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## REPORT ON THE LEVEL OF PHYSICAL ACTIVITY AMONG STUDENTS

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### Abstract

Regular physical activity is seen as a healthy component of lifestyle. Sport covers all forms of bodily activity that contribute to the physical well-being of the person, his mental balance and social interactions. Energy consumption associated with physical activity is the only discretionary component of total energy expenditure in everyday life.

*Objective.* The purpose of this study is to observe the level of total physical activity in a week, in young people in medical academia, in three categories of intensity: vigorous, moderate and low.

*Methods.* To determine this level of physical activity in the group of subjects concerned, this study used The International Physical Activity Questionnaire - short form with the three criteria of appreciation, being applied to a group of 200 students from UMF Carol Davila. The level of physical activity of the students was correlated with MET-min/week as a measure in the results generated according to the IPAQ criteria. The total physical activity of the students was determined according to the standards accepted by IPAQ.

*Results.* Following this study, it was found that students from the Faculty of General Medicine are the most active, boys are more active than girls and in the first 2 years of study (preclinical), students have a higher level of physical activity than those in the years clinics, where the level of physical activity is observed to decrease, 30% of them are almost inactive, about 1 in 3 students is inactive.

*Conclusions.* Nowadays, in the context of professional activities that are increasingly intense and tense, we must increase the importance of physical education as a means of optimizing the living regime, active rest, maintaining and increasing the working capacity of students throughout the period of study and after their completion.

*Keywords:* physical activity, students.

### Introduction

Regular physical activity is seen as a healthy component of lifestyle. From expert studies, it is clear that systematic physical activity is an effective preventive measure that supports the maintenance of physical health and psychological health. So, with changing social and economic patterns all over the world, sedentary lifestyles have become a worldwide phenomenon (Boon et al., 2010; Knuth et al., 2010).

According to recent statistics by the World Health Organization, insufficient physical activity is one of the ten major health risk factors (heart disease, diabetes and cancer); one in four adults is not physically active; more than 80% of adolescents exercise insufficiently; in only 56% of WHO Member States operate policies to stimulate physical activity in different population categories; WHO Member States have established that by 2025, they

will reduce by 10% the number of those who do not practice enough exercise, including separate strategies for this purpose (MTS, 2016).

At European level, according to the results of the latest Eurobarometer survey on sport and physical activity, 59% of European Union citizens never practice sports or rarely practice sports, while 41% practice sport at least once a week (Comisia Europeana, 2014).

In Romania, although there is motivation, 89% of young people consider that physical activities are important, according to a sociological study published on the website of the Ministry of Youth and Sport (MTS, 2014), however, this motivation, 'fails to translate into positive results, given that only 46% of young Romanians practice physical activities in their spare time (MTS, 2016).

Regarding the target subjects in this study,

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statistical data showed that according to a study on physical activity in medical students conducted in 2013 by Nitescu et al., overall, 16% of boys and 28% of girls had a low level of physical activity - both for moderate and high-intensity physical activity - compared to the recommendations of the World Health Organization. Another study of Czech university students (Vašíčková et al., 2008) showed that a large percentage of participating students met health-related recommendations for physical activity, a very positive result, and less than 20% of students had received recommendations for moderate physical activity.

To monitor trends and evaluate certain categories of the population or individual interventions aiming at increasing levels of physical activity, reliable and valid measures of habitual physical activity are essential (Lee et al., 2011).

The purpose of this study is to observe the level of total physical activity in a week, in young people in medical academic environment, in three categories of intensity: vigorous, moderate and low.

For all socio-professional categories, systematic physical activity must be an integral part of the lifestyle, given the many benefits arising from the practice of physical activities, but especially for young people in academic environment, taking into account their future profession. They must have an optimal level of physical activity to be prepared for an intense weekly schedule and this requires regular monitoring. To understand their benefits, they need to exercise and promote health through movement. Nowadays, more and more people should commit to physical activities every day of the week.

### Methods

Physical activity includes anybody movement produced by skeletal muscles that leads to a substantial increase in energy consumption compared to the rest period (rest). Within this concept, physical activity takes into account leisure activities, exercise, sports activities, various forms of travel (such as walking, cycling, climbing stairs), work activity and

household chores (Bouchard et al, 2007) or after Șerbescu (2007), physical activity can still be any body activity, leisure or not, resulting from the activity of the kinetic neuro-myo-artro apparatus, which leads to an increase in energy consumption compared to rest conditions. Thus, the energy consumption associated with physical activity is the only discretionary component of all energy expenditure in everyday life.

Over the past decade, scientists who have examined the effects of physical activity on health have tried to determine separately what level of physical activity is needed for a growing person, the level that is appropriate for an adult and the level needed for individuals reaching old age (Pastuszak et al, 2014).

An alternative, quantifiable way of expressing the level of the physical activity – more and more applied in comparing different populations – is The International Physical Activity Questionnaire (IPAQ).

In response to the global demand for comparable and valid measures of physical activity within and between countries, IPAQ was developed for surveillance activities and to guide policy development related to health-enhancing physical activity across various life domains. The scoring protocol was slightly revised in November 2005 and is now a combined protocol for both the long and the short form of the IPAQ instrument.

Thus, in order to determine the level of physical activity of the group of subjects, in this study was used IPAQ- short form with the three criteria of appreciation and its application and collection of the resulting information was carried out between November 2018 and March 2019 in accordance with the recommended methodology.

The study was carried out on a group of 200 students from UMF Carol Davila, of which 100 males and 100 females, from all years of study and from the faculties of General Medicine (134 subjects), Dental Medicine (20 subjects) and Pharmacy (46 subjects) (table 1).

**Table 1:** Description of the lot of subjects

| Total subjects | Gender |      | Faculties        |          |                 | Years of study |             |              |
|----------------|--------|------|------------------|----------|-----------------|----------------|-------------|--------------|
|                | Female | Male | General Medicine | Pharmacy | Dental Medicine | First Year     | Second Year | Years III-VI |
| No subj.       | 100    | 100  | 134              | 46       | 20              | 63             | 107         | 30           |
| %              | 50 %   | 50 % | 67 %             | 23 %     | 10 %            | 31.5%          | 53.5%       | 15%          |

The short self-administered form contains a number of 7 questions that evaluate physical activity (With a duration of at least 10 minutes) covering

different areas (transportation – movements from one place to another, occupation - activities at work, activities at home / work in the garden and leisure,

exercise and sports) during the last 7 days. Evaluate the frequency and duration (minimum 10 minutes) of vigorous activity, moderate activity and walking.

Participants also report the amount of time they spend sitting on a working day, which is not included in the physical activity analysis. Weekly time spent in vigorous activity, moderate activity and walking is determined by multiplying the frequency and duration reported within each activity category. The total weekly time in physical activity is calculated by summarizing the three categories of activities listed above (Dinger, 2006).

The level of physical activity of the students was quantified using MET-min/week as the measure in the IPAQ classification. Physical activity has been converted into metabolic equivalents for met work, according to the conversion factors applied in IPAQ.

The Metabolic Equivalent of Task or metabolic equivalent (MET – min/week) is a physiological measure expressing the energy cost of physical activities and is defined as the ratio of metabolic rate (and therefore the rate of energy consumption) during a specific physical activity to a reference metabolic rate, usually represented by resting metabolic rate. In this case, the variable MET – min/week expresses weekly metabolic engagement in walking, and in both moderate and vigorous physical activities practice. (Patterson, 2010)

### Results

Within this tool to assess the level of physical activity are proposed three levels (categories) of physical activity:

Category 1: Low - This is the lowest level of physical activity. Those individuals who not meet

criteria for categories 2 or 3 are considered low/inactive.

Category 2: Moderate - Any one of the following 3 criteria: 3 or more days of vigorous activity of at least 20 minutes per day or 5 or more days of moderate-intensity activity or walking of at least 30 minutes per day or 5 or more days of any combination of walking, moderate-intensity or vigorous intensity activities achieving a minimum of at least 600 MET-min/week.

Category 3: High - Any one of the following 2 criteria: Vigorous-intensity activity on at least 3 days and accumulating at least 1500 MET-minutes/week or 7 or more days of any combination of walking, moderate-intensity or vigorous intensity activities achieving a minimum of at least 3000 MET-minutes/week.

Continuous Score. This is suggested to be expressed as MET-min per week: MET level x minutes of activity x events per week (Patterson, 2010).

Thus, in our study we have the following results: Analysis of the results related to the total number of subjects:

As noted in Figure 1, moderate physical activities in a week are predominant, respectively half of the total subjects (52.5%) falling to this moderate level. This means that from the quantitative point of view of daily activities, the subjects are at normal parameters but to remember that this level must be maintained or improved. Only 9% of all subjects had a low, or even inactive, level of physical activity and 38.5% were very active in terms of energy consumption.

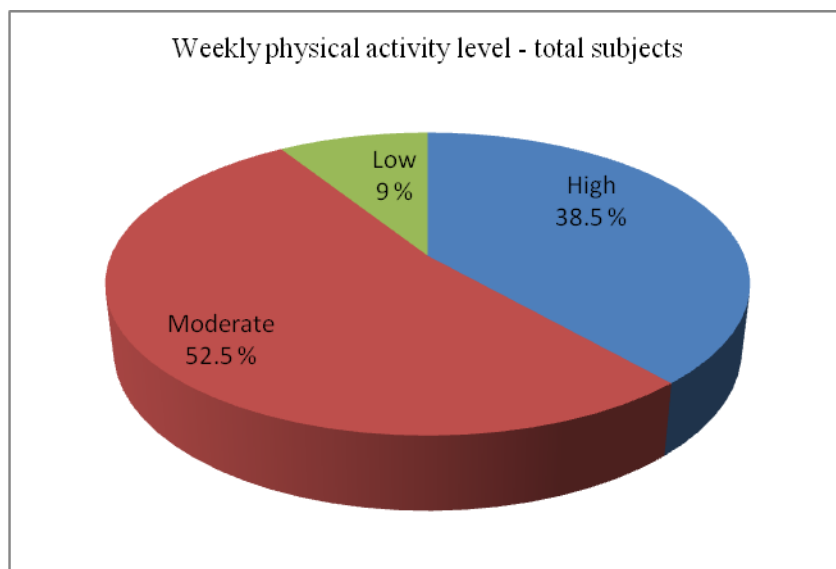


Figure 1: Percentage results on the 3 levels of physical activity relative to the total number of subjects

Analysis of results reported by genres:

In terms of the level of physical activities reported on students, it is found that the most active are boys, at least half of their total (1 out of 2 boys) practice weekly vigorous activities and only 5% of these (of

all boys), carry only low intensity activities compared to girls, at which the level of moderate activity prevails, with 61% of their total (of all girls) (figure 2).

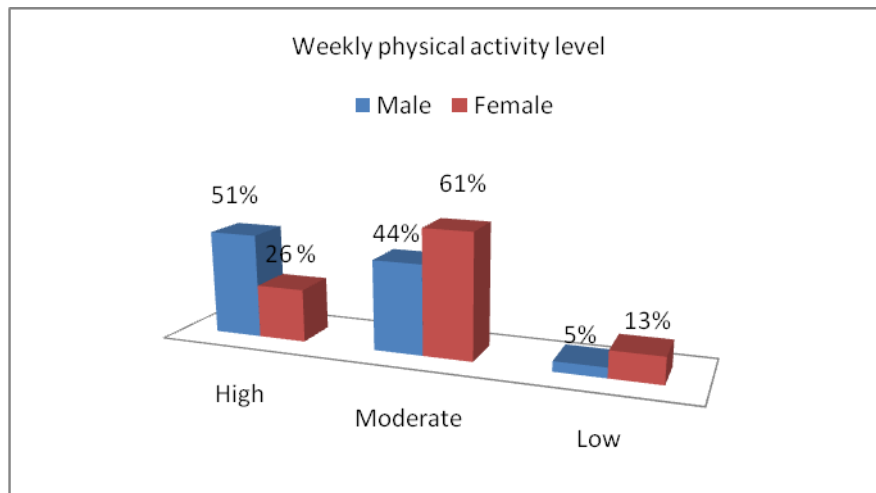


Figure 2: Percentage distribution of the 3 levels of physical activity by students

The analysis of the results reported on the number of subjects per faculties:

Comparing the percentage distribution on the 3 levels of physical activity to the total number of subjects per faculty is found that at all 3 faculties

predominate the level of moderate activity and it is noted a high percentage in terms of low physical activity (35%, the same as that of moderate physical activity) at the faculty of dental medicine (figure 3).

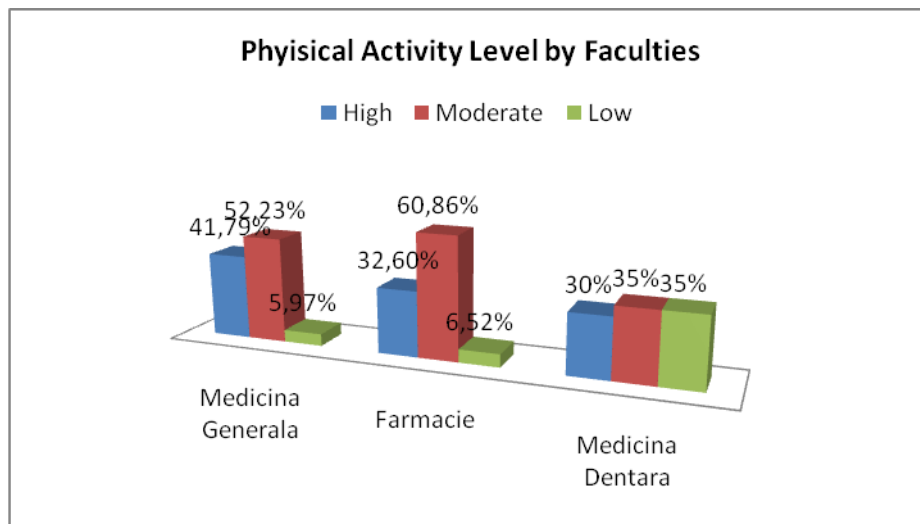


Figure 3: Percentage distribution of the 3 levels of physical activity by faculties

The analysis of the results reported on the number of subjects per year of study: .

Comparing the percentage distribution on the 3 levels of physical activity to the total number of subjects per year of study it is observed in figure 4

that also the highest and most balanced percentages are at the level of moderate physical activity at all years of study. Students in years I and II are the most active, 41.26% and 42.05% respectively of them with an increased level of activity and most students

inactive or with a low level of physical activity are those from years III – VI. This is also due to the fact that physical education and sport is compulsory only in the first two years of study.

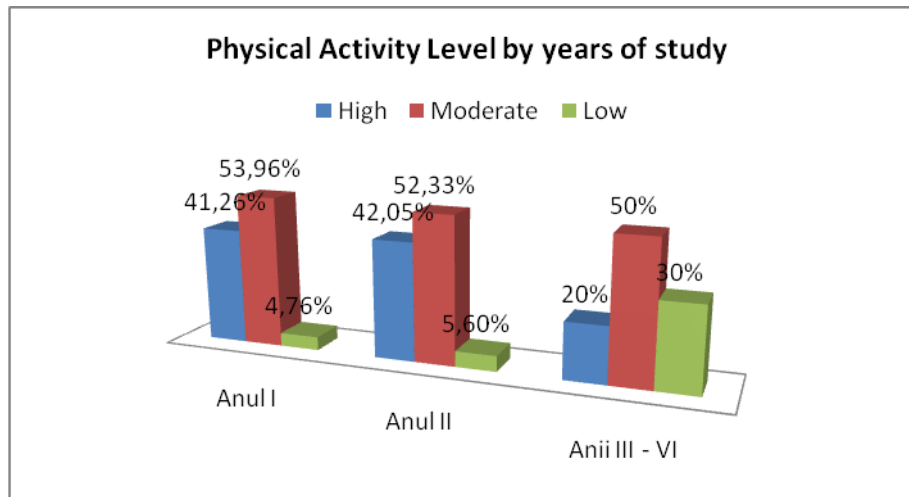


Figure 4: Percentage distribution of the 3 levels of physical activity by years of study

### Discussion

In conclusion, summarizing the information obtained, it is found that the students of the Faculty of General Medicine are the most active, the boys are more active than the girls and in the first 2 years of study (preclinical), the students have a higher level of physical activity than those in the clinical years, where it was observed that the level of physical activity decreases, 30% of them being almost inactive, about 1 in 3 students is inactive.

Therefore, the recommendations for each level are:

For high level: Daily physical activity is qualitatively and quantitatively appropriate: both intensity and duration of your daily physical activity fully meet the general guidelines for health. Remember, both daily physical activity and sedentary time are independently correlated with health.

For moderate level: It is important to pay attention to both time dedicated to physical activities of moderate intensity, which must not fall below 150 minutes per week, and time of inactivity, which must be kept below of 4 hours per day, even if this may not always be possible because of job characteristics. Both of these variables are independently, correlated with health.

For low level: Both quantity and quality of your daily physical activity need improvement. It should be dedicated 150 to 300 minutes per week to moderate

intensity physical activity to promote prevention of cardiometabolic diseases and some cancers.

In parallel, the time allocated to inactivity must be reduced. More than 7 hours per day of sedentary activity is associated with an increase of 60% in the risk of death, compared to those total less than 1. An optimal target is to maintain daily sedentary time below to 4 hours, even if this may not always be possible because of health and/or job characteristics.

Thus, following these conclusions, the recommendations and concerns of specialists should be directed towards finding solutions in improving the quantity and quality of daily physical activities in the students of these years, in the continuous awareness and education of students in this environment for the reorganization of their daily program according to their profession specific activities.

World Health Organization recommendations for adults aged 18 to 64 predict for at least 150 minutes of moderate physical activity or 75 minutes of high-intensity physical activity per week. Additional health benefits could be achieved by increasing the level of moderate physical activity to 300 minutes per week, or high-intensity physical activity to 150 minutes weekly.

Nowadays, in the context of professional activities that are increasingly intense and tense, must increase the importance of physical education as a means of optimizing the living regime, of active rest,



of maintaining and increasing the working capacity of students throughout the period of study and after their completion.

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