Original Article

**Study regarding the investigation of student's physical condition level
from the faculties with economic profile**

LAZĂR ANDREEA - GABRIELA¹, MIHĂILESCU NICOLAE²

^{1,2} University of Pitești, ROMANIA

Published online: November 30, 2019

(Accepted for publication: November 15, 2019)

DOI:10.7752/jpes.2019.s6331

Abstract

All the studies on movement have come to the conclusion that physical exercises play a role in improving the quality of life of people, in general, and of health and physical condition, in particular. Fitness for health comprises various components such as: morphological indices, functional indices, basic motor qualities and some elements related to emotional wellbeing. The general physical condition is a component of quality of life or an attribute of it. This paper is part of a larger experiment that aimed to detect the quality of life of young people. In this part of the research, we started from the hypothesis that by applying a battery of tests, we will identify the level of the physical condition (fitness) of the students and obtain information on the methods of action in order to improve it. This research was carried out in order to identify and determine the fitness level of the students from the faculties with economic profile of the "Stefan cel Mare" University of Suceava. The measurements were made on 172 young students. They are aged between 18-23 years and are students at the Faculty of Economics and Public Administration. From the analysis of the results of the tests that are part of the Eurofit battery, it was found that the physical condition of the young people is very low. The results of the young people proved to be unsatisfactory, most of them receiving scores below average, poor and very poor.

Keywords: students, assessment fitness, Eurofit Battery test, balance, speed, flexibility, explosive power, strength, muscular endurance, agility

Introduction

When we talk about an increased quality of life, an optimal state of health, resistance to different endeavors, we say that we have a good physical condition. In addition to the notion of physical condition, a new term – fitness has appeared in the specialized literature, being interpreted differently from the etymological point of view, with various classifications of its components. All the studies on movement have come to the conclusion that physical exercises play a role in improving the quality of life of people, in general, and of health and physical condition in particular.

Epuran, M., (2005a, p.377) said that we use the term "physical condition" or "fitness" by understanding either the activity for its achievement or its results. Therefore, the notion of fitness is accepted by some specialists as a system of methods and means practiced in order to obtain a wellbeing, "wellness" in English, and by others as representing the wellbeing as a purpose. Specifically, in the Romanian Dictionary we find the first acceptance of fitness, that is, the activity for a good physical condition, and in the English Dictionary, we find the second acceptance, namely, the results of physical activities, the purpose of the activities, namely the optimal well-being. Similarly, Allsen and Vance, quoted by Bota, A., (2011, p.53) define fitness as representing "a set of attributes by which the individual can cope with the physical and functional demands of daily or sports activities, depending on his condition, anatomical, physiological and psychological." An adequate level of fitness leads to a state of well-being that allows for vigorous motor actions and reduces the risk of illness.

According to Chandler, T., et al, (2007, p.83), "fitness is associated with health and some behavioral aspects related to the quality of functioning of the vital systems of the human body, especially the muscular, nervous, cardiovascular and respiratory systems", and Corbin and Lidsey (quoted by Dragnea, A., and Bota, A., 1999, p.222) present the concept of fitness in the form of affirmative answers to the following questions: carrying out daily activities with force, body attitude, energy for leisure, agile and supple body, engaging in prolonged physical efforts.

In the literature we usually find two types of fitness with different purposes and components. There is a physical condition of the athlete, which follows the performance (sports fitness) and physical condition for the ordinary man, which characterizes the level of adaptation to daily activities (general fitness). General fitness is seen as an attribute of quality of life. In the same vein, the authors Kirk, D., Cook, C., Flintoff, A., et al, (2008, pp.62-66) make the following classification of the components of the two types of fitness:

- *fitness for sport* or specific fitness with the following components: speed, agility, reaction time, balance, flexibility, aerobic endurance, force endurance, general and local muscular strength and power;
- *fitness for health* with the following components: aerobic endurance, force endurance, muscular strength and power, mental health, flexibility, body composition.

The components of the physical condition, related to the state of health, presented by the Council of Europe (1996a, p.20) are: body mass index, body composition, fat distribution, abdominal visceral adiposity, bone density, strength and resistance of the abdominal and dorsal muscles, cardiorespiratory function, blood pressure, aerobic capacity, glucose metabolism, lipid and lipoprotein profile.

Material and method

Hypotheses of the research: by applying a battery of tests, we will identify the level of the physical condition (fitness) of the students and obtain information on the methods of action in order to improve it.

The purpose of the research: the research was carried out in order to identify and determine the fitness level of the students from the faculties with economic profile of the "Stefan cel Mare" University in Suceava.

Subjects of research: the measurements were made on 172 young students. They are aged between 18-23 years and are students at the Faculty of Economics and Public Administration.

The research methods: method of study of specialized literature, method of analysis, survey method based on questionnaire, graphical method, tabel method, statistical – mathematical method.

Morphological indices evaluated: we used eight test from Eurofit in order to determine the level of physical condition (general fitness). The tests are: Flamingo Balance test, Plate Tapping (tests speed of limb movement), Sit and Reach - flexibility (using 15cm at the level of the feet), Standing Broad Jump (measures explosive leg power), Handgrip Test (measures static arm strength) Sit-Ups in 30 seconds (measures trunk strength), Bent Arm Hang (muscular endurance) and 10x5 meter Shuttle Run (measures agility).

Results and discution

After evaluating the physical condition of the students through eight Eurofit tests, we calculated some statistical indicators of the central tendency and indicators of the dispersion (table 1). After we ordered the results obtained by the students, we have developed scales of value intervals, the intervals that separate the data being equal between them. In the hope of enriching our field of activity, based on these interval scales, we have made scales graded on seven scales of appreciation (excellent, very good, above average, average, below average, poor and very poor). The "excellent" and "very poor" ratings were represented by the maximum and minimum values of the results of the students.

Table 1. Statistical indicators for Eurofit test battery results

Statistical indicators	EFL	AP	FLT	SLU	DIM	RTA	MAT	5x10
Mean	4.29	14.24	26.40	157.71	33.20	18.45	21.86	16.56
Median	4	14.25	26.75	156.5	34	18	17.50	16.42
Mode	3	15.03	25.5	155	36	17	13.65	16.11
Minimum	0	11.96	8	142	18	8	5.89	13.54
Maximum	12	18.03	40.5	177	48	27	58.90	20.84
Amplitude	12	6.07	32.5	34	30	19	53.01	7.30
Standard deviation	2.99	1.13	6.32	7.89	5.43	3.36	12.73	1.08
V. Coefficient %	69.79	7.98	23.93	4.98	16.37	18.20	58.23	6.58

EFL – Flamingo test, AP - Plate Tapping; FLT - Sit and Reach, SLU - Standing Broad Jump; DIM - Handgrip Test, RTA – Sit Ups in 30 seconds; MAT – Bent Arm Hang; 5x10 meter Shuttle Run

The first test aimed to evaluate the balance through the Flamingo test. The average of the penalties was 4.29, the minimum value 0, and the maximum 12 penalties. According to the scales realized on seven degrees of appreciation, 27% of young people registered between 3 and 4 penalties, 31% were above average, more precisely they had below 2 penalties, and 42% registered below average values, more precisely they had between 5-12 attempts to maintain their balance for one minute.

The second test evaluated the speed of the upper limbs through the Plate Tapping test. The average was 14.24 seconds, the minimum value was 11.96 seconds, the maximum was 18.03, and the data amplitude was 6.07 seconds. The coefficient of variability indicates a high homogeneity of the group. Following the achievement of the value intervals, it was found that 33% of the students had results between 14 and 15 seconds, thus obtaining the "average" rating. Only 17% of the students had results under 13 seconds, obtaining the "excellent" or "very good" rating.

The third test was aimed at assessing mobility through Sit and Reach test. The average of the results was 26.40 centimeters, the minimum value being 8 centimeters and the maximum value 40.5 centimeters. As we can see, 34% of young people have average results between 25 and 29 cm. Of the 172 young people, 7% registered values over 35 centimeters and obtaining "excellent" and "very good" rating, and 6% of the students registered values below 14 centimeters, which means a "very poor" score, that means they have a very low flexibility.

The fourth test evaluated the dynamic force of the legs. The average of the results was 157.71. The lowest result was 142, and the highest 177. The coefficient of variability indicates a high homogeneity of the group. It was found that no student obtained a higher raiting. Also 66% of students obtained the rating "poor" (results between 141-120), 28% obtained the rating "below average" (results between 161-170).

At the Handgrip, of the 172 young people, 74% obtained values greater than 30 kilograms, thus receiving the ratings "above average", "very good" and "excellent", 17% had average results between 26-29 kilograms, and 26% obtained below average results, having values below 25 kilograms.

At the Sit Ups in 30 seconds test, an average of 18.45 repetitions was calculated, the lowest result being 8 repetitions and the highest 27. Also, 33% of young people have average results, between 17-19 repetitions, 11% have very good and excellent results (over 23 repetitions), 28% have above average results (between 20 and 22 repetitions), and 28% have below average results, that means they have performed less than 14 repetitions.

At the Bent Arm Hang test, the students obtained an average of 21.86 seconds. The lowest result was 5.89 seconds and the best 58.90 seconds. It was found that 46% of the students had results between 11 and 18 seconds, obtaining the "poor" rating and 12% had results below 10 seconds, obtaining the "very poor" rating. Only 15% had "above average/good" scores, their results being over 35 seconds in this test.

At the 5x10 meter Shuttle Run, the average was 16.56 seconds, the lowest result being 20.84 seconds, and the highest 13.54 seconds. Following the achievement of the value ranges, it was found that 45% of the students achieved results around the average, 20% obtained results above the average and only 5% obtained very good or excellent results. Moreover, 30% of the young people had below average results.

Conclusions

Improving the quality of life of young people, who will soon have a well-defined role in the development of society, must be one of the objectives of each country with a well-defined vision for the future. The level of physical condition, the level of health status manifested on the physical, social and psychic level and the type of social relations depend on work performance, well-being, satisfaction and motivation.

After evaluating the students through eight tests for the physical condition it was found that the physical condition is very low. All the studies on movement have come to the conclusion that physical exercises play a role in improving the quality of life of people, in general and of health and physical condition in particular. When we talk about an increased quality of life, an optimal state of health, resistance to different endeavors, we say that we have a good physical condition.

The attitude of the students towards physical exercises, helps us to imagine about the level of the physical condition and the state of their physical and mental health. Epuran, M., (2005b, p.85) said that "there is no need for sociological research to find out what percentage of the country's population actually makes a favorable movement for its effects (...) it is enough to look at our families, friends, social groups of all kinds, in order to convince us of what is and is called "achinine", with its cortex of psychosomatic dysfunctions. "

References

- Bota, A. (2011). *Activități motrice de timp liber*, Editura Discobolul, București
- Chandler, T., Cronin, M., Vamplew, W. (2007). *Sport and physical education. The key concepts* (second edition), Routledge Taylor and Francis Group, London and New York
- Conseil de l'Europe, Comité pour le Développement du Sport, (1993). *Tests Européens d'aptitude physique*, Strasbourg

- Consiliul Europei, Comitetul pentru dezvoltarea sportului, (1996). *Semnificația sportului pentru sănătate, Vol. I, Impactul sportului asupra sănătății*, Traducere, C.C.P.S., București
- Consiliul Europei, Comitetul pentru dezvoltarea sportului, (1996). *Semnificația sportului pentru sănătate, Vol. II, Impactul sportului asupra socializării*, Traducere, C.C.P.S., București
- Cooper, K., H. (1982). *The Aerobics Program For Total Well –Being. Exercise, Diet, Emotional Balance*, M. Evans and Company, New York, United State of America
- Dragnea, A., Bota, A. (1999). *Teoria activităților motrice, Educație Fizică, Sport, Activități de Timp Liber, Kinetoterapie, Activități de Expresie Corporală*, Editura Didactică și Pedagogică, București
- Epuran, M. (2005). *Metodologia cercetării activităților corporale – Exerciții fizice, Sport, Fitness, (Ediția a 2-a)*, Editura FEST, București
- Epuran, M., 2005b, *Despre știința activităților corporale – teoria și filosofia lor*, București
- Kirk, D., Cook, C., Flintoff, A., McKenna, J. (2008). *Key concepts in sport and exercise sciences*, Sage Publications, London
- Macri, A., C. (2013). *Optimizarea condiției fizice și activitățile de loisir*, Editura Universitaria Craiova