Bulletin of the *Transilvania* University of Braşov
Series IX: Sciences of Human Kinetics • Vol. 16(65) No. 1 – 2023
https://doi.org/10.31926/but.shk.2023.16.65.1.13

COMPARATIVE ANALYSIS OF SOME STRENGTH INDICES BY GENDER IN PRIMARY SCHOOL STUDENTS AFTER THE COVID 19 CRISIS

A.R. TANASĂ[1] B.A. ABALAȘEI[2] V.A. MUNTIANU[3] V. DORGAN[4]

Abstract: *The purpose of this research study was to examine whether the values of some strength indices in primary school students are different in girls than in boys after the Covid 19. The sample included in the research consisted of 63 primary school students. The research focused on the following muscle groups: upper and lower limbs, abdominal and lumbar region. Independent - Samples T Test was used to interpret the results. Significant differences were found for the Standing long jump and from Bench press.*

Key words: *strength indices, primary school, Covid19, physical education.*

1. Introduction

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the infectious illness that causes the coronavirus disease (COVID-19), which was initially discovered in December 2019 in Wuhan, China. Presently, this pandemic has killed about 600,000 individuals and infected over 15 million people in nearly 210 nations. A pandemic of this magnitude has not been experienced since the Spanish Influenza epidemic of World War I, and it has already significantly impacted the global economy, social connections, and way of life. One of the biggest positive-stranded non-segmented RNA viruses (27-34 kilobases), coronaviruses are called after the 120 nm diameter envelope around the nucleic acid-protein complex (similar to the solar corona). The virus primarily affects human health, causing direct harm to the respiratory system, immune system

[1, 2, 3] *„Alexandru Ioan Cuza”* University of Iasi, Str. Toma Cozma, Iasi, 700554.
[4] State University of Physical Education and Sports Chișinău .

breakdown, worsening of preexisting medical disorders, and ultimately systemic failure and death. As a result of the COVID-19 attack, tens of thousands of victims have been admitted to hospitals, and millions more are being forced to stay in confined spaces. This drastic change in lifestyle brought on by confinement, the health and wellbeing of those who are infected as well as the general population may conceivably be attacked in a second wave by (hospitalization and bed rest), seclusion, and inactivity [23], [16], [8], [4], [13], [5].

Regrettably, sedentariness and lack of physical activity are encouraged by current lifestyle choices. Social isolation, self-imposed restrictions, and government policies all serve to exacerbate these unhealthy lifestyle choices methods of mandatory quarantine designed to stop the spread of COVID-19. These conditions make it extremely difficult to stay physically active. All socioeconomic classes, races, and age ranges should maintain excellent health during times of isolation by adhering to the WHO recommendations of 150 minutes of moderate-intensity PA or 75 minutes of vigorous-intensity PA each week, or a combination of the two. Two or more days a week should be dedicated to main muscle group strengthening exercises. It is advised that children and adolescents engage in PA of any level for a minimum of 60 minutes each day [3], [17], [1], [14].

In accordance with the literature, the primary educational goals of providing all children with a minimum level of education, shaping each child's personality while respecting his or her rate of development, reporting effectively and creatively to the social and natural environment, and achieving the goals of the two academic cycles that most interest him or her, refer to the promotion of health and increased capacity for adapting to environmental factors [20].

Objectives for developing motor skills include being able to respond quickly to visual, auditory, and tactile stimuli with effective movements; achieving quick movements, deflections, and price thresholds; adjusting the speed of one's movements in a variety of situations and in interactions with allies and foes; and controlling one's body's weight and body parts with one's own muscles, to move and exert resistance while carrying out light tasks (such as lifting, supporting, moving, tracing, etc.), to coordinate movements under a variety of complicated and varying spatial conditions, and to exert consistent and variable effort throughout time, to consider the typical growth patterns of motor skills for one's age and gender and to take systematic steps to maintain and improve one's own indicators of speed, dexterity, strength, and resistance [20].

Evidence suggested that student's connection with classmates and opportunities for physical activity might greatly reduce by the enforced isolation and school closure. Furthermore, children's sedentary activities and screen time might expand owing to the social distancing [24].

Additionally, recent research have found that people' levels of physical activity significantly decreased while confined to the Covid-19 environment. Furthermore, these research have shown that persons who have lower levels of physical activity or who have had greater declines in physical activity levels during the Covid-19 epidemic have poorer mental health and wellbeing. In fact, comparable

connections between lower levels of physical activity as a result of the Covid-19 confinement and worse mental health may also occur for kids and teenagers [9], et al., 2020, [6], [10 12, 11].

2. Objectives

This study's goal was to determine whether girls and boys in primary school kids had different values for various strength indices after the Covid 19.

3. Material and Methods

The 63 primary school students who made up the research sample were split into two groups based on gender: 28 girls (M = 30.73, SD = 7.26 kg; M = 133.57, SD = 4.57) and 33 boys (M = 32.90, SD = 8.81 kg; M = 135.06, SD = 7.28 cm). The tests employed in the study included *bench pulling*, *standing long jumps*, *torso raises from dorsal decubitus*, and *torso raises from facial decubitus*. The research was focused on the following muscle groups: *upper and lower limbs*, *abdomen*, and *lumbar region*. We utilized them in accordance with the subsequent process:

Bench pulling: subjects are positioned face down on the gym bench.

They perform pull-ups on the gym bench. The time of the test is 30 seconds.

Standing long jump: subjects stood up with their tiptoes at the start line (marked by a band). They took off using their arms, stretched their legs, and swung their arms as much as possible. Upon landing, they kept the legs together, trying not to lose their balance.

Torso raises from dorsal decubitus: the subjects sat on a mattress, knees flexed at 90°, soles on the floor and hands to the back of the head. Afterwards, they moved towards the floor until they touched it with the shoulders; then, they resumed the initial position, by placing the elbows forward and touching their knees. On the examiner's signal, the subjects executed as many raises as possible in 30 seconds.

Torso raises from facial decubitus: the subjects lied flat on a gym mattress, legs close together and stretched, hands to the back of the head. They executed torso raises from this position and then they resumed the initial position (lying flat). On the examiner's signal the subjects executed as many raises as possible in 30 seconds [15].

For to interpret the result we used *Independet - Samples T Test*.

4. Results and Discussions

Table 1 and the subsequent figures compare the results obtained at the four tests by the primary school students included in our study. The table shows the differences between girls' and boys' scores

Results obtained at the tests applied Table 1

Test applied	Girls		Boys		*t*	DF	*two-tailed p*
	n	Mean (Std. Deviation)	n	Mean Std. Deviation			
Height	28	133.57 (4.57)	33	135.06 (7.28)	-	-	-
Weight	28	30.73 (7.26)	33	32.90 (8.81)	-	-	-
Bench pulling (rep/30s)	28	12.39 (8.60)	33	17.58 (5.89)	2.77	59	0.007
Standing long jump (cm)	28	97.50 (17.74)	33	109.48 (24.63)	2.07	59	0.043
Torso raises from dorsal decubitus (rep/30s)	28	18.36 (4.68)	33	17.45 (7.22)	0.56	59	0.573
Torso raises from facial decubitus (rep/30s)	28	27.50 (7.48)	33	28.55 (9.72)	0.46	59	0.644

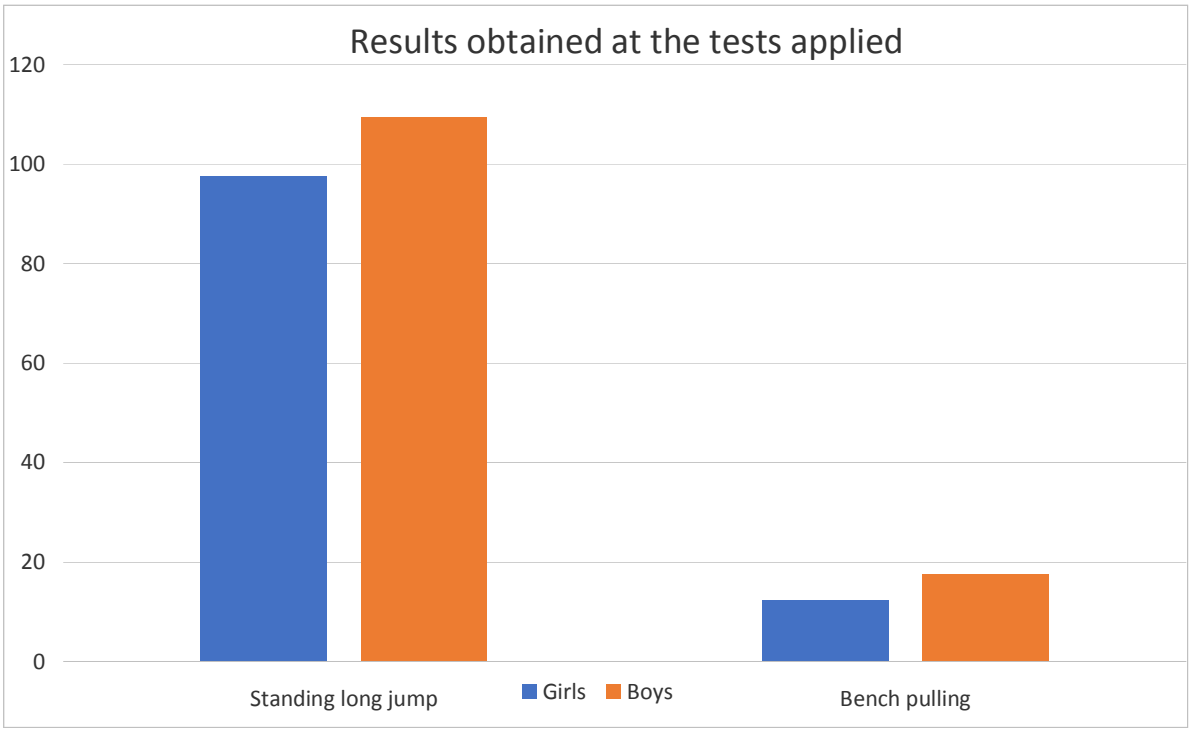

Fig. 1. *Results obtained at the tests applied*

We came to the conclusion that there was no difference in the means of the two other samples (*Torso raises from dorsal decubitus* (rep/30 s) and *Torso raises from face decubitus* (rep/30 s)) after reading the results.

The *Standing Long Jump* and *Bench Press* showed significant differences.

The *boys' standing long jump mean* (M = 109.48, SD = 24.63) is substantially higher than the girls' standing long jump mean (M = 97.50, SD = 19.74) (t = -2.07, DF = 59, two-tailed p = 0.043).

In the *Bench Pulling Test*, boys' values (M = 17.58, SD = 5.89) are also higher than girls' values (M = 12,39, SD = 8,60) (t = -2.77, DF = 59, two-tailed p = 0.007). The means of the other two samples weren't different from one another.

Comparing the data with those from the specialized literature, in this study, we found that among primary school children during or compared with three months prior to the COVID-19 epidemic, there was a significantly lower (especially among girls) amount of time spent engaging in physical activity (especially those dedicated to muscular strength development), longer screen time.

The COVID-19 epidemic restricted possibilities for physical activity at home, which caused levels of physical activity among kids to significantly decline. Team sports and physical exercise during recess may benefit kids' wellbeing, foster prosocial behavior, and reduce teenage disaffection. Youth who don't engage in enough physical exercise at school may benefit greatly from physical education lessons. Yet, the prolonged school closure will reduce access to physical exercise and the benefits associated with it. The majority of children in metropolitan areas were compelled to stay at home, and their caretakers would restrict their participation in outside activities like those in parks and playgrounds since they could not certify that these locations were sufficiently clean and secure [24, 19, 2, 7].

Before the COVID-19 epidemic, a different study looked at gender differences in terms of things like body mass index (BMI), the kinds of physical activities students engaged in, the levels of physical effort they put in, their performance, and their access to sports facilities. They came to the following conclusions after analyzing the data: boys have a bigger body mass than girls ($t=4.611$, $p<0.0001$), and the BMI values are ($t=4.587$, $p<0.0001$). Both genders participate in extracurricular physical activities for the same number of months (7 months) of the year ($t=0.4950$, $p<0.05$) when it comes to exercise length ($t=1.966$, $p<0.05$). Boys are found to engage in more physical activity than girls ($t=1.982$, $p<0.0001$), although both sexes report that the perceived intensity of physical activity is equal ($t=0.03324$, $p<0.05$). Both genders engage in extracurricular physical activity at a leisurely pace ($t=0.04689$, $p<0.05$), although convenient access to sporting venues is noted ($t=1.356$, $p<0.05$) [22].

5. Conclusions

The Covid 19 Pandemic had a detrimental impact on student attendance. This encouraged inactivity and the passing of time in front of the creditors. These factors are included in the previous statistical calculations as well.

We can state that the continuous observation of physical education activities among first-grade students using a variety of methods, procedures, and tools is very beneficial and gives

information on the students' performance and health.

Physical education goals can only be achieved by systematically achieving a few extremely crucial goals for a person's moral development and education. They include developing motivational skills, establishing a system of cognitive skills, measuring and implementing motivational deprivations in programs, and valuing the effects of nave experimentation in support of the achievement of overall educational goals.

Acknowledgements

We would like to thank all the participants in this study.

Other specifications

All the authors had equal contributions to this research.

This work was co-funded by the European Social Fund, through Operational Programme Human Capital 2014-2020, project number POCU/993/6/13/153322, project title << Educational and training support for PhD students and young researchers in preparation for insertion into the labor market >>

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