Anterior View of Postural Youth Behavior: A Case Study

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Abstract

In the last two decades, incorrect posture has become significantly more widespread, particularly among school-aged children. According to various studies, scoliosis is one of the most prevalent incorrect postural types seen in school-aged children. The purpose of our study is to find out how common "Scoliosis" is among Albanian children. *Methodology:* About 308 kids aged 10 to 13 years (n = 151 girls, n = 157 boys) were randomly selected from Tirana public schools for this study. This group took part in a Posture Shape Examination (Anterior View), using Grid Chart Postural Analysis and the platform "Posture Screen Mobile®-PSM" (iPod). To provide exact information on their looks, children were photographed from the front (upright standing posture) wearing as little as possible. We analyzed the data statistically using "IBM SPSS Statistics 20," which included Descriptive and Frequency Analyze. *Results:* Our findings revealed that 34 individuals, or 11.03 % of the youngsters, had Scoliosis. This improper posture was more prevalent in 13-year-old youngsters (19.5%) than in children aged 10, 11, or 12. In comparison to females, boys were more impacted by scoliosis (12.7%) than girls (9.3%). The results reveal a minor difference in the degrees of postural displacement between boys (5.8185^0) and females (5.4361^0). Furthermore, postural displacement is greater in 13-year-old males (7.7650^0) and 12-year-old girls (6.1458^0). *Conclusions and Recommendations:* Based on the results of our study we conclude that incidents of anterior postural asymmetry occurred even in Albanian school-age children. Scoliosis, even why is detected more in boys, seems to be present in both genders. Based on these conclusions we recommend that parents, teachers, and children should be more informed about good posture and the problems that might arise from an incorrect posture. Further studies are important to be conducted in this field, in order to prevent the occurrence of these deviations and their aggravation in our young generation.

Keywords: Scoliosis, Children, Posture Asymmetry, 10-13 years old, Postural Deviations

Introduction

Because of the modernization process, which has significantly affected human postural structure, our daily routines have changed substantially. As a result, poor posture has become one of the most explored issues among scientists, as well as a problem that is fast growing among the youth. (Motow -Czyz et al., 2014; Brianezi et al., 2011) It has been revealed during the last two decades that the young generation is frequently driven to the usage of electronic devices (e.g., mobile phone, iPod, video game act), which has been proven to have an influence on upright standing, also known as "Posture." (Tremblay and Willms, 2000; Banfield, 2000; Misra et al., 2012). Even Kratenova confirmed this, stating that youngsters who spent 14 hours a week watching television or playing video games had the highest likelihood of developing improper posture. (Kratenova et al., 2007) Furthermore, it has been shown that there is a link between the way they sit or handle their schoolbag and the onset of Scoliosis. (Minoo et al., 2013) Children's postural abnormalities are thought to be caused by lengthy periods of sitting. This occurs because of long-term strain on various joints, which causes weariness in the muscles around them to relax. The body emerges from the ideal postural pose because of these relaxed muscles. The longer it remains in the incorrect postural position, the faster it might be accepted as good postural behavior if they continue to execute it. As a result, frequent breaks with minor moves over long durations of sitting may be the ideal strategy. This method may help their body straighten up again. Regrettably, many Albanian instructors have yet to use this technique. Many scientists should continue to attempt to reduce the lack of understanding about how to maintain an upright standing posture. As a youngster grows older, postural concerns become more obvious. In reaction to quick and gradual changes, their bodies perform compensatory movements in an attempt to restore a new balance, which usually results in the formation of postural abnormalities. Scoliosis is the most common postural deviation in children, and it looks to be on the rise in school-age children. (Latalski et al., 2013) Scoliosis is a malformation of the spine that causes lateral bending (left or right). Since the young asymmetrical body was one of the most prevalent symptoms recorded in years, scoliosis has been one of the most investigated postural disorders. Scoliosis was found to be 0.13 % in Kane and Moe's study, with females being more afflicted than boys are (1.5: 1). (Kane and Moe., 1970) The same was found in the Willner and Uden study stated that Scoliosis is more common in females than in boys, with 4.3 % in girls and 1.2 % in boys. (Willner & Uden., 1982) According to Karachalios, 1.18 % of participants had scoliosis, and there is no difference between girls and boys, therefore they were recognized in a 1:1 ratio in terms of scoliosis prevalence. (Karachalios et.al., 1999)

Aim: As a result, we decided to explore and assess the prevalence of this inappropriate postural form in school-aged Albanian children.

Research Methods

Participants:

In our study, 308 youngsters aged 10 to 13 years old were chosen at random from Tirana's secondary and elementary public schools.

Posture Test:

An IPAD "Posture Screen Mobile®" and a Postural Analysis Grid Chart were used to analyze 308 children aged 10 to 13 years (n = 151 females, n = 157 boys) for postural anomalies. The IPAD was used to photograph 308 children in frontal view, and then we used Posture Screen Mobile® (created by Dr. Joe Ferrantell in 2010) to statistically assess their postural form. To provide an adequate postural evaluation from a photo taken near the Postural Analysis Grid Chart, children were encouraged to wear only light clothes.

Statistical Analysis:

We used "IBM SPSS Statistics 20" to statistically analyze the acquired data, utilizing Descriptive and Frequency Analyze. In order to evaluate the presence of Scoliosis in our children's postural form, we analyzed the angle of posture displacement (in total) (Anterior View).

Results

Figure 1 shows that out of 308 participants, 49 % are girls and 51 % are boys, with a mean age of 11.5 years. Because the gender gap is not statistically significant, it has little impact on the prevalence of scoliosis by gender. Furthermore, it was shown that 13-year-old children were less engaged in this study due to their parents' opposition to their participation.

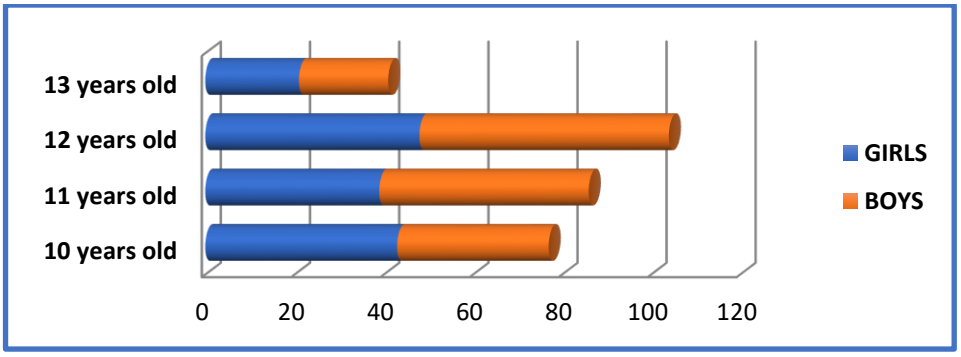


Figure 1. Participants by gender and age.

Table 2 shows that out of 77 children aged 10 years old, only 6 of them (3 boys and 3 girls) have light scoliosis, which means their spinal cord is deviated by 10^0 – 20^0 *(Cob Angle, 1948).* The prevalence of scoliosis at this age is 7.8%, therefore we can conclude that both genders are equally inclined to be impacted by scoliosis at this age.

ANTERIOR VIEW					BY GENDER	
SCOLIOSIS			Frequency	Percent	Frequency	Percent
			N	%	N	%
	Girls	Normal Posture	40	93.00	71	92.20
Age 10	N = 43	Light Scoliosis	3	7.00		
N = 77	Boys	Normal Posture	31	91.20	6	7.80
	N = 34	Light Scoliosis	3	8.80		

Table 2. Prevalence of scoliosis in children aged 10 years old, by gender.

Table 3 indicates the prevalence of scoliosis in 86 children aged 11 years old, which was found to be 8.1 %, with light scoliosis identified in only 7 of them (6 males and 1 female), contrary to table 2 results.

ANTERIOR VIEW					BY GENDER	
SCOLIOSIS			Frequency	Percent	Frequency	Percent
			N	%	N	%
	Girls	Normal Posture	38	97.40	79	91.90
Age 11	N = 39	Light Scoliosis	1	2.60		
N = 86	Boys	Normal Posture	41	87.20	7	8.10

	N = 47	Light Scoliosis	6	12.80		

Table 3. Prevalence of scoliosis in children aged 11 years old, by gender.

According to the result in Table 4, children aged 12 are more afflicted by scoliosis than those aged 10 and 11. Scoliosis was found in 12.5 % of 104 children aged 12 years old, which means that 13 of them (6 males and 7 girls) had light scoliosis. Furthermore, both genders exhibit scoliosis, with a modest quantitative difference but no statistically significant difference.

ANTERIOR VIEW					BY GENDER	
SCOLIOSIS			Frequency	Percent	Frequency	Percent
			N	%	N	%
	Girls	Normal Posture	41	85.40	91	87.50
Age 12	N = 48	Light Scoliosis	7	14.60		
N = 104	Boys	Normal Posture	50	89.30	13	12.50
	N = 56	Light Scoliosis	6	10.70		

Table 4. Prevalence of scoliosis in children aged 12 years old, by gender.

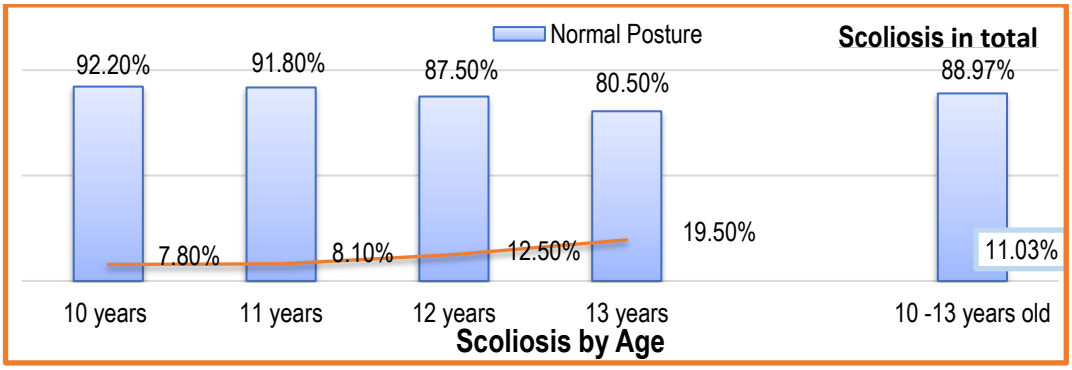
Table 5 shows that the prevalence of scoliosis is 19.5 % in 41 children aged 13 years old, which means that 8 of them (5 boys and 3 girls) had light scoliosis. Furthermore, results show that in this age group, boys are more likely to show scoliosis than girls are.

ANTERIOR VIEW			BY GENDER	
SCOLIOSIS	Frequency	Percent	Frequency	Percent
	N	%	N	%

	Girls	Normal Posture	18	85.70	33	80.50
Age 13	N = 21	Light Scoliosis	3	14.30		
N = 41	Boys	Normal Posture	15	75.00	8	19.50
	N = 20	Light Scoliosis	5	25.00		

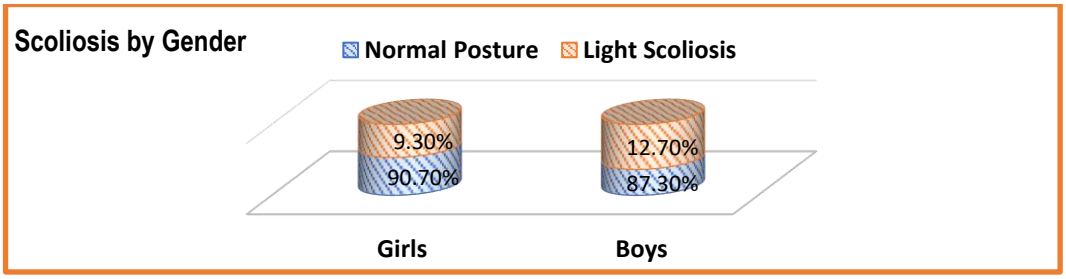
Table 5. Prevalence of scoliosis in children aged 13 years old, by gender.

As seen in Graphic 1, scoliosis becomes one of the most typically detected postural forms as children grow. Scoliosis affects 11.03 % of Albanian children aged 10 to 13 years old, according to the results.



Graph 1. Prevalence of ***Scoliosis*** in total and by age.

Graphic 2 shows the prevalence of scoliosis among all our participants (N=308; aged 10-13 years old), revealing that scoliosis is more common in males (12.7 %) than in girls (9.3 %).



Graph 2. Prevalence of ***Scoliosis*** by gender.

Table 6 shows that boys (5.8185^0) have a more distorted posture than girls (5.4361^0), which unfortunately appears to become much worse with time. Furthermore, the

degree of postural displacement in females grows between the ages of 10 and 12, but after that, the posture displacement declines. The mean values of postural displacement are higher in 13-year-old boys (7.7650^0) and 12-year-old females (6.1458^0).

Descriptive Statistics						By gender			
Gender	Age	Min	Max	Mean	Std	Min	Max	Mean	Std
	10	0.00	15.50	4.8453	3.2895	0.0	15.50	5.4361	3.2384
Girls	11	0.00	12.20	5.0718	2.6433				
N = 151	12	0.00	14.70	6.1458	3.1451				
	13	0.00	15.00	5.7000	4.1370				
	10	0.00	11.20	4.8176	2.9368	0.0	18.10	5.8185	3.5487
Boys	11	0.00	12.70	5.2426	3.5932				
N = 157	12	0.00	15.50	6.2143	3.5294				
	13	2.80	18.10	7.7650	3.7465				

Table 6. Descriptive Analyze of Scoliosis by age and gender.

Discussion

Children's postural diversity has become one of the most explored and studied areas, especially among physical education professionals. As long as our children spend a significant amount of time in school, we must be vigilant about their long-term sitting position. Standing in the same posture for a long time relaxes muscles, resulting in an imbalance that impairs the upright standing position. All of this happens because of intolerable pressure operating on the same place of the body repeatedly.

It is crucial to emphasize why our study focuses on children aged 10 to 13 years old in order to examine the prevalence of postural deviations. All of this is connected to the fact that postural irregularities may be easily addressed by workouts only if they are detected before the developing process is completed, allowing ample time for repair. (Brianezi et al., 2011; Latalski et al., 2013; Cosma et al., 2015)

Recently, the incidence of postural deviations has grown among youngsters, as evidenced by Janakiraman's study, which concluded that bad posture has tragically

reached pandemic proportions (Janakiraman, 2014). Based on these remarks, we decided to look into scoliosis and its incidence among Albanian children. When compared to other research, our findings revealed a reduced prevalence of this postural abnormality. Regardless, we must pay attention to this emerging health risk among Albanian youngsters in order to avoid it from becoming widespread. According to the findings of our study, 11.03 % of 308 Albanian children aged 10 to 13 years old were diagnosed with scoliosis, indicating that this global health concern manifests itself in the posture of Albanian youngsters. These findings are consistent with recent research that show scoliosis is the most prevalent postural abnormality. (Kratenova et al., 2007; Bueno &Rech, 2013)

In the context of our research, it is crucial to note that the wide range of findings in different studies on the prevalence of scoliosis in children is understandable as long as diverse diagnostic procedures are used. (Purenovic, 2007; Bueno & Rech, 2013)

Our findings revealed that boys (12.7 %) are more affected by scoliosis than girls (9.3%), but this evidence contradicts the findings of international studies that claim that girls are more affected by scoliosis (Kane & Moe and Willner & Eden) and others who found that girls and boys are equally affected by scoliosis (Karachalios). This diversity is because of different tests and age groups of the referred research articles.

Conclusion and Recommendation

Based on our findings, we can clearly conclude that a scoliosis is a postural form that may be discovered in Albanian children. Furthermore, our findings revealed that girls aged 12 and males aged 13 were more harmed by this poor postural form than youngsters aged 10 to 11. Based on our findings, we need to be more cautious regarding the postural development of the next generation. Our future scientific purpose in this health concern will be to dig as deeply as possible in order to avoid its spread.

We recommend that parents must pay greater attention to their children's postural development because of the detected bad posture among Albanian youngsters. A periodic inspection by a professional must be the least of a parent's carelessness for their children's improved postural development. They have the ability to prevent the development of bad posture by asking and motivating them to maintain their bodies straight or involving them in an active lifestyle. Physical Education Teachers have a significant influence on the prevention of improper posture in youngsters. They are responsible for ensuring that children receive a good postural education during school hours. They should pay attention to preventing poor posture by keeping them informed about what good posture is, why it is necessary, when a postural shape is proper, and how to avoid it. Despite the fact that bad posture has become one of the most studied issues, it continues to be a serious problem in children's posture. All of this indicates that our research must continue and become more in-depth in order to help, at the very least, to minimize the number of incidences of this phenomenon.

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