

Research Article

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Self-Assessment of Physical Activity and Health Capacity of Students

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Abstract: The compulsory part of the individual life is physical activity. The physical activity is important for maintenance health capacity. Physical activity includes various kinds of components: physical activity during the leisure time (during the week days and weekend days), physical activity at home and in working place and physical activity during the transference from home to other place. Intensity of the physical activity could also be various from low to moderate and till high. Respondent of study groups were partly time students from Riga Medical College (RMC), n = 41, and from Riga Teacher Training and Education Management Academy (RTTEMA), n = 37. Respondents were students of both genders aged from 19 years till 53 years. We have provided the assessment of the principal anthropometric characteristics (height and body mass) as well the anthropometric indices (body mass index (BMI)) and physical activity level questionnaire for students. Analysis of the data of physical activity questionnaire revealed that the average physical activity for students from RMC corresponded to low level of physical activity. The respondents from RRTEMA have moderate level of physical activity.

Keywords: students' physical activity level, students' anthropometric characteristics

Introduction

The positive consequence of the progress of our society is the individual life prolongation. The average life duration in 19th century was about 50 years, but in nowadays it increased till 70 -80 years. The population ageing process causes some health and welfare, social, functional sensory and cognitive dysfunctions that have serious influence on the psychemotional and physical state (Bras et al., 2011; Fairclough, Ridgers, 2010). The compulsory part of the individual life is physical activity. The physical activity is important for the maintenance of health capacity (Bula et al., 2010). World Health Organization (WHO) emphasized the positive role of physical activity for keeping good standard of health status and welfare (World Health Organization, 2013). Physical activity is characterized with the muscle work/contraction that provide motions and increases energy expenditure. Physical activity includes various kinds of components: physical activity during the leisure time (during the week days and weekend days), physical activity at home and in working place and physical activity during the transference from home to other place. The intensity level of physical activity can vary; it expands from low to moderate and till high level. Clinical specialists emphasize, that high risk of widespread pathologies such as cardiovascular diseases are connected with low level of physical activity in nowadays (Moreno et al., 2011; Ruiz, 2011; Veira et al., 2011);. The morbidity of cardiovascular diseases in Latvia was about 54 % (HEC, 2010). The life style in modern society causes hypokinetic problems. The incidents of cardiac ischemic disease, rectum pathologies and

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diabetes increased. According the data of WHO, about 18% of population has sitting life style, deficiency of physical activity in leisure time that increased with the age (WHO, 2013). According to the regulation of WHO, the optimal duration of physical activity for individual should be not less than 150 min per week, if it is moderate, or not less than 60 min per week, if it is intensive. According the data of the Central Statistical Bureau (Latvia), about half of respondents (47, 9%) assessed the health status as good or very good, but about 34 (7%) of respondents pointed chronically illness or long-standing sickness (HEC, 2010). Many of the habits of healthy lifestyle and behaviours are developed during the professional education period in gymnasium, in high school and at university (Grinberga et al., 2014; Porozovs, 2010; Sunite, Kasalis, 2012). Sufficient physical activity during that period have input for future life quality and health standard. The physical working capacities are based on the physical health, physical development level, physical activity and healthy lifestyle. The aim of study is to evaluate the principle anthropometric characteristics and provide analysis of the students' physical activity levels.

Material and Methods

Our experimental respondent groups included partly time students from Riga Medical College (RMC) ($n = 41$) and Riga Teacher Training and Education Management Academy (RTTEMA), $n = 37$. Respondents were students of both genders aged from 19 till 53 years. We have provided assessment of the principal anthropometric characteristics (height and body mass) as well the anthropometric indices (body mass index (BMI)) and physical activity level questionnaire for students (Виленский, Ильинский, 1987). The physical activity questionnaire includes positions that allow us to collect information about physical (sport's) activity in leisure time and physical activity at home and at the working place. We have included the questions related to health problems (diseases (cardiovascular, respiratory, gastrointestinal), trauma ect.) and the duration of medical incapability (days per year). The data of questionnaire were evaluated according to the scale (in points) and categorize respondents into subgroups according to the levels of physical activity (low, moderate and good or high).

Results and Discussion

Analysis of the main anthropometric characteristics of respondents group from RMC and RTTEMA has shown that the height parameters in respondents groups have not shown any difference. The average data of height for students (female) from RMC were 167.1 ± 0.9 cm, and the average data of height for students from RTTEMA was 167.8 ± 1.3 cm (see Fig. 1). The average data of height in the respondents (male) group from RTTEMA was 180.6 ± 1.3 cm, but the average height parameters in the students (male) group from RMC was 175.0 ± 4.3 cm (see Fig. 2).

The absolute values of body mass characteristics have variations in wide interval for all respondents groups. The body mass for female respondent from RMC is about 13% higher than that for students from RTTEMA. The average body mass in the female students from RMC was 76.9 ± 2.7 kg with variation between 50 and 120 kg. We have determined that for students female from RTTEMA, the average level of the body mass was 67.8 ± 2.2 kg, with individual variation from 50 till 90 kg (see Fig. 1). Analysis of anthropometric data of respondents – students (male) – shows that the average value of body mass for the students group from RTTEMA was 85.9 ± 3.2 kg with the wide interval of individual changes from 62 to 105 kg, which is very closely that for the students from RMC, 84.0 ± 1.4 kg with variations from 65 till 107 kg (see Fig. 2).

We have evaluated the levels of anthropometric indices BMI in the respondents groups. The average value of BMI in the respondent group (female) from RMC was 26.9 ± 0.8 . About 40.5% of respondents has body mass that corresponds to the standards of BMI (18.5 – 24.9).

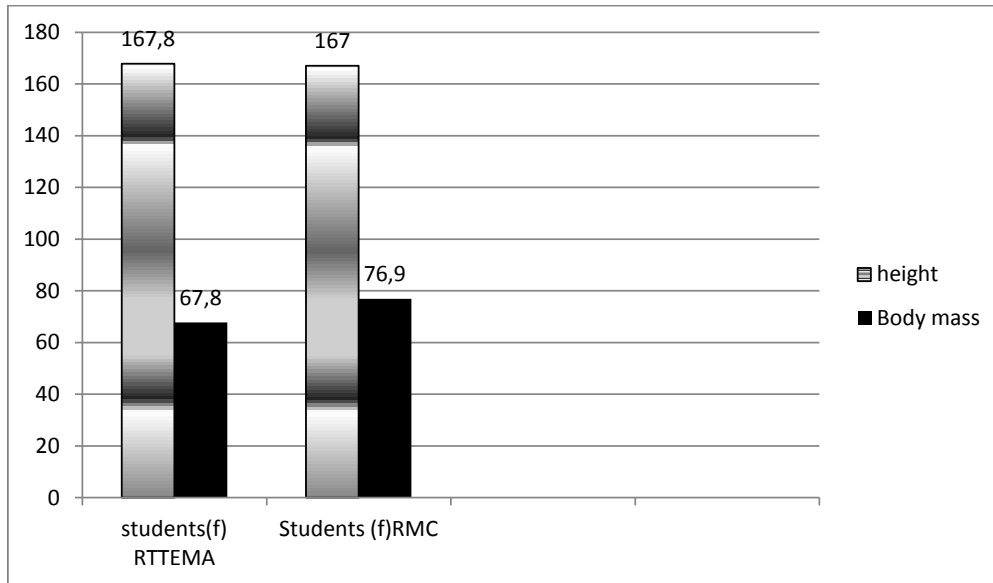


Figure 1. Distribution of average value of height and body mass in students – female groups

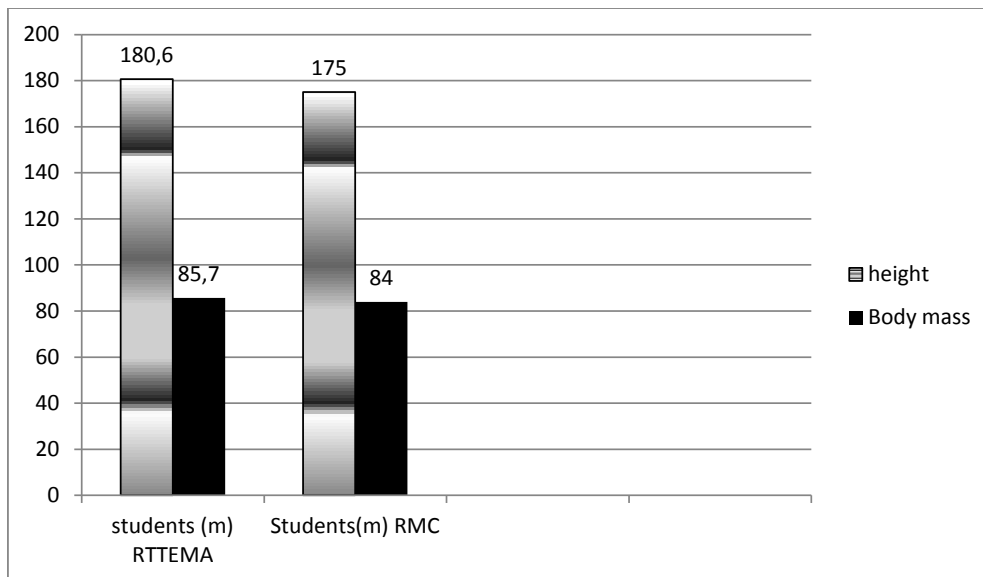


Figure 2. Distribution of average value of height and body mass in students – male groups

The tendency of overweight was determined for more than one-third (35%) of female respondents. The problems of adiposity were fixed for 24.3% of respondents from students group in RMC. The situation was different in RTTEMA respondents group (female). The average BMI was 23.9 ± 0.9 . The BMI according to the standards has about 53.6% in two-third of the respondents. The overweight problem or the tendency to overweight was determined for 9% of respondents from RTTEMA, but the adiposity was found for 22.7% of them (see Fig. 3). There are small differences in average value of BMI in male students from RTTEMA and RMC. The average value of BMI in male students from RTTEMA was 26.7 ± 0.8 and for those from RMC was 27.3 ± 1.7 (see Fig. 4).

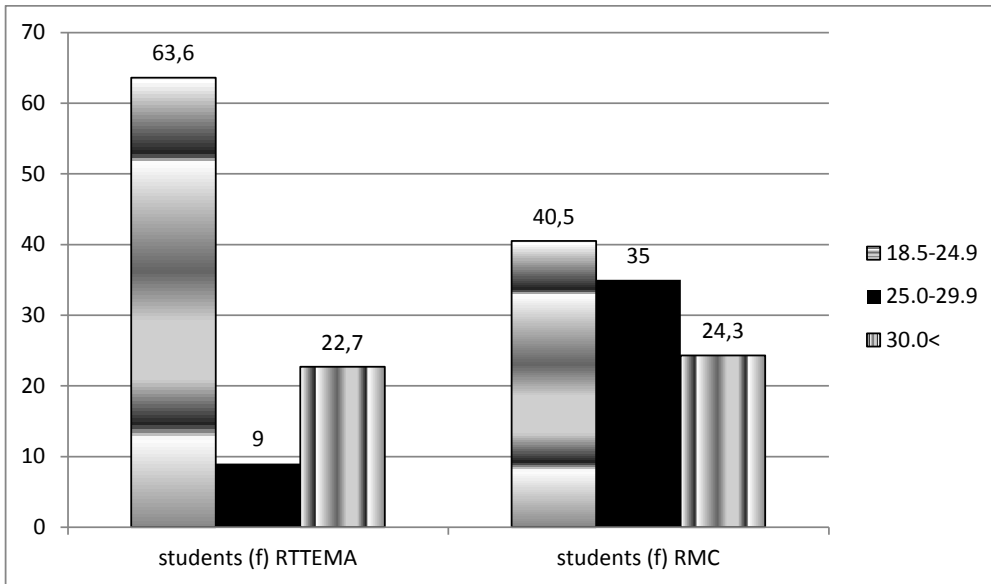


Figure 3. Distribution of body mass index value in students – female groups

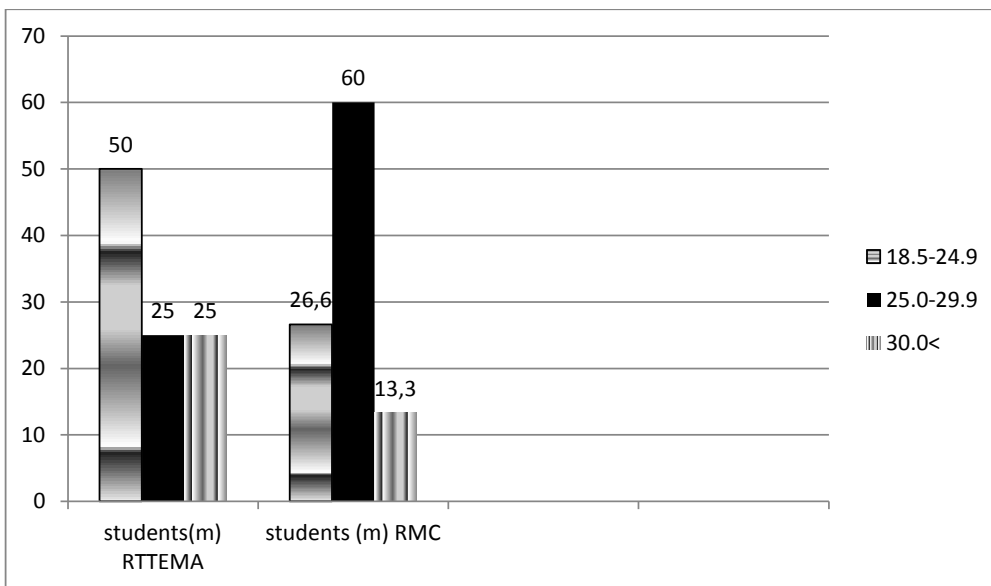


Figure 4. Distribution of body mass index value in students – male groups

The average level of physical activity for students (female) from RMC is assessed as low level (28.1±2.9). The level of physical activity for students from RRTMA corresponded to the moderate level (34.3 ±2.4).

The number of respondents with moderate level of physical activity from RMC (22.7%) was two times less than those from RTTEMA (45.9%).

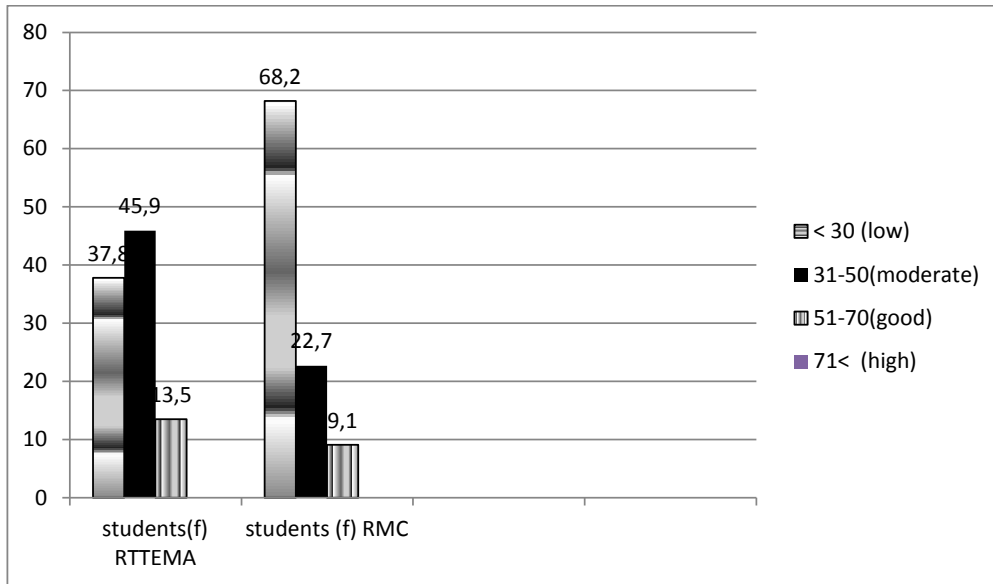


Figure 5. Distribution of female students to various physical activity levels groups

From the results of the questionnaire, the average level of physical activity in the male students from RTTEMA was 37.9 ± 6.4 , which corresponded to the moderate level of physical activity. About 46.7% of respondents – male students – had moderate level of physical activity, but 33.3% of the students were evaluated to have low level of activity and 20% of male students have good and high level of physical activity. The assessment of physical activity level for male students from RMC get lower assessment. About 50% of male students have low level of physical activity and 50% of male students have moderate level of physical activity. Low level of the physical activities depended and connected with administrative, organizing, economic and financial reasons of study process (see Fig. 6).

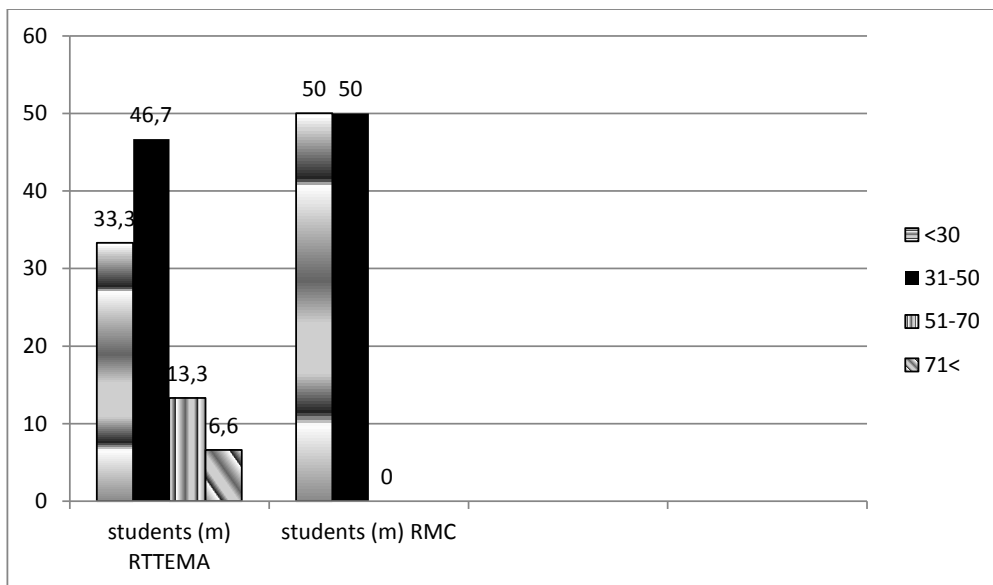


Figure 6. Distribution of male students to various groups based on the level of physical activity

Conclusion

1. The average value of the height parameters for female students in the examined group from RTTEMA and RMC was 167.4 ± 0.7 cm and that for male students was 178.0 ± 1.7 cm. The individual variations of the height were in the interval between 158 till 183 cm for female and from 165 till 192 cm for male.
2. The average value of BMI for female students from RMC (26.9 ± 0.7) was higher than for those from RTTEMA ($23.9 \pm .9$). The numbers of individuals with the low level of BMI is two times higher in students group (with the high level of physical activity). The problem of overweight was fixed in 9% of female respondents from RTTEMA, and the 1st adiposity level was fixed for 22.6% of female respondent. About 35% of female students have the problem of overweight, and the 1st adiposity level was fixed for 24.3% of respondents from RMC.
3. The average value of BMI for female students was 21.72. The average value of BMI for male students from RTTEMA was 26.7 ± 0.8 kg and RMC was 27.3 ± 1.7 kg. The BMI in standard interval was found for 26.6% of male students from RTTEMA and 50% of respondents (male) from RMC. The overweight problem was fixed in 60% of male students from RTTEMA and 25% of those from RMC.
4. The analysis of the data of physical activity questionnaire for students from RMC revealed that the average physical activity for female students as well as for male students is corresponded to low level of physical activity. But the level of physical activity of respondents – both female and male students – from RTTEMA was the moderate.

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