

## **ATTITUDES OF THE PARENTS TOWARDS PREVENTING THE CURVATURE OF THE SPINE IN THE CHILDREN**

*(Preliminary communication)*

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### **Abstract**

*The purpose of the study is to examine the attitudes of the parents towards the preventive examination for poor posture and curvature of the spine of their children. 38 parents of children aged 7 - 11 were surveyed. The survey was conducted in P. R. Slaveykov Primary School, city of Varna. The survey conducted with parents of children aged 7- 11 shows that almost all parents and their children visit at least once a year the general practitioners for preventive examinations but, however, during these examinations the posture and vertebral column are not subject to assessment. Larger part of the parents (82%) is not informed of the nature and consequences of the spinal deformities. If, however, it is necessary to make a preventive examination for curvature of the spine 89% of the parents prefer to use the services of a specialist - orthopaedist or physiotherapist - rather than those provided by the general practitioner or school doctor. That is why measures should be taken to clarify the delegation of duties to the medical professionals on the registration, prevention, treatment and information about the nature and consequences of this recurring condition in the school age children.*

**Keywords:** *childhood and adolescence, poor posture, preventive examinations, Questionnaire, school doctor, school doctor, school health care*

### **INTRODUCTION**

The problem of the early detection and limiting the development of the poor posture and spinal deformities is up-to-date, since it refers to the period of active growth of the human body - i.e. the childhood and adolescence. After the introduction of the health reform in Bulgaria several issues associated with the screening, prevention and treatment of the curvature of the spine in the children have been raised.

The correct body posture is related to the good functional status of both the organs of the movement and other vital organs and systems. The correct body posture should be considered as the position of the individual movement segments, which leads to minimum stress on the joints (Dimitrova (Димитрова), 2006, Kendall Peterson F, McCreary Kendall E, Provance Geise P, McIntyre R, Romani WA: Muscles 2005). Each static position which increases the stress on the joints should be considered as a poor posture (postural deformity) (Shumway-Cook, A., Woollacott, M. 2001). The overloading resulting from chronic postural deformity may lead to wear of the joint surfaces and osteophytosis (Попов (Попов), 2009). The poor body posture is

characterized by functional deviations from the normal posture without structural changes in the vertebral column and without restrictions in the active and passive movements (Yordanova (Йорданова), 2010). The poor body posture and spinal deformity impair the respiration and blood circulation and hinder the performance of the normal functions of the heart, lungs, stomach, liver and spleen (Griegel-Morris P, 1992; Szeto GP, 2002; Prashar A, 2012; Zeller M, 1982).

The problem of the early detection and limiting the development of the poor posture is up-to-date, since it refers to the period of active growth of the human body - i.e. the childhood and adolescence (Chow DH, 2006; Mahaudens P, 2005). It is a medical and socio-economic problem due to the relatively high frequency of occurrence of spinal deformities in the children and adolescents. The correct sitting and standing posture, gait and activities of the everyday life are formed in the period of active growth of the human body (in the age from 3 to 13), since the cartilage tissue in the vertebrae is not completely replaced by bone tissue (Sokolov (Соколов), 1991).

The poor body posture and curvature of the spine

develop more easily in children with insufficient physical development who have a weak muscle tone and who have suffered from infectious diseases. (Brettschneider, 2006; Graf C., 2006; Graf, 2007; Opper, E. Worth, A& Bös, K., 2005).

The parents should not forget that curvature of the spine may occur in physically healthy children who have been placed under the adverse effect of some factors from the external environment for a long period of time. To prevent the late and serious consequences resulting from the curvature of the spine the children and students must visit their general practitioner for preventive examination at least once a year. The preventive examination should be made as early as possible, especially in families which have a family history and where one of the parents has suffered from such a disease (Filkova (Филкова), 2013).

Before the introduction of the health reform in Bulgaria the preventive examinations of the students were made by the school doctors. Bulgaria is one of the first countries in Europe with oldest traditions in the school health care. There are about 3,000 health offices in the country where activities on prevention and promotion of the children and student health are carried out by physician or nurse. With the launch of the health reform the children health care is entrusted to the general practitioners - they make the preventive examinations and immunisations. Meanwhile, the medical professionals in the children and school health offices are engaged with the medical surveillance, health education, creation of health habits, etc., as required by Art.120, para.1 of the Health Act (Health Act (Закон за здравето), 2008). Thus the main activities on the health prevention and promotion and medical service of the children are differentiated by law between the general practitioners and medical professionals in the children and school health offices (Filkova & Hristov(Филкова & Христов), 2013). However, the development of this new children health care system causes some problems, which are:

- Lack of connection between the medical professionals in the school health offices and the general practitioners (GPs). In the larger schools the children are registered with a large number of GPs (30-40) which further complicates this contact. Therefore, individual measures aimed at the students with chronic diseases cannot be effectively applied;

- Often the performance of preventive examinations of the children by the GPs is just formal, as the timetable for making these examinations is not in line with the requirements for collection of information by the medical professionals in the schools and children's facilities;

- The required connection and relationships between the medical professionals in the school and children's health care offices, GPs and the children parents are not established.

There is still a serious problem with the professional identity and the role played by the medical professionals in school in view of the expectations on the part of the parents. In many cases the parents expect from these medical professionals to make preventive examinations and immunisations, to issue medical notes and to treat certain medical symptoms. The reasons therefor are both the lack of awareness of the parents, and, to a certain extent, their frustration with the operating health reform system aimed at the children health care (Opinion of the Economic and Social Council on the bill amending and supplementing the Health Act (Health Act (Закон за здравето), 2008).

In some European countries the school medical professionals (physicians or nurses) make preventive examinations and assessment of the children's health status. The role of the GPs in this respect is reduced to the minimum (e.g. only one full medical examination is required before the beginning of the school year).

The blurring of the lines of responsibility and the lack of connection between the school professionals and general practitioners in respect of the preventive examinations and in particular the implementation of prophylaxis for prevention or early diagnosis of the curvature of the spine in our country is partly compensated by the specialised municipal prevention programmes introduced in the recent years. They are subject to targeted funding from the budget of the relevant municipality.

In 2007, the municipal programme „Good Aesthetic Appearance and Comfort through Prevention and Treatment of the Curvature of the Spine“ was launched in the city of Varna. This is a rescue aid aimed at the prevention and rehabilitation of children with curvature of the spine and deformities of the chest which is implemented on an annual basis until the end of 2014. Such programmes have been introduced in several large municipalities as well. Unfortunately, the smaller municipalities are unable to introduce the programmes mainly due to the lack of opportunity for targeted funding. On the other hand, the programmes which are currently implemented are aimed at a limited number of students. The conclusion is that the individual municipal programmes are not reliable as regards to the compensation of the insufficiency or complete lack of adequate prevention of the curvature of the spine among the students.

The purpose of this study is to examine the attitudes of the parents towards the preventive examinations for poor posture and curvature of the spine of their children. The tasks that should be performed are to examine the parents' awareness of this problem and to take into account their commitment in connection with the active search for opportunities to implement prevention (examinations in the general practitioner's office, consultations with professionals - orthopaedist or physiotherapist, involvement in municipal programmes, etc.).

## METHODS

The following methods were used in the study: direct anonymous survey and secondary analysis of the data taken from municipal programme „Good Aesthetic Appearance and Comfort through Prevention and Treatment of the Curvature of the Spine“. 38 parents of children aged 7 - 11 were surveyed. The survey was conducted in P. R. Slaveykov Primary School, city of Varna. The data were processed by statistical and graphical analysis.

## RESULTS AND DISCUSSION

The results of the survey show the attitude of the parents towards the preventive visits at the general practitioner (Table 1). The largest part of the parents - 47% - visit together with their children the general practitioner for the purpose of preventive examination at least once a year, followed by 40 % of the parents who visit together with their children the general practitioner for the same purpose more often - two or three times a year. 13% of the surveyed parents bring their children to the general practitioner's office for the purpose of preventive examination every month.

The results of the study show clearly that the health records of the children do not contain the results of the preventive examination of the vertebral column made by the general practitioner.

It is deeply concerning that only a small part of the parents (18%) are aware of the nature of the curvature of the spine. The other 82% of the parents need more campaigns to raise awareness and to identify the conditions and factors leading to curvature of the spine. This result gives reason to state that it is necessary to plan educational sessions for the parents. Such sessions, however, have not been conducted or, if conducted, they were usually in the form of a single lecture read by the school professionals or campaign information about the implementation of the above described municipal programme. It is obvious that neither of the two methods may have sustainable effect.

The responses to the question „What are the preventive measures that you plan to take?“ show that

only a small part of the respondents will visit together with their children the general practitioner for the purpose of preventive examination. The majority of the parents prefer to trust to the professionals - orthopaedist or physiotherapist (Table 2).

61% of parents prefer to get in contact with orthopaedist as regards to the preventive examination. The other respondents prefer to use the services of a physiotherapist for this purpose.

The distribution of the responses to this question unambiguously shows the mistrust of the parents to the persons directly involved in the prevention of the students - general practitioners and school professionals. This mistrust is most likely related to the personal experience of the parents. Those of them who bring their children to the GPs office for preventive examination state that the general practitioner often fails to pay attention to the child's posture or he does this only at the explicit request of the parent.

The introduction of the municipal programme „Good Aesthetic Appearance and Comfort through Prevention and Treatment of the Curvature of the Spine“ which is aimed at the children in the children's facilities and students from 1<sup>st</sup> to 8<sup>th</sup> grade may be considered as a natural result. The annual average number of children covered by the programme is 1,000. The statistics do not differ from the average one for the country - 15-25% of the children aged 7-14 have incorrect body build and posture and suffer from lateral curvature, anterior curvature and deformities of the chest. Upon completion of the preventive examinations by the professionals from the Medical Centre for Rehabilitation and Sports Medicine (MCRSM) the following curative measures are taken:

- Incorrect posture and I degree curvature of the spine - treatment in the school is conducted by organising groups dealing with exercise therapy and remedial gymnastics;
- II to IV degree curvature of the spine - consultation with orthopaedist is made and training sessions in the hall intended for kinesitherapy of MCRSM are organised through preparation of an

*Table 1. Results of the preventive visits at the general practitioner*

<i>Visits</i>	<i>Percentages</i>
Monthly	13
Two or three times a year	40
Once a year	47

*Table 2. Distribution of the responses for selection of specialist given by the parents*

<i>Preventive examination</i>	<i>Percentages</i>
Consultation with general practitioner	11
Consultation with orthopaedist or physiotherapist	89

individual programme for appropriate movement, hygiene and dietary regimen.

Despite the established good practice, it is obvious that the application of this principle does not allow for all students from all schools on the territory of the city of Varna to be covered. It is therefore more appropriate to perform annually, at regular intervals and everywhere the activities laid down in the municipal programme. This means that clear obligations of the professionals will be imposed in several directions:

1. Who is responsible for making preventive examinations of all students?

2. Where the children with curvature of the spine should be directed?

3. What are the preventive measures that should be taken in respect of the prevention of spinal deformities in the following directions:

- aimed at the children (for example): information and demonstrative activities, remedial gymnastics in the classes in school

- aimed at the parents - educational and information activities.

We believe that the preventive examinations for curvature of the spine should be made in the schools or by the school doctors (this responsibility should be assigned to them) or in case of presence only of a nurse the appropriate professionals - orthopaedists or physiotherapists - should be attracted for making the examinations. In case of any deformity there is a clear algorithm for direction and follow up which should be brought to the knowledge of the children and their parents. The demonstrative, information and educational activities may be divided between the medical professionals in the schools, teachers in physical education and sport and the other professionals (orthopaedists and physiotherapists). These activities should be clearly specified - classes for targeted consultation and training for the children and their parents should be determined.

## CONCLUSION

The curvature of the spine is widespread among the adolescents and is associated primarily with the learning process. The early detection, correct diagnosis, adequate treatment and prevention and the appropriate active movement regimen can prevent the adverse effects of these conditions and ensure the proper functioning of the internal organs and systems. The awareness of the parents is still insufficient, the preventive examinations of the students are not made on a regular basis and there is no clear algorithm of the behaviour in the diagnosis of the curvature of the spine. The campaign activities on the implementation of prevention projects and programmes are insufficient and in general are unable to cover and treat the problem. That is why measures should be taken, including legislative ones, to clarify the delegation of duties to the medical professionals on the prevention, treatment and information about the nature and consequences of this recurring condition in the

school age children.

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