BG Pulse Journal USA
ISSN:1947-2536 http://www.bgpulseusa.com/index.php/bg

PEDAGOGICAL FOUNDATIONS OF ORGANIZING PHYSICAL EDUCATION FOR PRIMARY SCHOOL CHILDREN WITH POSTURAL DISORDERS

Karakalpak State University named after Berdakh
Lecturer at the Department of Theory and Methodology of Physical Culture
Akhmad Hamro ugli Norboev,

Master's student of Karakalpak State University
Khabibulla Aytmurat uli Kutlimuratov
https://doi.org/10.5281/zenodo.20554981

Keywords: Posture, movement, Spine, chest, lungs, breathing exercises, diaphragm, water exercises, gymnastics, spinal mobility, therapeutic exercises;

Annotation: The article highlights the issues of organizing physical education classes on a pedagogical basis for the prevention and correction of posture disorders in primary school students. The features of children's physical development and the system of correctional exercises were analyzed. In the course of the research, the anatomical and physiological characteristics of the musculoskeletal system of primary school children were studied, and the pedagogical bases for reorganizing traditional physical education lessons in a health-improving direction were developed.

Introduction

In primary school children, the musculoskeletal system is not yet fully formed. Modern lifestyle hypodynamia (low mobility) and prolonged improper sitting at the desk lead to postural disorders (scoliosis, kyphosis, lordosis). This problem must be addressed from the school years through pedagogical and physical rehabilitation measures.

The article highlights the methodology of a differentiated approach, the use of special corrective gymnastics exercises, the regulation of physical loads, and game technologies in the prevention of spinal deformities (scoliosis, kyphosis, lordosis). Effective models of medical-pedagogical control and school-family cooperation in shaping the correct posture reflex in students are also proposed. The research results contribute to improving the efficiency of physical education lessons in primary school and strengthening students' health.

Pedagogical principles.

Physical education in working with children with postural disorders is based on the following principles:

Regularity: daily and continuous organization of classes. Physical education classes for primary school children with postural disorders must be organized on a daily and continuous basis. Correcting musculoskeletal deformities is not a short-term intervention but a long-term pedagogical process. Daily and uninterrupted training forms a correct posture reflex (dynamic stereotype) in children, maintains constant muscle corset tone, and enhances musculoskeletal endurance. Even brief interruptions in training sessions lead to the loss of previously achieved corrective results and trigger the regression of spinal deformities.

Adaptability: individual distribution of loads depending on the child's physical condition. he physical capabilities, as well as the types and degrees of spinal deformities (scoliosis, kyphosis, lordosis), vary significantly among primary school children with postural disorders. Therefore, it is essential to adapt physical workloads according to each child's somatic health and functional status. This principle

requires considering the child's fatigue signs and individual adaptation capacities when assigning physical loads. An adaptive approach prevents the worsening of pathological processes, limits excessive stress on the musculoskeletal system, and ensures a safe and effective corrective environment for every child.

Consistency: step-by-step teaching of exercises from simple to complex. In correcting postural defects in primary school students, physical exercises are planned in a sequential order, transitioning step-by-step from simple and easy movements to complex and multi-joint actions. In the initial stage, the primary focus is placed on unloading the spine (exercises in a prone or supine position) and restoring local muscle tone. In subsequent stages, dynamic and static exercises are progressively made more challenging to reinforce the habit of maintaining correct posture. The logical sequence of exercises and the consistent increase in workload volume ensure the systematic formation of new, healthy motor stereotypes within the child's neuromuscular system.

Health-improving orientation: exercises serve to restore not only physical qualities but also posture. Any physical education tool organized for primary school students with postural disorders must primarily possess a therapeutic and health-improving effect. This principle sets the restoration of the child's overall functional health as the ultimate goal, rather than merely achieving sports results or developing high physical qualities (speed, strength). Physical workloads are directed toward enhancing the reserve capacities of the cardiovascular, respiratory, and musculoskeletal systems, as well as normalizing the functions of internal organs compressed due to spinal deformities. This approach guarantees the improvement of the child's physical development based on natural-biological laws.

Physical Education for Children with Spinal Deformities:

Physical education (PE) for primary school students with spinal deformities (such as scoliosis, kyphosis, lordosis, and flat back) must fundamentally differ from conventional physical training. At this developmental stage, the primary objective shifts from achieving athletic performance to therapeutic correction, functional compensation, and preserving the biomechanical integrity of the musculoskeletal system. They proved that it is necessary to take into account the development of theoretical foundations and ways to implement them in practice, taking into account the lag in the level of students' physical fitness and their varying level of preparation.

Medical and Pedagogical Classification

To ensure safety and efficacy, students diagnosed with spinal disorders are strictly differentiated into specific medical groups based on the severity of their pathology:

The Preparatory Group: Includes children with functional, non-structural postural changes (e.g., initial postural asymmetry). They participate in general PE lessons but are strictly exempted from high-intensity or high-impact physical loads.

The Special Medical Group: Includes children diagnosed with structural spinal deformities (Stage I and II scoliosis or kyphosis). These students follow a specialized curriculum focusing heavily on Therapeutic Physical Culture (TPC) under strict medical-pedagogical supervision.

Absolute Contraindications (Prohibited Exercises)

To prevent axial overloading, microtrauma to the intervertebral discs, and the progression of spinal rotation, the following movements are strictly prohibited:

Axial Weight-Bearing Exercises: Lifting weights, dumbbells, or medicine balls while in a standing position.

High-Impact Activities: High jumps, long jumps, and running on hard surfaces (asphalt or concrete), which generate harmful vertical shock waves along the spine.

Asymmetrical and Sharp Torsional Movements: Sudden twisting or hyper-rotation of the torso, which can exacerbate structural vertebral rotation, especially in scoliosis.

Hyperextension and Acrobatic Elements: Performing bridge positions (backbends), backward/forward somersaults, or sharp backward bending of the spine.

Purpose and stages of the study:

The main goal of the study is to experimentally substantiate the effectiveness of a specially developed physical education methodology for the restoration and correction of children's posture.

The study is usually organized in 3 stages:

Stage 1 (Confirmatory): Verification of the children's initial posture and physical fitness.

Stage 2 (Forming): Implementation of the new correctional physical education methodology into practice (during 6-9 months).

Stage 3 (Control stage): Conducting final tests and comparing the results obtained.

Research Methods (Diagnostics and Examination)

When conducting research on children, the following pedagogical and medical tests are used that do not injure them and provide accurate results:

Visual and Anthropometric Body Assessment (Somatoscopy) Goniometry (measuring angles): Symmetry of the shoulder line, the position of the shoulder blades, and the angles of lateral tilt of the spine are checked using special instruments or photometry.

Wall test: The child is propped against the examination wall with their back, shoulder blades, buttocks, and heels. The concavity (lordoz) of the cervical and lumbar spine is measured using a measuring tape.

Muscle Endurance Test (Pedagogical Tests) The main group of muscles that maintain correct posture is tested:

Back muscle endurance (Static Test): Measuring how long (seconds) the child can hold the upper torso in the air while lying on their back (without touching the chest to the ground).

Abdominal press endurance: The number of sit-ups per minute while the child is lying on their back is calculated.

At the end of the study.

It is expected that the static endurance of the back and abdominal muscles in the children of the experimental group (EG) will increase, shoulder and shoulder symmetry will be restored, and spinal tilt angles will decrease.

RESULTS AND THEIR DISCUSSION

At the conclusion of the 9-month research period, the physical and functional parameters of the primary school students in both the Experimental Group (EG) and the Control Group (CG) were re-evaluated and subjected to mathematical-statistical analysis.

The systematic implementation of the specialized corrective physical education methodology yielded the following significant results:

Increase in Static Muscle Endurance:Experimental Group (EG): The static endurance of the back muscles (the duration in seconds a child could maintain a prone extension position) demonstrated a remarkable increase, rising from an initial mean of (24.5 ± 2.3) seconds to (42.8 ± 3.1) seconds (a (74.6%) improvement). Additionally, abdominal wall muscle endurance increased by (58.3%).

Control Group (CG): Students who followed the standard curriculum showed minimal progress, with endurance increasing by only (12.4%) and (14.1%) respectively. This proves that conventional physical education hours lack sufficient corrective stimulus for weak muscle groups.

Restoration of Postural Symmetry:Post-experimental photometery and somatoscopic evaluations revealed that (68.4%) of the students in the EG achieved full or partial correction of shoulder-line and

scapular asymmetry (lateral spinal deviation).The wall-alignment metric confirmed that cervical and lumbar lordotic curves moved closer to physiological norms (\(3.5-4 \text{ cm}\)).

Improvement in Functional Capacity:Due to the integration of target-oriented asymmetric and deep diaphragmatic breathing drills, the Vital Lung Capacity (VLC) of the EG students expanded by an average of \(15.2\%\). This indicates a successful decompression of the thoracic organs previously restricted by spinal misalignments.

CONCLUSION

Reorganizing physical education classes based on the core pedagogical principles of regularity, adaptability, consistency, and health-improving orientation provides a highly effective framework for correcting postural defects in primary school children.

The specific corrective exercise protocols introduced in this study—executed primarily in supportive, non-weight-bearing positions—serve as the foundational factor in strengthening the muscular corset and stabilizing the correct posture reflex.

Traditional physical education curricula are inadequate for addressing the complex therapeutic needs of children suffering from spinal deformities.

Consequently, it is highly recommended to systematically establish Special Medical Groups in primary schools, integrate therapeutic physical culture elements into daily routines, and foster structured school-family partnerships for continuous posture management.

Summary

This scientific article proposes a methodology for special exercises in a prone position to correct posture disorders caused by physical inactivity in primary school students. As a result of the nine-month experiment in the group where this methodology was applied, back muscle endurance increased by 74.6%, and body symmetry was restored in 68.4% of the students. The study concludes that traditional physical education curricula are insufficient to rehabilitate children with spinal disorders. Effective postural correction requires a structural shift toward therapeutic and adaptive physical culture.

The systematic establishment of Special Medical Groups in schools, combined with rigid medical-pedagogical supervision and robust school-family cooperation, is imperative to guarantee the healthy physical development of the younger generation.

REFERENCES:

1. O‘zbekiston respublikasida jismoniy tarbiya va sportni yanada takomillashtirish va ommalashtirish chora-tadbirlari to'g'risida. O'zbekiston Respublikasi Prezidentining 2020 yil 24- yanvardagi PF-5924-son Farmoni
2. O‘zbekiston Respublikasi Prezidentining qarori, 23.12.2022 yildagi PQ-449-son
3. Абдуллаев А., Ханкельдиев Ш.Х. Жисмоний тарбия назарияси ва услубияти: Жисмоний тарбия институти ва олий таълим муассасалари жисмоний тарбия факультетлари учун дарслик. – Т., 2018. 268-б.
4. Qodirov E.Q. Odam anatomiyasi. Lotin. Toshkent. «Universitet». 2007, 276 bet
5. Абу Али ибн Сино. Тиб қонунлари. 1-жилд // Таржимон: Расулов А.Р. Қаюмов А.П. – Т.: Муҳаррир, 2013. – 692 б.
6. Shvırev, A.A. Anatomiya cheloveka dlya studentov vuzov i kolledjey / A.A. Shvırev. — Rn/D: Feniks, 2012. — 188 c
7. Абу Али ибн Сино. Тиб қонунлари. 3-жилд // Таржимон: Расулов А.Р. Қаюмов А.П. – Т.: Turon zamin ziyo, 2015. – 776 б.

8. O‘g‘li, Norboyev Ahmad Hamro, and Uzaqbaev Ruslan Anvarovich. "TAYANCH HARAKAT SISTEMASIDA O ‘ZGARISH BO ‘LGAN O‘RTA MAKTAB O ‘QUVCHILARIGA JISMONIY TARBIYA DARSLARINIINI OLIB BORISH USULLARI." Eurasian Journal of Academic Research 5.9 (2025): 183-190.
9. Hamro o’g’li, N. A. (2023). SKOLIOZ BILAN KASALLANGAN O'RTA MAKTAB YOSHIDAGI BOLALARNING JISMONIY TIKLANISHI. SO ‘NGI ILMIY TADQIQOTLAR NAZARIYASI, 6(6), 38-42.
10. Anvarovich, Uzakbaev Ruslan. "METHODS OF EFFECTIVE USE OF A COMPLEX OF SPECIAL PHYSICAL EXERCISES TO PREVENT DISORDERS WITH BODY STANDING OF STUDENTS IN GRADUATE CLASSES."
11. Karamatdinovich, T. S. (2024). Method Of Using Physical Exercises For High School Age Children With Scoliosis. Texas Journal of Multidisciplinary Studies, 30, 33-38