# DANCE INFLUENCE ON MEDICAL STUDENTS' POSTURE

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**Abstract:** The aim of the study was to identify the influence of dance exercise on the posture of 50 medical students, 15 male and 35 female, who participated weekly in physical education classes in which they were applied specific methods and modern popular dance. The subjects' posture was tested by Pagani Equa platform. The subjects were tested before the implementation of the work programs at the end of the research (after 8 months). Following the final results significant improvements in posture, the anterior-posterior and left-right dials were highlighted. The recorded data validated the work programs, which are statistically significant at a threshold of $p < 0.05$.

***Keywords****: dance, posture, students, quality of live.*

## Introduction

The positive change of the social phenomenon in physical education and sport must begin with changing the basic general concepts about physical education and sport in a society in transition. The new concepts will have to meet all the requirements demanded by the social, individual and the group. In this situation physical education and sports needs to be studied as a complex social phenomenon, dynamic, with nationwide implications, motivations, concepts, individual and group interests , varied and constantly changing. [1].

The lack of exercise is a well known fact in our country, putting this on the lack of a culture for the movement, which should be developed even during childhood. [2]. Among other areas where physical activism is found, the major health is perhaps the most connected in the immediate reality, given the worrying state of morbidity statistics in Romania and abroad. [3]

Human health can be considered a state that defines normality, individual existence, meaning maintaining the structural balance of platforms (on corporeal biologically and psychologically conscious plans) both from internal perspective (the reciprocal report of each of the subsystems compliance, the system states in relation to the general rules of the species, the age, the sex) and from the external perspective, the balance between the individual and his environment, the adaptive equilibrium with his concrete ambient.

Any anomaly in our posture brings a higher consumption of energy and functioning of the entire body. Every anomaly, at any level can look like an organic disorder.[4]

## Methods

In the research, we included a sample composed of 60 subjects, aged 18-26, 15 of whom were male and 45 female students in Medicine and Pharmacy Craiova year I, who accepted to participate in this research also showed interest in the new programs of work that included dance exercises.

The posture testing by the equilibrium platform Equa Pagani. This equipment lies in Craiova FEFS Research Center and is a device that allows the assessment of static balance and posture.

The system consists of:

-a pressure sensor platform that collects information proprioceptive related stimulation of the leg. The platform has a size of 40 / 40cm and is marked on its surface with the planting contour region where there are different sizes of the foot, appropriate to the shoe number;

- a support for the computer desktop and PC's other components.

The software requires the entering of the following data: name, existing pathology, date of birth, sex, shoe number.

The evaluation protocol involves: placing the subject on the pressure platform, orthostatic posture adopted, previously projected view in the monitor must be positioned so as to be in the track of the eyeball. Choose the protocol: static balance and posture assessment, the two situations-with your eyes open and then with eyes closed.

The duration for maintaining the position on the platform ranges from 10 seconds to 60 seconds. Following the evaluation of data we achieve the following balance and posture-related parameters:

-deviations of the body relative to the axis (in the 4 quadrants-2anterior and two rear), the curve of variation around the center of gravity changes, duration deviations, location and the distribution center of the press center.

In our research, we measured the deviation relative to the body axis, 30 seconds before and after implementing the work programs. The processing and interpretation of the data was performed using SPSS statistical software V.21

**Results**

**Table 1. Statistical Parameters - antero-posterior quadrants Pagani Platform**

| Statistic Parameters | anterior quadrant T1 | anterior quadrant T2 | posterior quadrant T1 | posterior quadrant T2 |
|---|---|---|---|---|
| **average** | 58.2 | 51.5 | 42.8 | 49.65 |
| **stdev** | 1.18 | 1.28 | 1.48 | 1.50 |
| **cv** | 2.18 | 2.92 | 3.24 | 3.08 |
| **max** | 60 | 45.6 | 43.1 | 46.1 |
| **min** | 56.3 | 52.1 | 48.1 | 51.2 |
| **amplitude** | 8 | 5 | 6 | 5 |

The results achieved in the posture via the Pagani platform, have both initial testing earlier predominance, with an average of 58.2 percent compared to the rear, where the average was 42.8 percent, which suggests a postural imbalance for the anterior quadrant. With the final testing, this difference decreases and reaches an average of 51.5% in the front and 49.% for the back, is balancing posture.

In the final testing, we observed a slight change with antero-posterior posture, with an easy earlier tendency, much improved from the initial testing. The difference in positioning the center of gravity is above 8.47% more than the posterior initial testing, the gap decreasing to 2.74% in the final testing.

**Table 2. The statistical parameters - anteroposterior Pagani Platform**

| Student Test T1-T2 | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Tests difference | | | | t | Liberty degree | Level of signifivance ie |
| | Mean difference | std. deviation | 95% confidence interval Inferior | Superior | | | |
| Anter. 1 – Anter. 2 | 2.73 | 1.90 | 2.23 | 3.22 | 11.11 | 59 | .001 |

The Student test (Table 2) applying between initial and final testing reveals that the difference between average is 2.73, t value is 11.11 and the degrees of freedom 59. The 95% confidence interval for the difference ranges from 2.23 to 3.22. Since the confidence interval does not pass through 0.00, the difference is statistically significant at a 5% significance bidirectional threshold being $p < 0.001$.

In the left-right quadrants, the differences are not so obvious, in the initial testing the mean value of right laterality is 53.15% and for the left of 46.85%, a difference of 6.03.

**Table 3. The statistical parameters - left-right Pagani platform**

| Student Test T1-T2 | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Testing difference | | | | t | Liberty degree | Level of significance |
| | Mean Dif. | std. deviation | 95% Inferior Confidence Interval | Superior | | | |
| Stg. 1 – Stg. 2 | 3.32 | 1.2 | 3.20 | 4.18 | 13.11 | 49 | .001 |

Applying the Student test between initial and final testing for the left quadrant, there is a difference between averages of 3.32, t value is 13.11 and the degrees of freedom 49. The 95% confidence interval for the difference ranges from 2.20 to 4.18. Since the confidence interval does not pass through 0.00, the difference is statistically significant at a 5% the bidirectional significance threshold being p <0.001.

**Conclusions**

The medical students' posture testing was aimed at the detection of certain weaknesses or poor attitudes in this stage of life and act to combat them through exercise.

Testing the posture via the platform equilibrium Pagani platform, we realized that subjects initially submitted a relevant antero - posterior change of posture, with a tendency to bend forward the head, which is responsible for the emergence of kyphosis, much improved in the final testing. The difference in positioning the center of gravity was 9.35% more anterior than posterior in the initial testing, the gap decreasing to 3.28% in the final testing.

The explanation for these changes is the inclusion of work programs with objective stimuli that have occurred on the tangible body attitude, the dance means helping to improve posture.

This study confirmed the results from a previous study [5] which advise the role of physical exercise on improving the students posture.

At this age, deviations from proper posture, may be recovered with a conscious and voluntary intervention on those presenting deficiencies detected, the primordial means being the medical gymnastics exercise.

**References**

[1] Balint Gh., (2009), *Sinteze conceptuale în cercetarea ştiinţifică din domeniul fundamental de ştiinţă: educaţie fizică şi sport*, Editura PIM, Iaşi, p.16

[2] Marcu V., Ciobanu D., 2009, *Exerciţiul fizic şi calitatea vieţii*, Universitatea din Oradea, pag 137

[3] Bota, A. (2007). Expectanța de viață sănătoasă - un nou concept. în Grigore, V. (coord.). Exercițiul fizic factor activ pentru prevenirea îmbătrânirii şi instalării bolilor degenerative, Editura Didactică şi Pedagogică, Bucureşti, p.114

[4] Cosma G., Dragomir M., Burileau A., Nanu M., Enescu Bieru D., (2015), Impact Of Postural Re-Education Exercise On Children With Scoliosis – A Case Study, *SGEM International Multidisciplinary Scientific Conference on Social Science and Arts*.

[5] Cosma G., Dragomir M., Nanu C., Albină C., Ciuvăț D., (2015), Improving the student's posture through interactive technologies, Science, Movement and Health, vol.XV, issue 2, Supplement, 300-305.