



FAMILY ENVIRONMENT AS AN IMPORTANT FACTOR FOR THE PHYSICAL DEVELOPMENT OF PRESCHOOL CHILDREN

Ruska Paskaleva, Violeta Ivanova, Vanya Pavlova, Nora Taneva - Georgieva
Department of Kinesiotherapy, Faculty of Medicine, Trakia University - Stara Zagora, Bulgaria.

SUMMARY

Daily locomotor activity and proper nutrition influence the normal development of muscles, joints and system of children. They provide beneficial stimuli for the growing skeleton and postural control.

The aim of the present study was to investigate and analyse the lifestyle and locomotor habits in the family by means of a survey and thorough examination of children.

Material/Methods: Within the framework of the screening studies on the physical development of preschool children conducted in the Stara Zagora municipality, a survey with the major part of the parents of children with postural abnormalities was also carried out. Of the 773 parents who participated in the survey, 77.7% were women. The families in the age group of 35 to 45 years (49.1%) and 25 to 35 years (43.7%) were predominant.

Results: The motivation for sport of the surveyed parents is an important part of the survey. The main incentive for 82.8% of families engaged in sports was to maintain and improve their health. Regarding the frequency of sports activities, the largest group (36.3%) declared engagement in such activities 2-3 times a week. Healthy nutrition is associated with proper musculoskeletal development

Keywords: family, locomotor activity, sport, proper nutrition, children, preschool age,

INTRODUCTION

Parents play an extremely important role in relation to the lifestyle and musculoskeletal and nervous system health in childhood.

During the last years, the problems associated health and physical development of the young generation have become more severe. This issue is a concern for physicians, psychologists, instructors and parents. This is not surprising the background of a rapid health and physical fitness deterioration of students, as adolescents are particularly vulnerable to the next age crisis exacerbation. Due to immobilisation and prolonged use of electronic devices, adolescents are generally characterised by low physical activity and predominantly low daily learning activity. For this reason, 85% of adolescents have at least one of the following types of abnormalities: scoliosis, incorrect posture, reduced muscle tone, obesity, diabetes, neurosis, etc., which can lead to serious diseases of the locomotor system. Parents play an extremely important role in relation to the lifestyle and musculoskeletal and nervous system health in childhood.

Parental awareness is essential for the prevention of postural problems. The results from the study of Filkova [1] on parental knowledge of the optimum locomotor activity norms in preschool children show that 210 (70%) of the respondents were not aware of them. The remaining 90 (30%) were informed. Parents determine the magnitude of stress experienced by their children by personal judgment - whether their child appeared tired or has aggressive behaviour. It is important that parents provide their children with sufficient locomotor activity and regular sports or outdoor games, since inactivity caused by the modern lifestyle is among the risk factors for spinal deformities and incorrect posture, affecting the quality of life in adulthood [2].

The study of Brzek et al. [3] is interesting because it is focused on factors influencing the level of physical activity in girls with scoliosis, seeking answers to whether

scoliosis itself is a predictor for locomotor inactivity, which, according to, is dangerous to health. The main studied group comprises 82 young girls with an average Cobb angle of 17.37 ± 4.05 , and the control group included 138 young healthy girls of the same age. The girls were not diagnosed with idiopathic adolescent scoliosis, and their body posture in the sagittal, frontal and transverse planes did not deviate from the norms. In the studied groups of girls, a moderate level of physical activity was predominant ($p > 0.05$). Among the evaluated factors, only BMI, diet and the use of electronic devices influenced physical activity in both groups. Place of residence, age, and physical activity of parents were not relevant. The most important aspect of the lifestyle of teenage girls was physical activity, leisure time and diet, as well as body weight. Overweight and obesity in children, often associated with insufficient physical activity, result in underuse of the locomotor system; at the same time, excessive fat deposition overloads the skeletal system, which is a prerequisite for the development of postural defects [4]. Informal education from the family also has an impact on children's social and emotional abilities. [5] Early identification of negative factors affecting child development is achieved through timely screening [6]. Gender is the most influential factor. Specific strategies, tailored to gender and age, need to be developed to improve physical activity among adolescents. [7]

MATERIAL AND METHODS

Within the framework of the screening studies on

the physical development of preschool children conducted in the Stara Zagora municipality, a survey with the parents of children with postural abnormalities and overweight was also carried out to evaluate locomotor activity and eating habits. Seven hundred and seventy-three parents participated in the study, 77.7% of them women. Families in the age group of 35 to 45 years (49.1%) and 25-35 years (43.7%) predominated. More than half of the respondents had higher (60.2%) and secondary (37.1%) education. Almost all lived in the big city – 99.4% and were employed (90.6%). The indicated data allow us that the information obtained is reliable, since women in the family mainly determine the family lifestyle, almost all are at an active age, work and live in the big city with all resulting positive and negative aspects.

RESULTS AND DISCUSSION

Parents organise the daily routine of children, determine the eating style, the norms of behaviour, the choice of sports and outdoor locomotor activities. Thus, they build the locomotor habits of children, which the latter follow throughout their lives. Part of the questions in the survey were related to sports in the family. According to the results, the majority of families associated sports activities with walks in the fresh air, but a significant part also practiced sports at home (Fig. 1). Regarding sports activities frequency, the largest group of 36.3% declared activities 2-3 times a week. However, one third of families found no time for sports activities more often than 2-3 times a month (Fig. 2).

Fig. 1. Favourite place for sports.

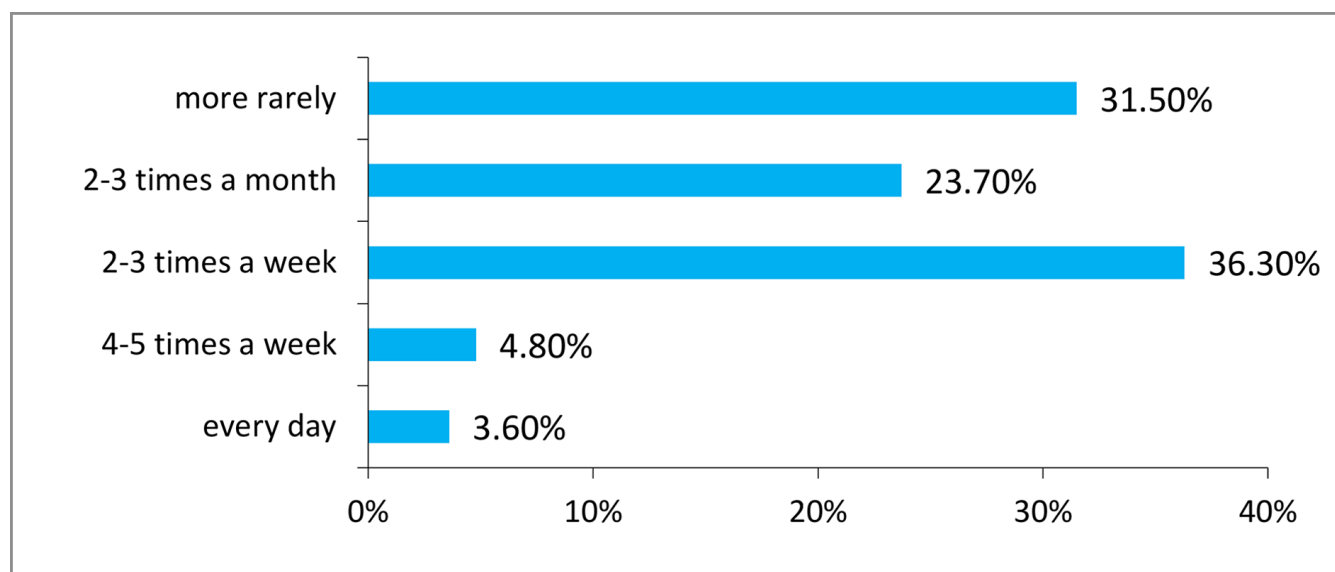
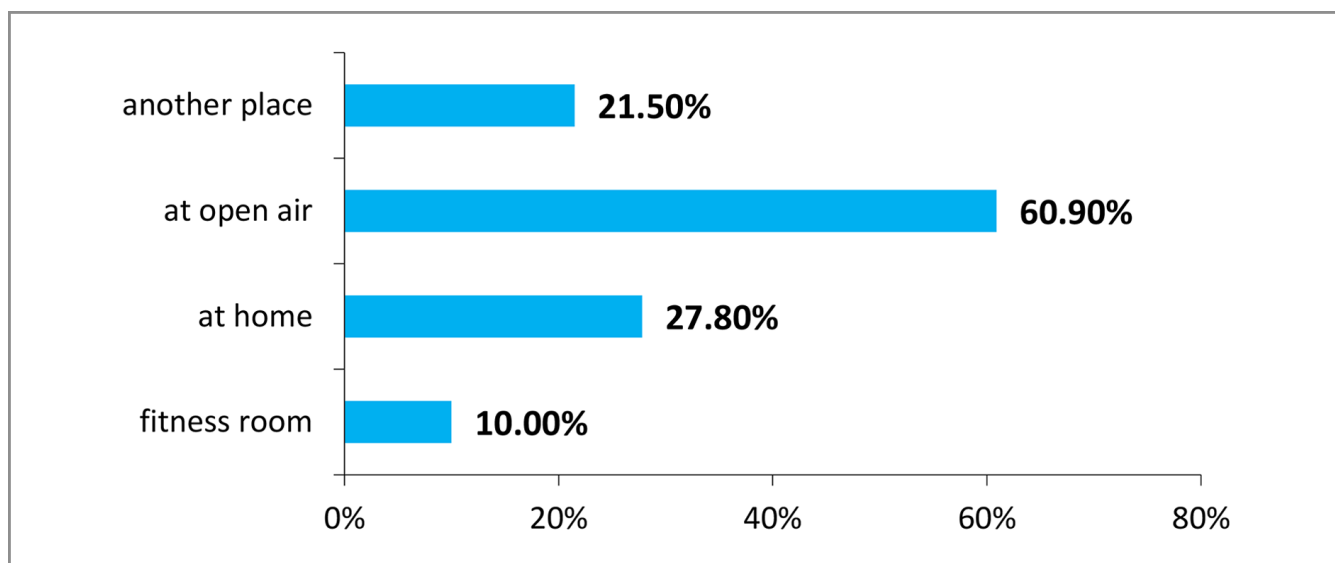


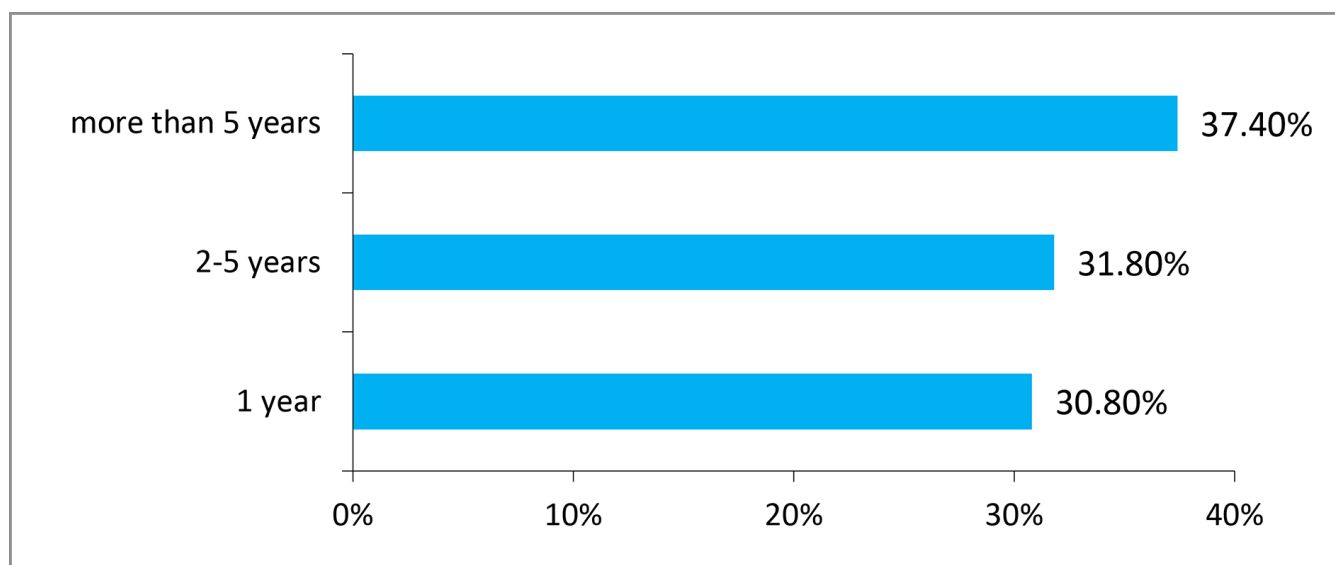
Fig. 2. Frequency of sports activities.



Physical activity influences the emergence of scoliosis from the earliest years. One study reported that babies able to stand up unsupported at 18 months of age were 66% less likely to develop scoliosis by 15 years of age ($P=0.030$) compared with those who could not. Children the most intense physical activity at 10 years of age were 53% less likely to develop scoliosis ($P=0.027$). Also, children who had moderate/intense physical activity at the age of 11 years were 30% less likely to develop scoliosis ($P < 0.001$) [8].

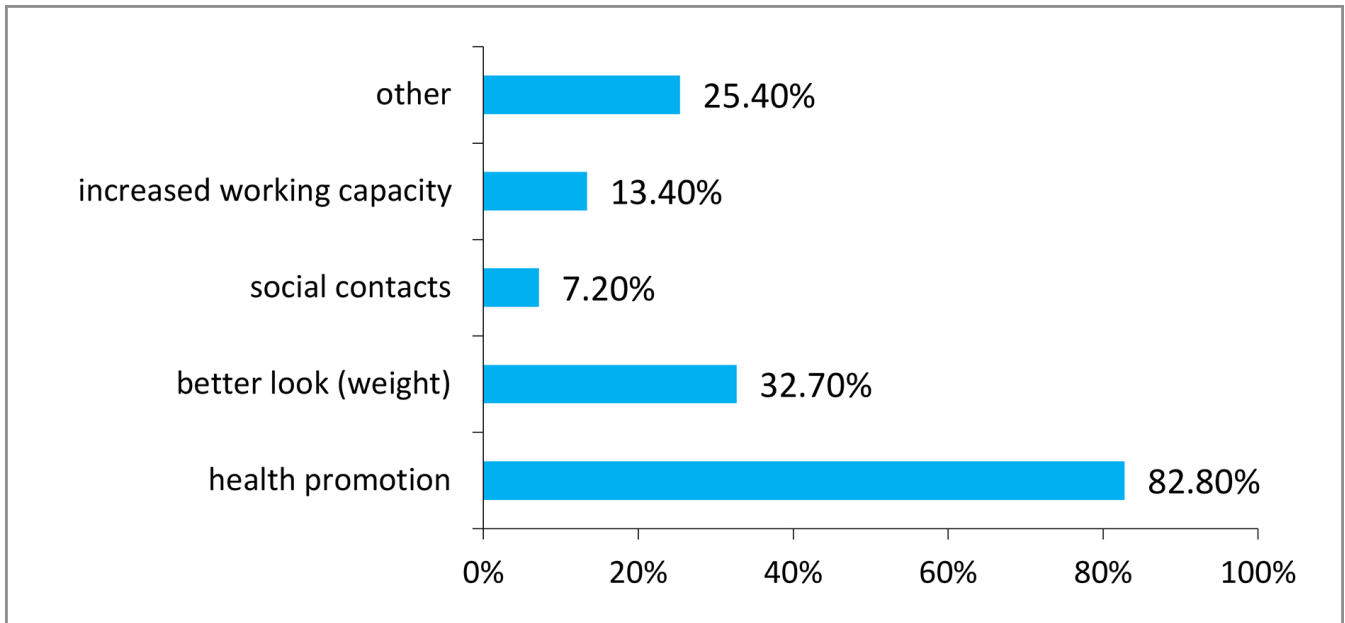
The positive finding from the results of our survey with the parents was that the majority of families practicing sports (37.4%) had a long-term practice – over 5 years (Fig. 3). The share of those practicing sports from 2 to 5 years and under 1 year was approximately equal. This is a very good trend for improving children’s locomotor activity and creating lasting locomotor habits [9].

Fig. 3. Duration of sports activities.



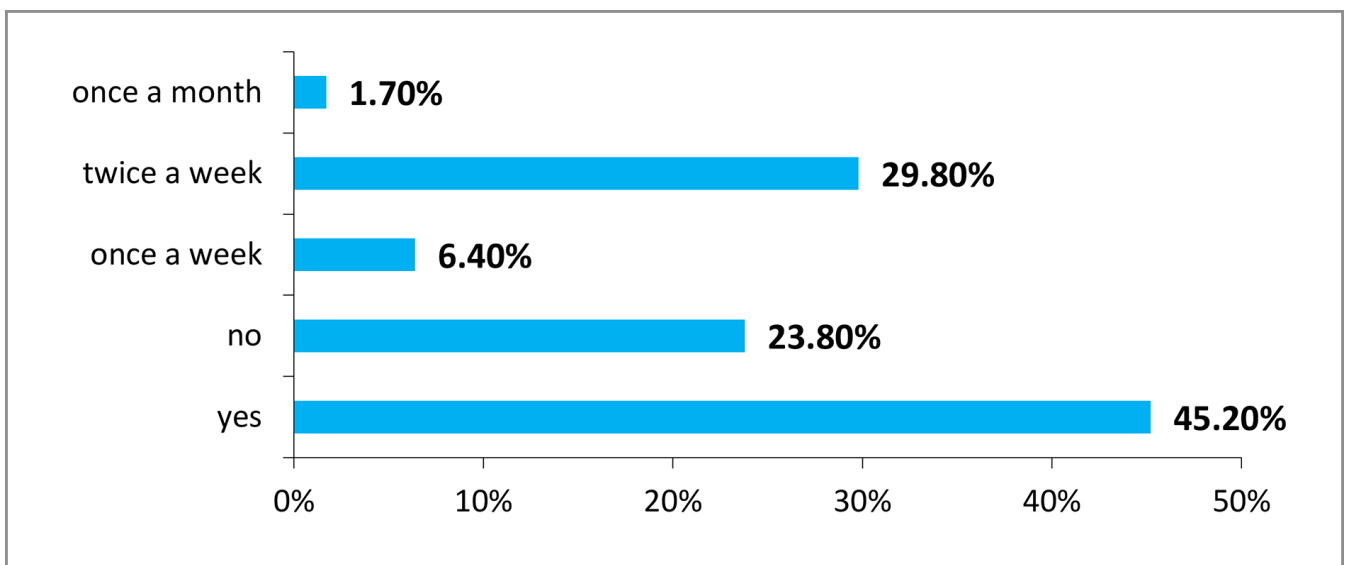
The motivation for practicing sports of the surveyed parents is an important part of the survey. The main incentive for 82.8% of families engaged in sports was maintaining and improving their health. One third of the respondents practiced sports to improve their appearance and maintain a healthy body weight. The smallest proportion of the families associated sports with more social contacts (7.2%) – Fig. 4.

Fig. 4. Sports activities motivation.



Scoliosis is not a factor determining physical activity. The activity level did not differ significantly between girls diagnosed with scoliosis and those with normal posture, with the exception of leisure time, which was spent more passively in scoliosis girls [3]. Overweight and unhealthy eating habits affect physical activity, regardless of the quality of posture. A decrease in physical activity predisposes to more frequent and increased use of electronic devices during the week. According to almost half of the surveyed parents (45.2%), their children exercised regularly. Only 1.7% answered that their children were active only once a month. However, another 23.8% believe that their children were not active (Fig. 5). Family activity is very important, stimulating children in the form of joint sports activities, hiking, outdoor walks and games, with 29.80% of them being engaged in sports twice a week, and for 6.4% these activities were once weekly only during the weekends!

Fig. 5. Schedule of sports activities.

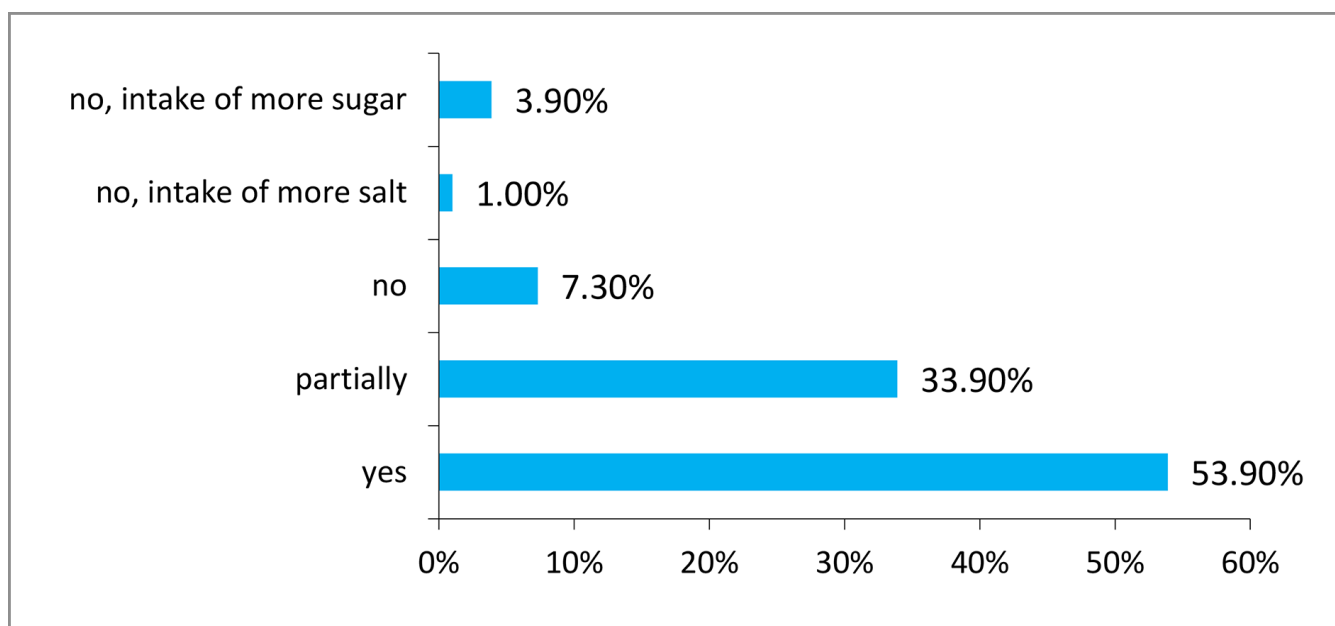


Our results confirmed to a large extent, the findings from the study of parents in the city of Varna. The data of Filkova [1] showed that the largest share – more than one-third of parents (39.7%; n=119) – were engaged two or three times a week without being aware the healthy norms for physical activity. The more familiar parents were with the

norms for physical activity, the more time they spent on sports games and outdoor walks with their children. In recent decades, there has been an unprecedented increase in the number of overweight children and children with functional disorders such as pain, joint stiffness and reduced muscle strength, which contribute to the development of incorrect posture. Postural disorders involving the spine, chest and lower extremities are far more common in overweight children, often experience musculoskeletal pain. Macialczyk-Paprocka et al. [4] reported that postural deficiencies affected 74.1% of overweight boys and 85.5% of overweight girls and that the predominant problems were in the knees.

Therefore, not only locomotor activity, but also healthy eating habits determine the proper musculoskeletal development, the formation of postural control in children and the prevention of problems with lower extremities. Against background, it should be emphasised that more than half of the families observed healthy eating rules, and in 33.5% this was partially true. Of the families with harmful eating habits, the excessive intake of sugar (3.9%) prevailed over table salt abuse (1%). Almost all families (91%) claimed that they did not follow a specific diet. The intake of dietary supplements (Fig. 6) was neither a common practice.

Fig. 6. Healthy eating habits in the family.



CONCLUSION

Physical inactivity affects the mental health, physical condition and mental achievements of adolescents. Today, physical activity is a particularly important factor for ensuring normal blood circulation, muscle development, posture, flexibility and for maintaining the normal body state. Bad habits affect the overall family health, the development and upbringing of children, the formation of postural control and the prevention of impaired posture!

Acknowledgments:

This work was funded by the Bulgarian National Recovery and Sustainability Plan, Component “Innovative Bulgaria”, Investment 1 “Program for Accelerating Economic Recovery and Transformation through Science and Innovation”, Procedure through Direct Grants “Creating a Network of Research Universities in Bulgaria”, Project No. BG-RRP-2.004-0006 “Development of Research and Innovation at Trakia University in the Service of Health and Sustainable Well-being”.

REFERENCES:

1. Filkova S. [Prevention of Spinal Deformities in Preschool-Age Children.] [dissertation] Varna (Bulgaria): Medical University Varna. 2017; 78p. [in Bulgarian] [[Internet](#)]
2. Filkova S, Bogomilova S, Tarpomanova T. [Study of the locomotor activity of obese children.] [In Bulgarian] *Varna Medical Forum*. 2015 Oct; 4(3):393-397. [[Internet](#)]
3. Brzek A, Strauss M, Sanchis-Gomar F, Leischik R. Selected components of the lifestyle of adolescent girls with idiopathic scoliosis – an observational study. *Research Square*. April 19th, 2021. [[Crossref](#)]
4. Macialczyk-Paprocka M, Krzyzaniak A, Kotwicki T, Sowinska A, Stawinska-Witoszynska B, Krzywinska-Wiewiorowska M, et al. [Postural defects in primary school students in Poznan.] [in Polish] *Probl Hig Epidemiol*. 2012; 93(2):309–14. [[Internet](#)]
5. Syakhrani AW, Aslan A. The Impact of informal family education on social and emotional skills. *Indonesian Journal of Education (INJOE)*. 2024 Aug;4(2):619-631. [[Internet](#)]
6. Nimante D. Family and environmental factors influencing child development. *Human, Technologies and Quality of Education*. 2023; 103-116. [[Crossref](#)]
7. Hu D, Zhou S, Crowley-McHattan ZJ, Liu Z. Factors That Influence Participation in Physical Activity in School-Aged Children and Adolescents: A Systematic Review from the Social Ecological Model Perspective. *Int J Environ Res Public Health*. 2021 Mar 18;18(6):3147. [[PubMed](#)]
8. Tobias JH, Fairbank J, Harding I, Taylor HJ, Clark EM. Association between physical activity and scoliosis: a prospective cohort study. *Int J Epidemiol*. 2019 Aug 1;48(4):1152-1160. [[PubMed](#)]
9. Araújo FA, Martins A, Alegrete N, Howe LD, Lucas R. A shared biomechanical environment for bone and posture development in children. *Spine J*. 2017 Oct;17(10):1426-1437. [[Crossref](#)]

Please cite this article as: Ruska Paskaleva R, Ivanova V, Pavlova V, Taneva - Georgieva N. Family Environment as an Important Factor for the Physical Development of Preschool Children. *J of IMAB*. 2025 Oct-Dec;31(3):6657-6662. [Crossref - <https://doi.org/10.5272/jimab.2025314.6657>]

Received: 28/10/2025; Published online: 09/12/2025



Address for correspondence:

Ruska Paskaleva
Department of Kinesitherapy, Faculty of Medicine, Trakia University, Stara Zagora;
11, Armeyska Str., Stara Zagora, Bulgaria
E-mail: ruska.paskaleva@trakia-uni.bg,