

THE IMPORTANCE OF SCREENING IN THE EVALUATION OF FAULTY POSTURE IN CHILDREN

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Abstract

The aim of the following work is to evaluate faulty posture rate among kindergarten children. The following article describes the objective and the character of the promotional and prophylactic program conducted by the Wrocław City Council (Urząd Miasta Wrocławia) concerning the "Keep straight" ("Trzymaj się prosto") campaign. The program includes youth between age of seven and seventeen in whom slight symptoms of faulty posture, concerning lower limbs and the spine, were revealed during examination. The only prophylactic activity assumed by the "Keep it straight" campaign are corrective exercises in gymnasium and swimming pool. The screening of the children and youth also allows introduction of diagnostics and recognition of permanent faults and direction of the patients to specialist treatment in orthopedic and rehabilitation clinics.

The screening was conducted on the verge of October and November 2007. A physical posture examination method was used to evaluate the faults that appeared. The children from five of Wrocław's kindergartens were examined. The following work presents the symptomatology of the most frequent faults and highlights the necessity of conducting prophylactic activity at a very young age. The faulty posture is a serious diagnostic and therapeutic problem among young children and can be a source of severe health problems in their future.

373 children were examined. Faulty posture was revealed among 295 what represents 79,08% of the patients; 78 were described as healthy (20,92%). There were 160 boys (80,8%) and 135 girls (77,14%) in the group with faulty posture. There were 38 (19,2%) boys without faulty posture and 40 (22,86%) girls in the same group.

Key words: body posture, program, prophylaxis

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Introduction

The faulty posture includes permanent alterations of the skeleton, errors in keeping posture, anomalies in body shaping. Faulty posture is a divergence from the commonly assumed characteristics of posture concerning certain age, gender and the type of silhouette. Simple faults of posture can also be described as errors of posture. Faulty posture is also the state of overloading or degradation of the posture-creating structures which is usually a consequence of disproportions during the development of the body. It can also be a result of genetic disturbance or trauma.

The errors of posture are singular deviations from proper posture which do not change the shape of the spine. Other deviations are usually followed by the misshaping of the spine included into faulty posture [1].

The proper posture is described by the following characteristics: head situated superiorly to the thorax, hips and feet or placed a little anteriorly, thorax prominent to the front, abdomen slightly retracted or flat, back slightly bent, scapulas do not outstand the buttock line, hands and legs are properly shaped, feet prominent [2]. The most common faults of posture among children and youth are following:

curvatures in the lateral and peroneal plane of the spine, knee faults with the advantage of valgity, platypodia and planovalgus feet [3].

Defining a proper posture has been a scientific and practical problem for many years. Despite the commonly accepted patterns it is often very difficult to define and qualify a posture as proper or faulty, especially when the deviations are very slight and hard to observe. The children in the kindergarten period are extremely lively (the somatic type) which is the main factor that influences their posture. The curves of the spine are already shaped but not yet stable.

The growing number of faulty posture cases is a serious social issue. The proper posture, apart from esthetical function, has a big influence on health [4]. The occurrence of faulty posture can be a cause of various health contraindications. It often influences the choice of the future profession. It has an important role in shaping the quality of life and work [5]. The occurrence of faulty posture among children and teenagers is a social problem. Many factors of pathogenesis and difficulties with revealing its symptoms are highlighted [6]. The pathogenesis of postural anomalies includes, among others, factors connected with environmental pollution [7]. The reports however, highlight a vivid increase of faulty posture cases and degradation of the bones (leading to spinal deviations) among children.

The aim of the article

The aim of the following work is to evaluate the occurrence of faulty posture among children and to summarize the prophylactic effects of the "Keep straight" campaign conducted by the Centre of Faulty Posture Correction of the Wrocław City Council (Centrum Korekcji Wad Postawy Urzędu Miasta Wrocław).

The resources and methods

There were 373 children taken into examination, 198 boys and 175 girls. Faulty posture was revealed among 295 which represents 79,08% of the patients; 78 were described as healthy (20,92%). There were 160 boys (80,8%) and 135 girls (77,14%) in the group with faulty posture. There were 38 (19,2%) boys without faulty posture and 40 (22,86%) girls in the same group.

The most frequent faults revealed were following: planovalgus foot among 234 children, which resulted as 62,74%; knee valgity among 54 children – 14,47%, sinistral lumbar scoliosis among 98 children – 26,27%, dextral lumbar scoliosis among 54 children – 14,47%, deepened thoracical kyfosis (the round back) among 16 children – 4,29%.

The next criterion of evaluation was the gender. Among 198 boys the following faults were revealed: planovalgus feet among 32 patients – (66,66%), knee valgity among 28 patients – (14,14%), sinistral lumbar scoliosis among 46 patients – (23,33%), dextral lumbar scoliosis among 30 patients – (15,15%), the round back among 9 patients – (4,54%), no faults among 38 – (19,19%). Among 175 children the following faults were revealed: planovalgus feet among 102 patients – (58,23%), knee valgity among 26 – (14,86%), sinistral lumbar scoliosis among 52 patients – (29,71%), dextral lumbar scoliosis among 24 patients – (13,71%), the round back among 7 patients – (4%), no fault among 40 patients – (22,86%).

The occurrence of platypodia, in accordance to the age, was taken into evaluation. This disorder was revealed among: four-year-old boys – 30 (83,33%) and girls 32 (61,53%), at five-year-old boys – 38 (55,88%) and girls – 27 (60%). In the group of six-year-olds there were 36 (63,15%) boys and 24 (55,81%) girls.

Knee valgity was revealed among: four-year-old boys – 6 (16,66%) and girls – 13 (25%), five-year-old boys – 7 (10,29%) and girls – 3 (6,66%), six-year-old boys – 5 (8,77%) and girls – 5 (11,62%)

Sinistral lumbar scoliosis was revealed among: four-year-olds-boys 6 (16,66%), girls 15 (28,84%); five-year-olds – boys – 13 (19,11%), girls – 14 (31,11%); six-year-olds – boys 16 (28,07%), girls – 16 (37,20%).

Dextral lumbar scoliosis was revealed among: four-year-olds – boys 6 (16,66%), girls 5 (9,61%); five-year-olds – boys – 11 (16,17%), girls – 7 (15,55%); six-year-olds – boys – 13 (22,8%), girls – 10 (23,25%).

The round back occurred in 8,3% of four-year-old boys and 6,7% of five-year-old girls.

The research also revealed that 34% suffered from two or more posture faults. The most numerous group among boys with two faults are four-year-olds – 33,3% and with three faults three-year-olds – 13,5%. The most girls with two faults are six-year-olds – 37,2% and with three faults – four-year-olds 7,7%.

Discussion

The progress of civilization and the present lifestyle causes a systematic increase in number of faulty posture cases. The big number of posture faults in kindergarten children is especially disturbing. Various authors evaluate the anomalies of faulty pasture among people with unfinished bone growth to be about 20-40% [9,10]. However it is necessary to highlight that most of the faults are not permanent which presents the importance of early prophylactic activity.

The results of the research showed that the most frequent faults of posture were: planovalgus foot in 134 children which was 62,74%; knee valgity in 54 children – 14,47%; sinistral lumbar scoliosis in 54 children – 14,74%; deepened

thoracic kyfosis (the round back) in 16 children – 4,29%. These results slightly differ from the results presented in resource material. The difference may be a result of the methodology of faulty posture examination. What is more the most research concern children over seven-years-old and the main spinal curves were examined [11,12]. Many reports pay particular attention to the spinal curves. The results appear to be convergent [13]. Various publications suggest a more thorough evaluation of children's faults in posture because there is a threat of coexisting pathological states with inflammatory or neoplastic background. In unsure cases it is necessary to widen the diagnostics with radiogram aimed at both planes, computer tomography and magnetic resonance [14]. Some authors point that inflammatory and neoplastic diseases can cause faulty posture especially disturbances of the spine axis [15].

The evaluation of faulty posture among kindergarten children causes many difficulties. The physiological spinal curves do not need to be completely developed at this age. However this period presents a vivid tendency to faulty posture occurrence [16].

Conduction of health education among children and parents included in the "Keep it straight" campaign organized by the Centre of Faulty Posture Correction of the Wrocław City Council is an important and successful element of faulty posture prophylaxis and therapy among children around Wrocław. Screening research in early age allows to introduce correctional activity in the time when the faults are not yet permanent.

Correctional exercises is a particular form of exercise which is the most effective in treatment of the earliest forms of faulty posture [17,18].

The use of group correctional exercise allows to return a relative mobile efficiency, improves

the life comfort and corrects slight faults of posture. It also appears this complex activity allows the campaign participants to make a proper decision concerning a healthy lifestyle. It can also be assumed that early faulty posture diagnostics, in a form of simple screening, is an important element of the movement organ disorders prophylaxis [19,20].

Conclusion:

- The planovalgus feet is the most frequent disorder among kindergarten children.
- In the group of 3-6 years-old children, there is a larger number of boys with faulty posture.
- There was a high number of children suffering from two or more posture disorders in the examined group.
- Most of the faults revealed during the research were of a functional character, without permanent structural lesions.

Resumo

La celo de la laboro estas pritakso de malbonaj staturoj ĉe en la antaŭlerneja aĝo. En la artikolo oni priskribis la celon kaj karakteron de propaga kaj profilaktika agadoj en la kadro de Urbestra Ofico de la urbo Wrocław, kiu rilatas al kampanjo „Gardu sin rekte”. En la programo estas infanoj kaj junuloj de komunumo Wrocław en la aĝo de la sep ĝis deksep jaroj, ĉe kiuj laŭ faritaj profilaktikaj ekzamenoj oni konstatis malgrandaj siluetajn disordojn, kiuj rilatantis al vertebraro kaj gamboj. Enkadre de la programo “Gardu sin rekte” oni gvidas profilaktikaj agadoj farante korektigantan grupan gimnastikon en la gimnastikasalono aŭ en naĝejo.

Laŭ faritaj skringaj ekzamenoj de infanoj kaj junuloj ebligas fari enkondukan diagnozadon de firmigajn disordojn proponante plie specializacia kuracado en ortopedia kaj rehabilitada poliklinikoj. La ekzamenoj oni faris je breĉo de oktobro kaj novembro 2007 j. Oni faris fizikan ekzamenon laŭ silueta metodo por pritaksi staturajn disordojn. Oni ekzamenis infanoj en kvin vrocaviaj infanvartejoj. En la artikolo oni prezentis simptomoj de la plej oftaj siluetajn disordojn kaj substrekis necescon de profilaktikaj agadoj jam de la plej junaj jaroj.

La siluetajn disordojn ĉe malgrandaj infanoj fariĝas signifan diagnozan kaj terapian problemon, kiuj en estonteco povas esti kaŭzo de severaj problemoj kun la sano.

Oni ekzamenigis 373 infanojn. Oni konstatis ĉe 295 siluetajn disordojn, kio estis 79,08% de ekzamenintoj; ĉe 78 (20,92%) infanoj ne estis siluetajn disordojn. En la grupo kun siluetajn disordoj estis 160 knaboj (54,24%) kaj 135 knabinoj (45,76%). En la grupo de sanaj infanoj estis 38 knaboj (19,2%) kaj 40 knabinoj (22,86%).

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