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PART II

DRAMA / CHOREOGRAPHY

1. IMPORTANCE OF PHYSICAL EXERCISE IN LIVING ARRANGEMENTS ARTIST

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Abstract: *Increased occurrence of spine deviation is the result not only of modern technology hazards (for example, sitting in front of the computer for long hours) or lack of physical exercise, but also of specific posture related to the study of a musical instrument. The aim of this paper is the timely warning of children who choose to study a musical instrument about the spine deviations that can occur in time, also to refer them to a specialist and to encourage them to take up exercises meant to tone specific muscle groups. The study was conducted on two groups of students from the department of Musical interpretations, 1st and 2nd year, and two groups of students from the department of Painting and Photography and video, 1st year, at the "George Enescu" Arts University of Iaşi. The school screening method was used with the help of four MA students at the department of Kineto-therapy. The data were tabulated. We recommended that subjects be referred to specialised examinaton by doctors at the Pediatric Orthopedics clinic and have special sets of physical exercises.*
Key words: *musical instrument, diseases of the spine, scoliosis, kyphosis, anamnesis*

1. Introduction

The aim of this paper is to become part of an educational project meant to inform persons studying a musical instrument about the spine deviations that can result from prolonged practice hours. The target public of the educational project consists of middle school and high school students and was initiated by the Faculty of Physical Education and Sports in Iaşi. The conclusions of the present study will be highly relevant for this project, assisting in taking the most appropriate steps for the prevention of such physical conditions at early ages.

Two groups of students from the Faculty of musical interpretation and of the Faculty of Arts (both with "George Enescu" Art Universiyt of Iaşi) were clinically examined in order to identify any spine deviations (the second group acted as a control group). Four MA students at the Department of Kineto-therapy with the Faculty of Physical Education and Sports applied physical screening to the students in the two groups, using the following methods: anamnesis, Adam's forward bend test and the lead line test. The spine deviations considered are scoliosis and kyphosis, which are the most frequently occurring in the case of the students.

The results will be tabulated. The conclusions will be dicussed; we recommended the students to contact the specialist to be indicated the treatment adequate in each case depending on the type of spine deviation identified. The

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present study is concerned with detecting spine curvature disorders at early stages through specific assessment methods (physical examination). We did not use a specialised medical terminology, as we are not specialists in the domain.

1.1. Information input

Instrumental music, with its wonderful harmonies, come as a mixture of the joy of interpretation and long hours of practice, which seem the most pleasant labour for instrument players; this, however, may heavily impact their state of health. The beauty of this activity and the positive emotional state that music creates seldom leaves room for an analysis of the negative impact it may have on performers. Scoliosis is the most frequently occurring spine curvature disorder; others are kyphosis and lordosis, but they are not as frequent. Posture issues, spine curvature disorders and especially scoliosis in the various areas of activity have been long a standing issue for debate.

It is generally known that an instrument player begins training at a very early age, five to six years on average, and training can go on for the entire life span. There are cases when studying an instrument is dropped for various reasons; those who will carry on, however, are motivated by a special gift for music, sometimes they are pressed by parents from early childhood, so an attraction or, on the contrary, revulsion to practicing the instrument forms in time. An earlier study (Ana-Cristina Leșe, *Exercițiul fizic pentru pianiști*), demonstrated that most young people studying an instrument have at least one parent with this inclination and there is a cult for music in the family combined with a natural talent. It is also known from various studies that the phoetus is also influenced by the mother's pursuits during pregnancy and it is possible that by singing or listening to music, the mother can induce this inclination to the child.

Irrespective of the instrument that is studied, the body assumes a posture that is maintained for 5 to 6 hours a day or even more. In the case of most instruments, certain muscle groups are strongly contracted on one side of the body only, while the muscles on the other side of the body are less toned. While playing the violin, for example, for a right-handed musician who handles the bow with his right hand, the muscle groups on the right side of the thorax are contracted, with tension accumulated in the right arm. Meanwhile, the muscles on the left side of the back make a double effort in order to maintain the spine in the correct anatomical posture. If the muscles on the left side are not strong enough to compensate for the activity on the right side, the spine will be gradually de-formed in one of the types of curvature disorders, either scoliosis or kyphosis or some other disfunction. Scoliosis in turn can disrupt other functions of the organism, therefore it should by no means be treated superficially.The human spine is not straight, it has two types of curves (web sources 1):

1.The curve in the sagittal plane, with the convexity oriented towards the front, is called lordosis, the curve in a sagittal plane, with the convexity oriented towards the back, is called kyphosis. In the spine, there are four such curves: the cervical curvature with the convexity towards the front, the thorax curvature with the convexity towards the back, the lombar curvature with the convexity

towards the front, and the sacral coccgygeal curvature with the convexity towards the back.
2. The curve in the frontal plane are less deep. The usual ones are: the cervical curvature, with the convexity oriented towards the left, the thorax curvature with the convexity towards the right, the lombar curvature with the convexity towards the left.

fig.1 img. author Drăgulin, O., web source 2


fig.2 Scoliosis, web source 3

The correct position of the human body is a function realized through the simultaneous action of the components of the motor system coordinated by the central nervous system. In this way, balance and the constant relation between the various segments of the body are maintained. Body posture is the result of several factors:
- heredity;
- the type of neural activity at the level of the cortex;
- the degree of muscular toninig;
- individual concern for establishing and maintaining the motor system in a good shape. (web 4)

2. Aim of the study

The main aim of this paper is to inform persons who study a musical instrument on the spine curvature deviations that can result from this activity. Moreover, we aim at disseminating the message “take care of your spine” to those who have been found to have a curvature deviation problem and possibly their offspring who may decide to study a musical instrument as well.

3. Materials, methodology

In the present study we have focused on two groups of students from the Faculty of musical interpretation, the department Study of an instrument, totalling 78 students, and two groups of students at the Faculty of Arts, the department Painting – 15 students – and Photography and video – 25 students, from the “George Enescu” Arts University of Iaşi. The total 118 students have been clinically examined with a focus on the evaluation of the spine. The groups consisting of students from the Faculty of Arts are the control groups, while the students at the Faculty of musical interpretation are the study group. The activities of the two groups of artists, visual artists and musicians – are conducive to tensed asymmetrical positions of various groups of muscles. As has been mentioned in the Introduction section, students studying a musical instrument practise for long hours from a very early age.

The students at the Faculty of Arts are also involved in professional activities that requrie an atypical body posture, depending on manner and technique. Thus, a painter may have to spend hours in a crouching position, bent or twisted when, for instance, he has to paint a wall. The same is true about photographers who work in a natural environment, they have to "stalk" or watch for hours in order to capture particular aspects of natural life. However, their professional training starts when they are around 17 – 18 and is more permissive in the sense that the body can relax or return to the normal posture for stretches of time, while a musician playing an instrument has to play in time with the other musicians or with the scores.

Four MA students from the Faculty of Physical Education and Sports, the department Kineto-therapy, took part in our experiment. They organized a screening test for spine curvature deviations within the practical courses of Physical Education of the students included in the two groups. The subjects consented to this investigation even if some of them were already aware of their own spine curvature deviations from the time when they were high-school pupils. The methods used to detect spine curvature deviations were:

1. Anamnesis – the method of collecting genetic data about the family and of the data related to general issues caused by spine curvature deviations.
2. Adam's forward bend is a classic test used to identify scoliosis; it consists of asking the patient to bend forward with stretched arms in an attempt at touching the ground. The test reveals possible anatomic anomalies of the spine, for instance the presence of an anatomic hump or a deviation of the spine axis.
3. The lead line test consists of a visual test that reveals whether the spine is vertical. In a patient with scoliosis, for instance, the lead line supported on the apophysis of the cervical vertebra C7 will reach to the left or to the right instead of the median situated between the two gluteus muscles.

Results Identifying existing deviations

Table no 1. Awareness of existing pathology in the 118 subjects

	Number of cases	Percent
The subject was aware of the pathology	**27**	**22.9%**
The subject was not aware of the pathology	**91**	**77.1%**
Total	**118**	**100%**

Table 2. Group no. 1 – students in the department Musical instrumentation – one instrument – 78 subjects

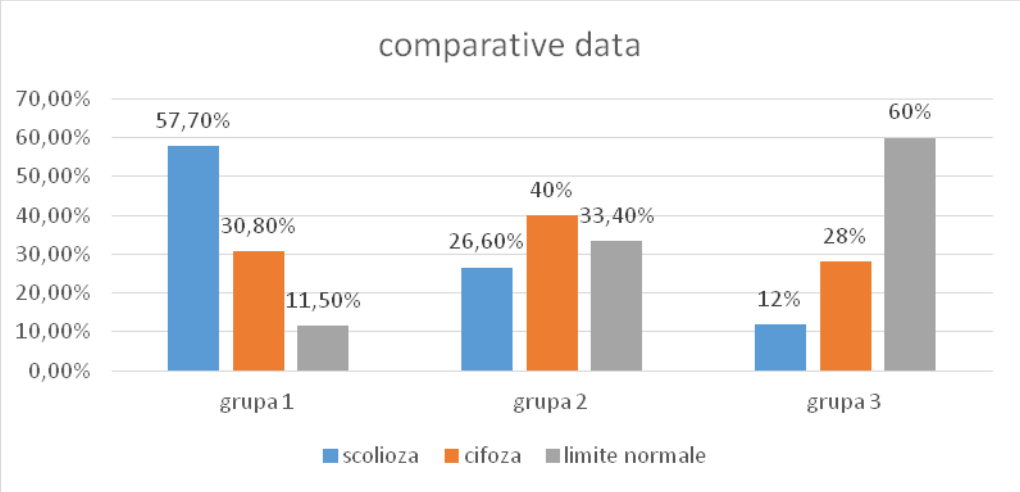
Scoliosis		**Kyphosis**		**Normal posture**	
Number of cases	**Percent**	**Number of cases**	**Percent**	**Number of cases**	**Percent Procent**
45	**57.7%**	**24**	**30.8%**	**9**	**11.5%**

Table 3. Group no. 2 – students in the department Visual arts – painting – 15 subjects

Scoliosis		Kyphosis		Normal posture	
Number of cases	Percent	Number of cases	Percent	Number of cases	Percent
4	26.6%	6	40%	5	33.4%

Table 4. Group no. 3 – students in the department Photography and video – 25 subjects

Scoliosis		Kyphosis		Normal posture	
Number of cases	Percent	Number of cases	Percent	Number of cases	Percent
3	12%	7	28%	15	60%



Grupa = group
Scoplioza = scoliosis
Cifoza = Kyphosis
Limite normala = normal posture

4. Conclusions

- 89 subjects were identified with various spine deviations.
- Of the 118 subjects only 27 (22.9%) were aware of their spine deviations. Eight of them have a family history of one or both parents with spine axis deviations, while the rest – 19 subjects – were identified at an early age, between 10 – 14 years old and were already undergoing recovery physiotherapy recommended by doctors.
- Most cases of scoliosis were found among the subjects in group 1 of musical instrument players (57.7%), while the smallest number of cases were among the subjects in group 3 – students in Photography and video.
- Most cases of kyphosis were identified among the subjects in group no 2 of students in Painting – 6 out of 15 (40%); the percent is not relevant, however, on account of the small number of subjects.
- Most cases of normal posture were identified among the subjects in group no 3 – students in Photography and video.

- The important conclusion to draw is that in the subjects with a certain degree of muscle force acquired through systematic physical exercises no spine deviations were identified.

5. Recommendations

- The subjects identified with spine deviations were referred to a specialist for detailed examination and recommendations for therapy.
- The information obtained from this project was directed towards the "Octav Băncilă" Art Highschool to notifiy the pupils and parents for prevention.
- The child must be educated from an early age to maintain a correct posture while sitting at its desk, playing the instrument, during meals. When not carries on the back, the backpack or schoolbag should be carried alternatively in both hands.
- Physical exercises should be a daily routine to tone the back muscles as well as the muscles in general.
- In the event scoliosis develops, practising games is highly recommended (such as basket ball, volleyball, badminton) to encourage the use of the arm contrary to the spine deviation.

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