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Published article "Brigitta Szilágyi, Alexandra Makai, Péter Tardi, Viktória Kovácsné Bobály, Ágnes Simon-Ugron, Melinda Járomi, Back School Program: Development of Back Care Knowledge and Spine Disease Prevention and Trunk State Among 6-7 Year-Old-Children, STUDIA UNIVERSITATIS BABES-BOLYAI EDUCATIO ARTIS GYMNASTICAE, LXVI, 3, 2021, pp. 77 – 92".

The sections below already contain the corrected text and numbers.

ABSTRACT. ***Introduction:*** The prevalence of posture deformities and muscle weakness among primary school children is high (50-65%). **Objective:** To assess and improve the back care knowledge and spine disease prevention, the strength of the trunk muscles, the flexibility of the lower limb muscles, the posture, and the lumbar motor control ability of primary school children by a 1-school year back school program. ***Methods:*** 102 (mean age: 6.549±0.500 years) children were examined at the baseline, and 48 (23 boys, 25 girls) were chosen for the program. Back care knowledge was examined by validated questionnaire, trunk muscle strength, and muscle flexibility by Lehmann tests, posture by New York Posture Rating Chart, and lumbar motor control by Sitting Forward Lean Test. ***Results:*** The complete back care knowledge (3.269±3.341, 16.269±2.426 points; $p<0.001$), trunk flexor (3.615±7.910, 56.885±113.748 sec; $p<0.001$), trunk extensor (8.962±5.963, 77.000±139.801 sec; $p<0.001$) static muscle strength, lower limb flexibility ($p<0.001$), habitual posture (53.846±10.130, 81.154±9.829 points; $p<0.001$), posture deemed correct 40.962±16.311, 91.346±6.566 points; $p<0.001$) and lumbar motor control (8.269±5.474, 0.154±0.368 mm; $p<0.001$) significantly improved in the intervention group for the end of the program. ***Conclusions:*** The back school program improves the back care knowledge and the trunk state among 6-7 years old children.

Data collection

Health Questionnaire on Back Care Knowledge and Spine Disease Prevention for 6-10 Years Old Children

The questionnaire was filled out by the children before and after the back school program. We used a self-developed and validated questionnaire (Szilágyi, 2021). The questions have been read aloud for them and were illustrated by drawings, pictures, and figures. Four questions addressed the anatomical and biomechanical properties of the spine, three questions were about spine utilization and ergonomics.

Scoring:

There are questions, with more correct answers, for every correct answer a point can be given, thus who can find all the correct answers a total of 7 points can be given for question 1, 2 points for question 2, 2 points for question 3, 3 points for question 4, 2 points for question 5, 1 point for question 6, and 1 point for question 7. For the wrong answer, 0 point was given. A maximum of 18 points can be obtained in the questionnaire and a minimum of 0 point. For the anatomical and biomechanical questions (1,2,5,7) 12 points, for spine use and ergonomical questions (3,4,6) 6 points could be awarded. Between 100-80%, the knowledge is appropriate, between 79-60% it needs to be developed, and between 59-0%, it is inappropriate.

Results

Results at the baseline measurement (n=102)

The mean point of the total score targeted to the back care knowledge was 2.333±2.136 points, which we can say was categorized inadequate with a 12.963±11.865%. The mean point of the anatomical, biomechanical knowledge was 1.127±1.559 points, and the mean point of the spine use, ergonomic knowledge was 1.206±1.205 points.

Back Care Knowledge and Spine Disease Prevention (Table 2)

Table 2. *The results of back care knowledge and spine disease prevention in the intervention and control groups*

		Intervention group (n=26)		Control group (n=22)		Differences between the intervention and control groups
		Mean ± SD (point)	p-value	Mean ± SD (point)	p-value	p-value
Total score	pre	3.269 ±3.341	<0.001	2.227 ±1.378	0.134	0.217
	post	16.269 ±2.426		3.000 ±1.773		<0.001
Anatomical, biomechanical	pre	2.423 ±2.101	<0.001	0.955 ±0.950	0.308	<0.001
	post	11.000 ±1.265		1.409 ±1.593		<0.001
Spine use, ergonomics	pre	0.846 ±1.515	<0.001	1.273 ±1.241	0.331	0.064
	post	5.269 ±1.343		1.591 ±1.297		<0.001

pre: baseline, before the program; post: after the program; SD: standard deviation