the surfaces of the two feet are dissimilar to each other with greater support to the right. After three months we will proceed with a second test baropodometric and a second questionnaire on possible improvements and then compared to the first data collected. After another three months will be checked final and establish the hypothesized correlation

Tables 1:Beforedynamic analysis with baropodometric

| | subject 1 | subject 2 | subject 3 | subject 4 | subject 5 |
|-----------------------------------|-----------|-----------|-----------|-----------|-----------|
| Age | 6 | 8 | 10 | 13 | 14 |
| Height | 1,15 | 1,25 | 1,25 | 1,5 | 1,55 |
| Weight kg | 20 | 24 | 33 | 48 | 55 |
| School physical activity: | no | no | no | si | si |
| Extracurricular physical activity | si | si | si | si | no |
| Days employed | 3 | 3 | 4 | 0 | 0 |
| Weekly hours | 6 | 6 | 10 | 0 | 0 |
| Podalic support: | | | | | |
| In balance | | | | | |
| Out of balance | x | x | x | x | x |
| Center of gravity: | | | | | |
| Centered | | x | x | | |
| Not centered | x | | | x | x |
| Load distribution: | | | | | |
| In the norm | | | | | |
| Out of the norm | x | x | x | x | x |
| Surfaces of the two feet: | | | | | |
| Similar | | | | | |
| Different | x | x | x | x | x |

Table 2: Second dynamic analysis with baropodometric

| Table 2 | subject 1 | subject 2 | subject3 | subject 4 | subject 5 |
|----------------------------|-----------|-----------|----------|-----------|-----------|
| Improvement of posture | si | si | si | si | si |
| Development of muscle mass | no | no | si | no | no |
| Podalicsupport | | | | | |

| | | | | | |
|----------------------------------|---|---|---|---|---|
| In balance | | | x | | |
| Out of balance | x | x | | x | x |
| Center of gravity: | | | | | |
| Centered | x | x | x | x | x |
| Notcentered | | | | | |
| Load distribution: | | | | | |
| In the norm | x | | x | | |
| Out of the norm | | x | | x | x |
| Surfaces of the two feet: | | | | | |
| Similar | | | | | |
| Different | x | x | x | x | x |

Discussion and Conclusion

This work will help the physical education teachers to adapt a motor program personalized for each student. It is desirable to improve posture and imbalances morphological pupils than at the beginning of the work. In the event that the improvements do not arise, the teacher will need to review the teaching strategy that has developed with the help of data collected.

This new type of approach for the creation of new physical education and sport planning according to motor programs customized can also be extended to other rehabilitation centers. The purpose is to provide an analytical tool to support the promotion of physical activity and sport in childhood and monitor the occurrence of some diseases. The realization of the project involves the improvement of the physical condition of the boys examined in order to promote this process, given the results obtained, in schools and sports centers health workers and prevention.

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