

## The comparison of the physical activity level in young adults assessed with measuring tools and subjective self-assessment

Joanna Popiolek<sup>1</sup>, Monika Kusz<sup>2</sup>, Adam Alzubedi<sup>3</sup>, Michał Konopelko<sup>4</sup>

<sup>1</sup>Department of Cardiology, Cardinal Wyszyński Hospital in Lublin

<sup>2</sup>Department of Pediatric Nephrology, Medical University of Lublin

<sup>3</sup>Department of General and Transplant Surgery and Nutritional Treatment, Medical University of Lublin

<sup>4</sup>Chair and Department of Hygiene, Medical University of Lublin

### Address for correspondence:

Joanna Popiolek, Department of Cardiology, 100 Krasnicka Al., 20-718 Lublin, Poland, phone:

+48 81 537 47 40

e-mail: [popiolek8@gmail.com](mailto:popiolek8@gmail.com)

### Abstract

Daily physical activity is one of many factors determining health. World Health Organization (WHO) recommends regular moderate physical activity for people of all ages. The aim of this study was to compare the classified level of physical activity of young adults with their subjective self-assessment.

The study group consisted of 42 people aged 20-24 years, on average 21.5 years. 62% (26 people) were women, and 38% (32 people) were men. Data was obtained using a paper questionnaire based on the International Physical Activity Questionnaire (IPAQ). The respondents were

asked about their physical activity during the week and their own assessment of their level of physical activity.

52.38% of respondents reported that they regularly exercise. Men do it more often (75% of men) and women less often (38.46% of women). 80.95% considered their own level of physical activity as sufficient, 9.22% as high, and 9.52% as insufficient. At the same time, based on the IPAQ calculation, 42.86% respondents represented a sufficient level of physical activity, 38.10% high, and 19.05% insufficient. The average level of activity was 1668,57 MET-min/week, which according to the IPAQ classification means a high level of physical activity. In summary, young adults represent high levels of physical activity. The study showed that they tend to under- and overestimate their level of physical activity, whereas the underestimation is more common.

**Key words:** physical activity, IPAQ, exercise, young adults' health

## **Introduction**

Daily physical activity is one of many factors determining individual health. Numerous studies indicate the positive effect of daily exercises on reducing the risk of chronic diseases [1] such as diabetes, obesity [2], cardiovascular diseases [3] or even mental disorders [4, 5]. Therefore, WHO recommends regular moderate physical activity to people of all ages. What is more, many national societies suggest the lowest recommended dose of 150 minutes of moderate or 75 minutes of intensive physical activity per week [2, 6, 7]. A sedentary lifestyle and excessive working time are not conducive to the physical activity of young people. At the same time, despite their education, they are often not aware of the consequences of a low level of physical activity [7, 8].

## **Purpose of work**

The aim of this study was to compare the classified level of physical activity of young adults with their subjective self-assessment. It could be helpful in diagnosing problems that are responsible for worsening condition of young adults' health.

## Material and methods

The study group consisted of 42 people aged 20-24 years, on average 21.5 years. 62% percent (26 people) were women, and 38% (32 people) were men.

The study was conducted using a written questionnaire. Questions have been created on the basis of the International Physical Activity Questionnaire (IPAQ) [9]. IPAQ is a widely used tool of the assessment of the level of physical activity. It has been proven that the short version of IPAQ gives equally reliable results compared to the long version, and at the same time is simpler to use [10, 11]. Overall, IPAQ is a cheap, simple and reliable tool to assess the level of physical activity. Questions in both, the short and long, versions refer to the last seven days. In the long version, the types of physical activity are divided into those performed at home, at work and during leisure time. The examined person describes the type and duration of moderate and intense physical efforts during this period. The average level of physical activity in MET-min/week can be calculated from the given responses. In the case of moderate efforts, every minute of activity during the day is multiplied by the index 4 and then referred to 7 days. The same applies to intensive efforts, but the index is 8 respectively. Depending on the result obtained, the level of physical activity can be assessed as sufficient, high or insufficient. The high score criterion is over 1,500 MET-min/week of intense physical activity. Insufficient result means less than 600 MET-min/week [9].

The created questionnaire contained questions based on IPAQ. They related to the type of physical activity and their duration during the week. In addition, the subjects were asked about their own assessment of their level of physical activity. They had one answer to choose between: high, satisfactory, or unsatisfactory. On the basis of the obtained answers, the average level of physical activity of each person was calculated by the procedure described above and then compared with the subjective assessment.

## Results

52.38% of respondents reported that they regularly play sports. Men do it more often (75% of them) and women less often (38.46% of them). 80.95% of the examined subjects considered their level of physical activity as sufficient, 9.52% as high, and 9.52% as insufficient. In this area, the differences between the sexes are also noticeable. Among men, 62.5% rated their level of physical activity as sufficient, 25% as high, and only 7.69% as poor. At the same time 92.31% of women assessed it as sufficient, none of them has chosen an answer *high*, and 12.5% assessed it as insufficient. The results are shown in Table 1.

**Tab. 1. Subjective assessment of the level of physical activity**

|                 | High level       |         | Sufficient level |         | Insufficient level |         |
|-----------------|------------------|---------|------------------|---------|--------------------|---------|
|                 | number of people | Percent | number of people | Percent | number of people   | Percent |
| Women           | 0                | 0,00%   | 24               | 92.31%  | 2                  | 7.69%   |
| Men             | 4                | 25.00%  | 10               | 62.50%  | 2                  | 12.50%  |
| <b>TOGETHER</b> | 4                | 9.52%   | 34               | 80.95%  | 4                  | 9.52%   |

On the basis of the IPAQ, the calculation based on the respondents' answers was performed. 42.86% of respondents show a sufficient level of physical activity, 38.10% high, and 19.05% insufficient. 12.5% of men achieved a satisfactory result, 62.5% high and 25% insufficient level of physical activity. 61.54% of women received a satisfactory grade, 23.08% high and 15.38% insufficient. The results are presented in tab. 2.

**Tab. 2 A level of physical activity calculated with IPAQ**

|                 | High level       |         | Sufficient level |         | Insufficient level |         |
|-----------------|------------------|---------|------------------|---------|--------------------|---------|
|                 | number of people | Percent | number of people | Percent | number of people   | Percent |
| Women           | 6                | 23.08%  | 16               | 61.54%  | 4                  | 15.38%  |
| Men             | 10               | 62.50%  | 2                | 12.50%  | 4                  | 25.00%  |
| <b>TOGETHER</b> | 16               | 38.10%  | 18               | 42.86%  | 8                  | 19.05%  |

The average level of physical activity was 1668,57 MET-min/week (intensive efforts), which according to the IPAQ classification means a high level of physical activity. In the case of men it was 2520,00 MET-min/week, and women 1144,62 MET-min/week.

In the next step of the research, the results obtained by IPAQ and the subjective assessment of the respondents were compared. The difference between the number (percentage of the group) of people with a given result and the number (percentage of the group) of persons declaring a given level of physical activity was calculated. The obtained results are presented in Table 3. The results show that by 38.09% fewer people (16 subjects) obtained, according to IPAQ, a sufficient level of physical activity in relation to the declared level. Gender differences included

50% less men (8 people) and 30.77% women (8 people). At the same time, the IPAQ assessment of the level of physical activity as high took place in 28.58% of people (12 people) in relation to the declared level. It was 37.5% men (6 people) and 23.08% women (6 people). Insufficient IPAQ level also obtained by more people in relation to their subjective assessment. This concerned 9.53% of the group (4 people), of which 12.5% of men (2 people) and 7.69% of women (2 people).

**Tab. 3 Difference between the results of physical activity level assessment based on IPAQ and the subjective assessment**

|                 | High level       |         | A sufficient level |         | Inadequate level |         |
|-----------------|------------------|---------|--------------------|---------|------------------|---------|
|                 | number of people | Percent | number of people   | Percent | number of people | Percent |
| Women           | 6                | 23.08%  | -8                 | -30.77% | 2                | 7.69%   |
| Men             | 6                | 37.50%  | -8                 | -50.00% | 2                | 12.50%  |
| <b>TOGETHER</b> | 12               | 28.58%  | -16                | -38.09% | 4                | 9.53%   |

## Discussion

The results obtained by IPAQ are positive. They indicate that the majority of people is characterized with a satisfactory or high level of physical activity. This applies to the entire study group and both sexes, with a higher percentage of men (25%) than women (15.35%). In addition, the average level of physical activity of the whole group, as well as individual sexes, was assessed as high. In the context of the WHO recommendations for regular physical exercise, this is a positive phenomenon that nowadays is not always observed in other countries [7, 12]. The results of the comparison of both methods show the differences between the subjective assessment of the level of physical activity in young adults and the level calculated on the basis of IPAQ. The tendency to assess the level of physical activity as sufficient, although it does not matches the criteria of this level, was observed in the whole group as well as in individual sexes. This phenomenon refers particularly to men, half of whom (50%) assessed their level of physical activity wrong. In the case of women it was 30.77%. These discrepancies result from both underestimation and overestimation of the level of physical activity. Most people tended to underestimate their rating (28.58%). This phenomenon is also particularly evident in men (37.5% men vs. 23.08% women). An over-estimation of the assessment was also a frequent

phenomenon (9.53% of respondents) and also more often affected men (12.5% of men vs. 7.69% of women).

The tendency to underestimate than to overestimate the level of physical activity (28.58% vs. 9.53%), in the context of WHO recommendations, may be a positive phenomenon. Young people, who assess their level of physical activity as worse than they actually present, can be better motivated to exercise more often [13]. At the same time, the negative assessment of their level of physical activity should not happen in young educated adults. The study outcome also corresponds with the previous studies.

### **Conclusions**

To sum up, young adults, on average, represent high levels of physical activity, which is a positive phenomenon. The study shows that young adults cannot assess their level of physical activity correctly. They tend to underestimate as well as to overestimate their actual level of physical activity. The subjective underestimation of the level of the physical activity is more common.

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