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## ASSESSMENT OF CORRESPONDENCE OF PERSONAL SELF-EVALUATION OF HEALTH LEVEL TO ACTUAL HEALTH LEVEL OF YOUNG MALES AND FEMALES EXAMINED

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Author contribution: A – study design; B – data collection;  
C – statistical inference; D – manuscript production.

### Abstract

*Aim* – to determine how corresponding personal self-evaluation of health level of young males and females is to their actual health level.

*Materials.* The survey was conducted for self-evaluation of health level (scaled self-evaluation of health level «Thermometer»). 22 senior school students have taken part in the survey. Rapid assessment of health has been held according to the methods of Apanasenko H.L. The fitness level of senior school students was being determined based on results of motion tests: «60 m race», «standing long jump», «sit-up in 30 sec» та «throwing a tennis ball to a range».

*Results.* Based on the research findings, self-evaluation of health level of young males and females is inadequate – overstated. By the results of self-evaluation young males and females have the health level higher than average; still, health indicator received experimentally corresponds to an ordinary health level – unstable state turning into illness after the smallest effect.

*Conclusions.* Using the methods of Apanasenko H.L. to assess health level it was established that 50 % of young males and females have an average health level, 27 % – a low one, 9 % – respectively lower and higher than average, and only 5 % – a high one. Based on the research findings, self-evaluation of health level of young males and females is inadequate – overstated.

**Key words:** senior school students, health level, personal self-evaluation of health level.

### Introduction

According to the data from a number of researchers, the health of the population of Ukraine has recently deteriorated essentially [6, 7, 13]. Upon that, the crucial factor determining the health level of each particular person is their lifestyle, preferably a healthy one [5, 11, 18]. Meanwhile, whether a person leads a healthy lifestyle greatly depends on personal psychological peculiarities and less on presence or absence of external conditions [2, 12, 17]. Fairness of self-evaluation of health by a person is one of the factors determining formation of need to take care of one's health and lead a healthy lifestyle [1, 4].

Thus, *the aim* of our work is to determine the degree of correspondence of personal self-

evaluation of health level to actual health level of young males and females.

### Methods

The methods were used in research: theoretical analysis and generalization of data from specific literature; sociologic methods (survey); method of determination of health level; pedagogical methods (pedagogical examination and testing); methods of statistical data processing.

The survey was conducted for self-evaluation of health level. 22 senior school students have taken part in the survey. «Thermometer» is a scaled self-evaluation of health level. The students were proposed the lines depicting continuity of health level from absolutely bad to ideal one, where they had to mark

the worst health state they experienced; the best health state they experienced; the health state at the exact moment as he (she) personally estimates it.

Rapid assessment of health according to the methods of Apanasenko H.L. [19]. To determine health level we examined: height, weight, lung capacity, wrist strength, resting heart rate, resting arterial blood pressure and time needed to stabilize heart rate after performing 20 sit-ups in 30 sec. Further the following indexes included in the health profile were evaluated:

1. Quetelet body mass index (BMI) – a value derived from the mass (weight) and height of a person, measured in g / cm;
2. Vital capacity index – a value derived from the lung capacity and mass (weight) of a person (lung capacity / weight) (ml / kg);
3. Wrist-force index – wrist-force (kg) / weight (kg) \* 100%;
4. Robinson index – heart rate\*ABP/100;
5. Time needed to stabilize heart rate after performing 20 sit-ups in 30 sec (min).

According to the sum of the indexes mentioned above, the students were divided due to health levels: low, lower than average, average, higher than average, high. Assessment of health level is the following: low level – 4 and less points, lower than average – 5-9 points, average – 10-13 points, higher than average – 14-16 points, high level – 17 and more points.

The fitness level of senior school students was determined according to the results of motion tests:

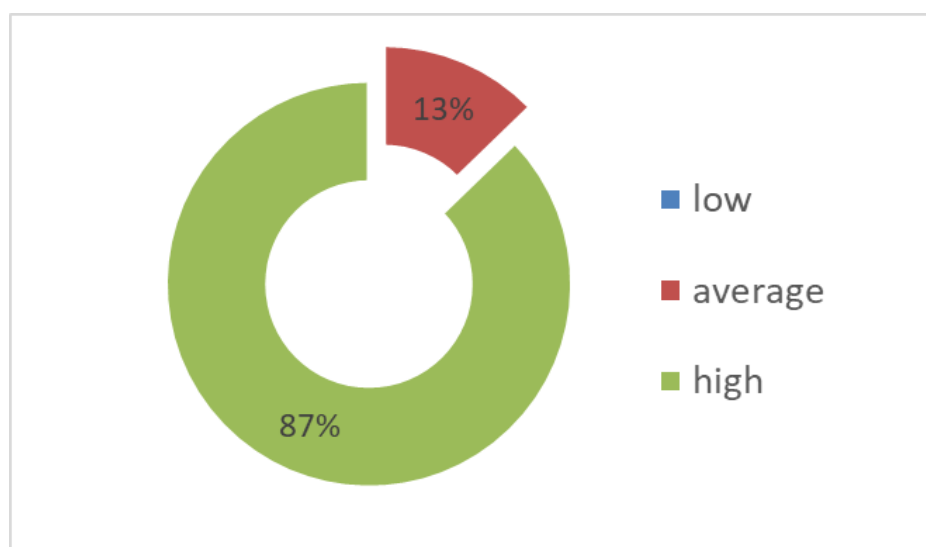
«60 m race», «standing long jump», «sit-up in 30 sec» та «throwing a tennis ball to a range».

## Results and discussion

Success in health improvement of a person greatly depends on understanding the essence of health, factors and processes forming this state. Refining the essence of individual health will allow solving the issues on ways and opportunities of improving a person's health [6, 18].

Health is not given for the whole life, it is not constant or eternal, and it needs continued focus. In a living body the processes of synthesis and dissimilation take place continuously, our body structure is being constantly regenerated. These processes, being in a state of relational balance, provide vital functions and regeneration of energy and anatomic resources of organism. Irritants of external and internal environment can boost or hinder particular vital activities causing changes in balance between them [3, 14].

Based on the results of the survey, for 41 % of the senior school students examined the worst health state experienced corresponded to average level, 41 % – low level, and 18 % – high level. Based on the results of the survey, for 14 % of the senior school students examined the best health state experienced corresponded to average level, 4 % – low level, 82 % – high level. Based on the results of the survey, 18 % of the senior school students examined had the actual health state corresponding to average level, and 82 % – high level (pic. 1).



Pic. 1. Personal evaluation of actual health state among the senior school students examined (according to the results of survey, n=22)



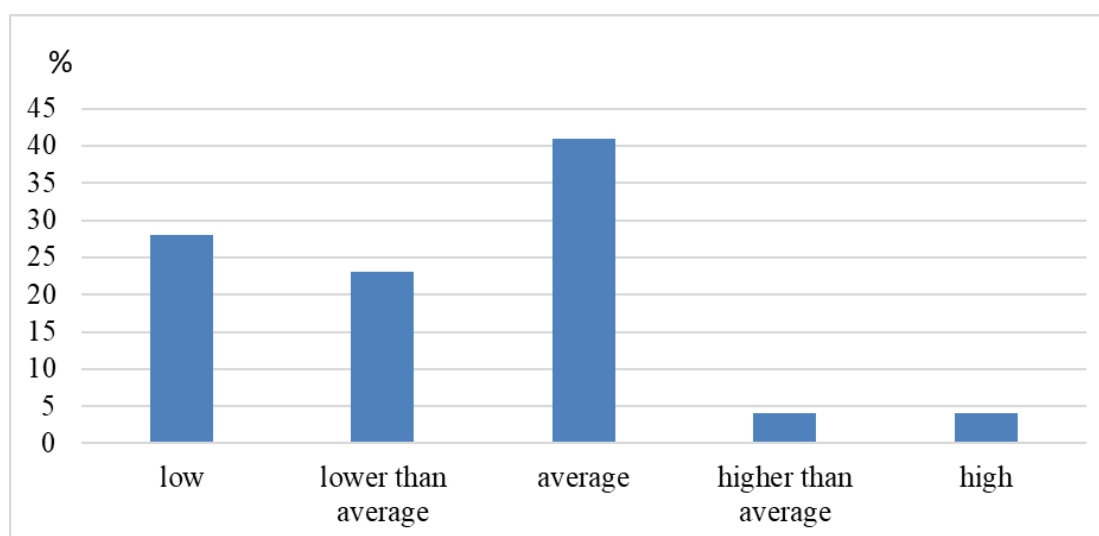
Assessment of health level was implemented according to the methods of Apanasenko H.L. To determine health level we examined: height, weight, lung capacity, wrist strength, resting heart rate, resting arterial blood pressure and time needed to stabilize heart rate after performing 20 sit-ups in 30 sec.

Further the following indexes included in the health profile were evaluated: Quetelet body mass index (BMI), vital capacity index, wrist-force index, Robinson index, and time needed to stabilize heart rate after performing 20 sit-ups in 30 sec (min).

Thus, based on the research findings, 27 % of young males and females had a low health level, 9 % had a level lower than average, 50 % – average level, 9 % – higher than average, 5 % – high level.

The fitness level of senior school students was determined according to the results of motion tests: «60 m race», «standing long jump», «sit-up in 30 sec» та «throwing a tennis ball to a range».

The results of the pedagogical experiment have revealed an overall low fitness level: 28 % of the students had low level, 23 % – lower than average, 41 % – average, 4 % – higher than average, and 4 % of the students examined had high level (pic. 2).



Pic. 2. Fitness level of the senior school students examined (based on the results of testing, n=22)

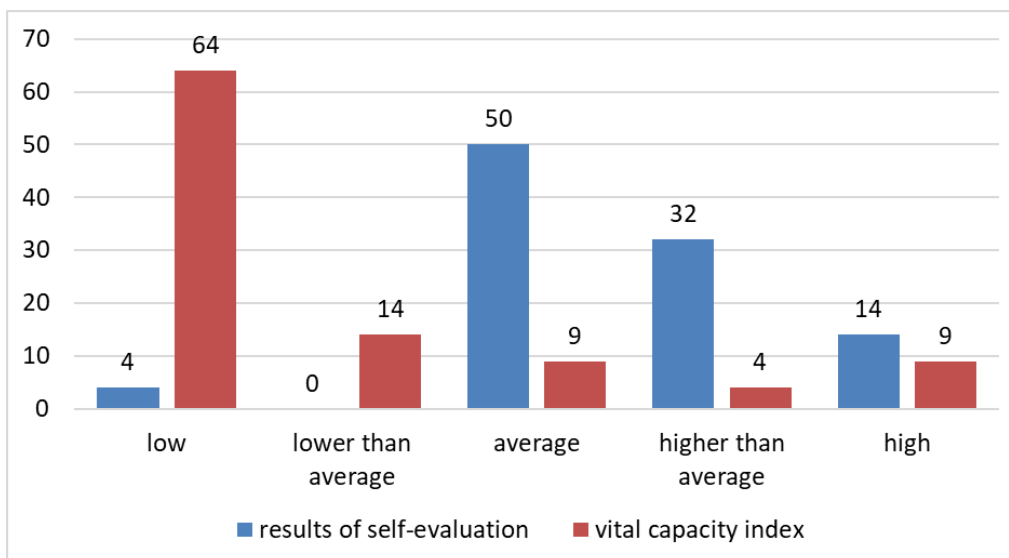
Thus, based on the results of examination and testing, it was revealed that most of young males and females have average health level and average fitness level.

Physical activity of a person is impossible without a certain number of motion qualities. The main of them are strength abilities. Without producing muscle strength it is impossible to perform any physical exercise. Their combination and conditions of production determine success both for each separate move and the whole motion activity. The action aimed at the process of forming these skills built correct methodologically is an important factor to provide functioning and achievement of high results in different forms of person's motion activity, and in sports, in particular [8, 16, 20].

The problem of studying and controlling of a person's strength indexes is not new, though it does not lose its relevance through years. It is

explained by both energy fund and functional state of organs and systems of organism being dependent on peculiarities of functioning of skeletal muscles. Those muscles taking part in efforts of motor apparatus connected with support of upright posture develop faster [15].

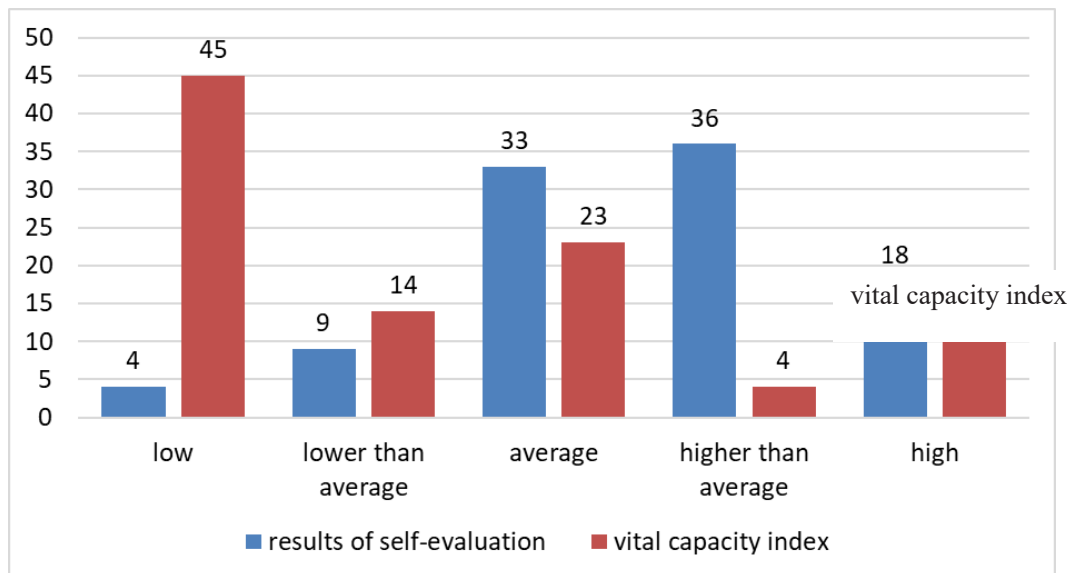
Wrist-force index shows the force level of wrist flexors depending on body mass. The results of self-evaluation showed that senior school students personally assess their wrist-force level of development as follows 4 % – low, 0 % – lower than average, 50 % – average, 32 % – higher than average, 14 % – high. Instead, determination of wrist-force level of development according to the wrist-force index shows that most students – 64 % – have low indicator of wrist-force index, 14 % – lower than average, 9 % – respectively average and high levels, and only 4 % – higher than average (pic. 3).



Pic. 3. Comparative analysis of personal (self-evaluation based on the results of survey) and impersonal (based on calculation of wrist-force index) assessment of wrist-force level of development among the senior school students examined (n=22)

Based on the results of self-evaluation, it was determined that senior school students personally assess their respiratory system as follows: 4 % – low, 9 % – lower than average, 33 % – average, 36 % – higher than average, and

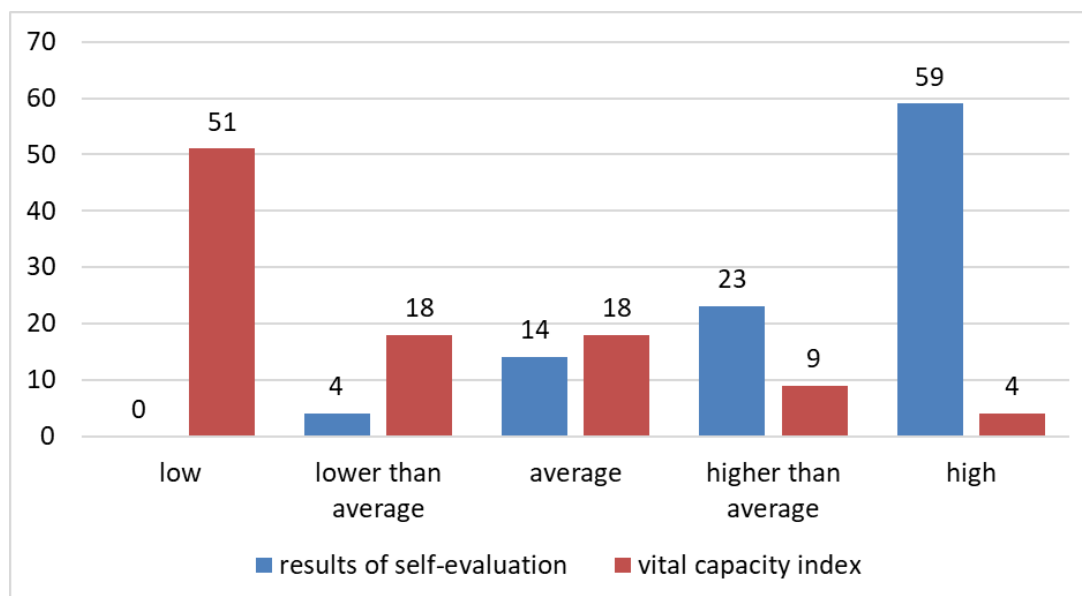
18 % – high. Instead, assessing vital capacity index we have got the following results: 45 % had low level, 14 % – respectively lower than average and high, 23 % – average, and 4 % – higher than average (pic. 4).



Pic. 4. Comparative analysis of personal (self-evaluation based on the results of survey) and impersonal (based on calculation of vital capacity index) assessment of respiratory system state among the senior school students examined (n=22)

The indicators of Robinson index show the state of cardiovascular system and motion activity of young males and females. Based on the results of the survey, it was determined that senior school students personally assess their state of cardiovascular system as follows: 0 % – low, 4 % – lower than average, 14 % – average,

23 % – higher than average, 59 % – high. However, according to the figures of Robinson index, we have got the following data: 51 % of students have low level of cardiovascular system functioning, 18 % – lower than average and average, respectively, 9 % – higher than average, and 4 % – high (pic. 5).

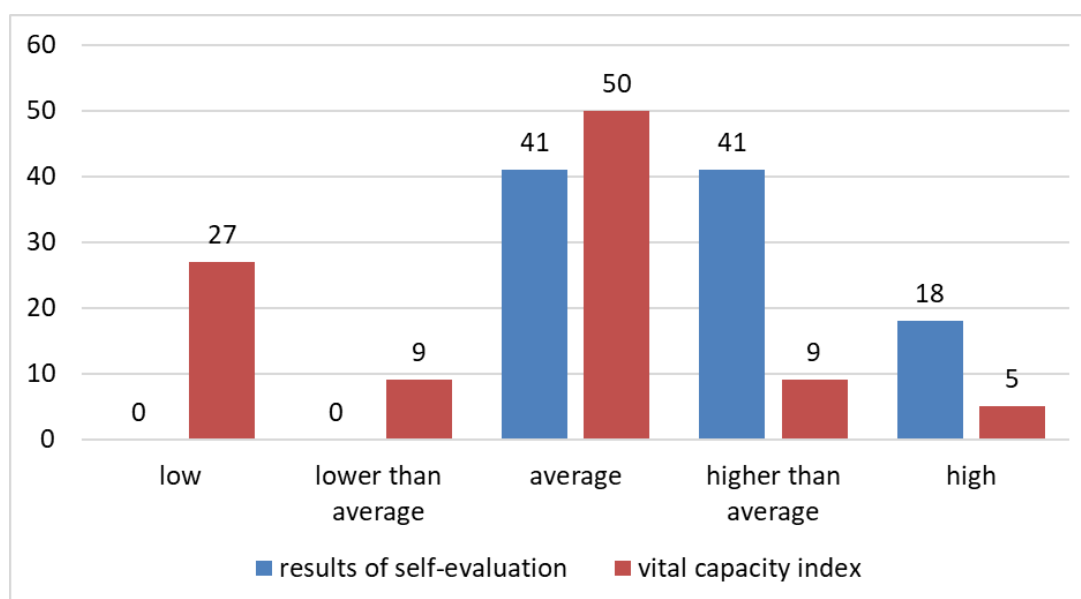


Pic. 5. Comparative analysis of personal (self-evaluation based on the results of survey) and impersonal (based on calculation of Robinson index) assessment of cardiovascular system state among the senior school students examined (n=22)

Physical (somatic) health shows actual state of organs and systems of organs of a human body; the level of their development and functional capacities, the level of adaptation to different factors of the environment. It is a fundamental of pyramid system of structural organization of a person. Physical health is a state of an organism when indicators of the main physiological systems fall within the range of physiological standard and change adequately when a person is interacting with the environment

[18, 19]. The fundamental of physical health is a biological program of individual development of a person, mediated by basic needs (nutrition, breathing, motion, environment perception, sexual delight, etc), dominating at different stages of life [9, 10].

The results of the survey show that senior school students personally assess their physical health level as follows: 41 % – average, 41 % – higher than average, 18 % – high (pic. 6).



Pic. 6. Comparative analysis of personal (self-evaluation based on the results of survey) and impersonal (according to the methods of Apanasenko H.L.) assessment of the level of physical health among the senior school students examined (n=22)



Whilst nobody of students assessed their physical state as low or lower than average. But evaluating the level of physical health according to the methods of Apanasenko H.L. it was determined that 50 % of young males and females have average level of physical health, 27 % – low, 9 % – lower than average and higher than average, respectively, and 5 % – high.

We have confirmed the results of the authors' research [3, 8, 9] that in most cases Ukrainian youth has low level of physical health or lower than average, low level of cardiovascular and respiratory systems functioning. Also we have extended the data [1, 9, 13] about quantitative characteristics of cardiovascular and respiratory systems of young males and females as well as about the level of fitness contemporary youth has.

### Conclusions

The results of the survey show that senior school students personally assess their level of

physical health as average and higher than average – 41 %, respectively. Whilst nobody of students assessed their physical state as low or lower than average. But evaluating the level of physical health according to the methods of Apanasenko H.L. it was determined that 50 % of young males and females have average level of physical health, 27 % – low, 9 % – lower than average and higher than average, respectively, and 5 % – high. Based on the research findings, self-evaluation of health level of young males and females is inadequate – overstated. By the results of self-evaluation young males and females have the health level higher than average; still, health indicator received experimentally corresponds to an ordinary health level – unstable state turning into illness after the smallest effect.

### Conflict of interests

The authors claim no conflict of interests.

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