

## **KINESITHERAPY TO PREVENT SPINAL PHYSICAL FUNCTIONAL ABNORMALITIES IN PREPUBERTAL**

*Mihai Constantinescu<sup>1</sup>*

<sup>1</sup>*Constantinescu Mihai Physiotherapy cabinet, Romania*

**Key words:** kinesiotherapy, spinal physical functional abnormalities, prepuberty

**Abstract:** This article is based on a study carried out in a more ample research aimed at updating the information available to education, healthcare specialists and parents regarding the occurrence, evolution and management of the spinal physical functional abnormalities in prepubertal children and kinesiotherapy as a means of prevention or recovery.

**Introduction:** Growth is a process of quantitative build-up by which the body weight, mass and dimensions grow. Development is a qualitative process of cell differentiation manifest in by functional changes and qualitative optimisations that mark the refinement, the specialisation and adaptation of the apparatuses and body systems, their complex evolution and coordinated integration as a whole; it is a graduation process that leads to the occurrence of new relationship among segments and parts [3].

Prepuberty is characterised by an accelerated growth in height and weight, being more intense in girls than in boys. As far as height is concerned, acceleration beings at the age of 11 and lasts approximately up to the age of 13, as for weight, it lasts until about the age of 14. This period is unique in humans' growth and development process, and the most important somatic values are higher in girls than in boys [5,6].

The growth and development dynamics in the prepubertal period brings about a set of specific changes, which are not always controlled and hence the occurrence of various posture as well as functional conflicts. The vital organs and functions constantly ripen, the bone system improves its structure. We must note that the thoracic skeleton and the spinal bones do not strengthen in the same rhythm, which leads to the occurrence of growth disorders (lowered shoulder posture, sunken chest, rounded back, lordosis, scoliosis etc.) We can note that these disorders in the development of the bone system not only lead to the

occurrence of posture abnormalities but can also affect the cardiorespiratory function or the nervous system [1,4].

Cordun M. 1999, calls the functional abnormalities deviations, inappropriate postures or attitudes representing disorders of the support and movement function of the body always implying muscle imbalances that will hinder movement. If the said abnormalities are not noticed on time they will turn into structural abnormalities that will lead to degenerative damages, which are fixed functional as well as organically turning into abnormalities. [3] Discovering physical abnormalities in children on time ensures efficient intervention given the plasticity and dynamics of the body at this age [2].

**Material and method:** In the enterprise carried out concerning the sociological study we intended to collect information from three categories of people involved in the children's growth and development process in prepuberty, namely the parents, the sports teachers and the healthcare specialists (consultant, nurses, kinesiotherapists and other categories).

We have drafted two questionnaires featuring two difficulty degrees including questions regarding the abnormalities children face, namely spinal problems, investigation and evaluation methods, known methods on the prevention and maintenance of the morphological and functional status for harmonious growth and development.

The main objectives have been to determine the parents', PE teachers' and healthcare staff's knowledge level regarding the spinal physical functional abnormalities in prepubertal children, the aetiology, their evolution and consequences on their health. Hence we have delivered Questionnaire no.1 to the parents in order to discover their existing knowledge regarding spinal physical functional abnormality, which is a timely problem in prepubertal children. The questionnaire has been drafted according to the methodology with multiple choices, featuring an average degree of difficulty and a set of 14 questions. The distribution area has been large enough; we have reached parents in 5-7 counties: Suceava, Bucharest, Bacău, Iași and Brașov. Moreover, age and occupation have been none of the variables and we suppose that we have managed to reach parents of all social categories. In order to get the statistical data, we have uploaded 118 questionnaires in the database.

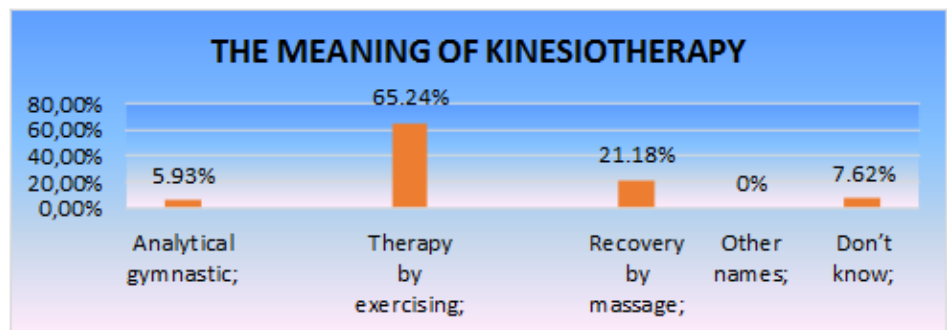


Fig.1. The graphical representation of question 1 in Questionnaire no. 1

According to the results gotten to question 1 of Questionnaire no. 1 delivered to the parents, we can notice that only 65.24% know the meaning of the word kinesiotherapy and as a close option 21.18% associate massage to its meaning.

Concerning their knowledge regarding the main spinal abnormalities, in the graph in fig. 1 the respondents to question 2 reach 60.16%, which is an unsatisfactory result.

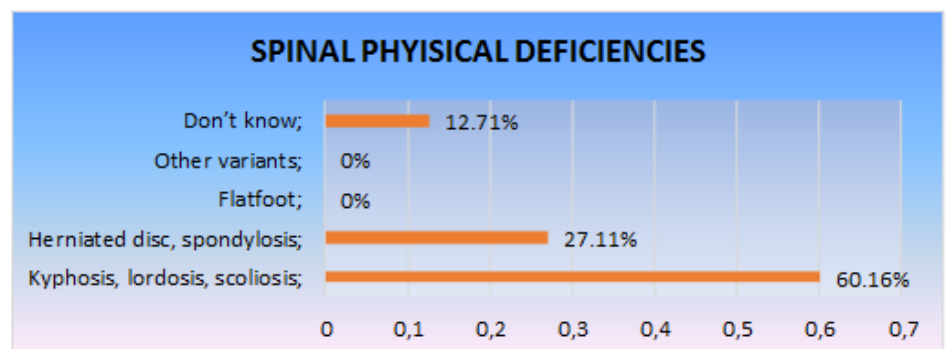


Fig.2. The graphical representation of question 2 in Questionnaire no. 1

In order to support the argument for the suggested programme, we have also interviewed PE and healthcare specialists. We have tried to draft an easily readable multiple-choice questionnaire. We have taken into account that the very same questionnaire has been delivered to specialists in different fields of activity: PE teachers, instructors and coaches, theoreticians in the field of physical culture, kinesiotherapists, nurses and even consultants.

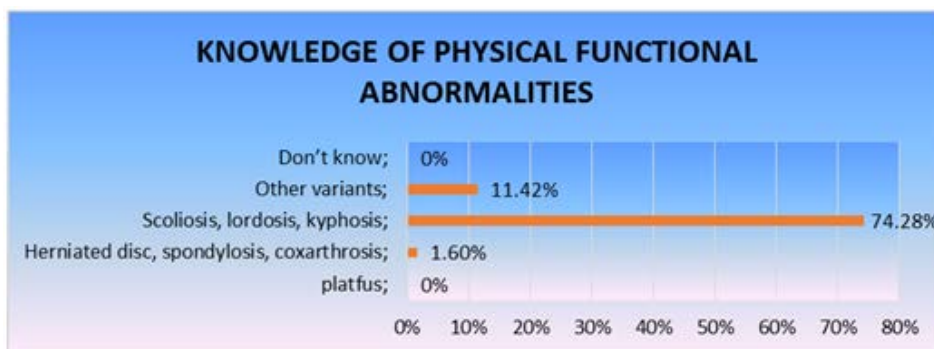


Fig.3. The graphical representation of question 2 in Questionnaire no. 2

As one can notice from the graphical representation of question 2 in questionnaire no. 2, 74.28% of the respondents, i.e. the above-named specialists' answers associate the spinal physical functional abnormalities with: kyphosis, lordosis and scoliosis, which is a positive result given that their identification shall allow an optimal management aimed at prevention and recovery.

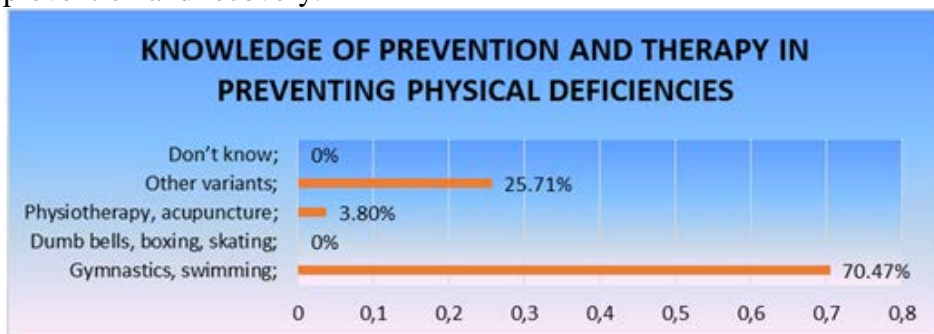


Fig.4 The graphical representation of question 5 in Questionnaire no. 2

Concerning the prophylaxis of the spinal physical functional abnormalities in prepubertal children, gymnastics and swimming are recommended by 70.47%, which is a satisfactory result given that 25.71% of the specialists choose other variants.



Fig.5 The graphical representation of question 6 in Questionnaire no. 2

Kinesiotherapy is identified by 74.28% of the respondents as therapy by movement, 14.28% give other definitions and 10.47 % as recovery by massage.

**Results and discussions:** The results of the questionnaires delivered to parents show the strong need for the implementation of information and training programmes as well as special programmes aimed at managing the spinal physical functional abnormalities. The specialists in the above-listed fields prove to have a high degree of knowledge regarding the spinal physical functional abnormalities, namely 74.28 % as compared to only 65.24% of the respondent parents. By comparing the parents' and the specialists' answers to the question on kinesiotherapy one can note that the latter have knowledge slightly above the average of the parents, i.e. 74.28% as compared to 65.24% of the parents.

**Conclusions:**

- Kinesiotherapy is known and associated with the „therapy by movement” both by the parents and the specialists, which creates a prerequisite for an optimal context for the implementation of preventive programmes on the management of posture abnormalities in prepubertal children;
- the spinal physical functional abnormalities are identified as follows by: kyphosis, lordosis, scoliosis;
- given that a high number of parents, i.e. 40%, have not identified the spinal abnormalities correctly, information programmes need to be implemented in this respect.

**Bibliography.**

1. Badiu C., Ciorbă C., Badiu G. Educație fizică a copiilor și școlarilor (metode și mijloace). Chișinău: Garuda- Art, 1999, p. 8-10;

2. Constantinescu M. The significance of the imaging examination in the recovery process of scoliosis. In: The Annals of the „Ștefan cel Mare” University, Suceava, 2014, p. 23;
3. Cordun M. Postura corporală normală și patologică. București: ANEFS, 1999;
4. Demeter A., Drăgan I. Sport și Sănătate. București: Sport-Turism, 1990, p. 53-57;
5. Firișteanu V.N. Aspecte ale creșterii și maturizării biologice cu influențe asupra activităților fizice și antrenamentelor sportive la băieți și fete. În: Tendințe ecologice în domeniul educației fizice și sportului: Sesiune Științifică Internațională. București: Ed. Bren, 2010, p. 89-92;
6. Moțet D. Kinetoterapia în beneficiul copilului (Corectarea deficiențelor fizice la copii). București: Ed. Semne, 2011.

### **KINETOTERAPIA IN VEDEREA PREVENIRII DEFICIENȚELOR FIZICE FUNCTIONALE ALE COLOANEI VERTEBRALE IN PERIOADA PREPUBERTARA**

*Mihai Constantinescu<sup>1</sup>*

<sup>1</sup>*Cabinet kinetoterapie Constantinescu Mihai, Romania*

**Cuvinte cheie:** kinetoterapie, deficiențe fizice funcționale ale coloanei vertebrale, prepubertate

**Abstract:** Acest articol are la bază un studiu efectuat în cadrul unei cercetări mai ample în vederea actualizării datelor cu privire la cunoștințele specialiștilor din domeniul educației, sănătății și părinților cu privire la apariția, evoluția și gestionarea deficiențelor fizice funcționale ale coloanei vertebrale la copiii de vârstă prepubertară și a kinetoterapiei ca formă profilactică sau de recuperare.