Perception on Physical Education among Students

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Abstract: One way to find the perceptions about physical education (activity) among students is to apply some questionnaire. By applying physical activity index questionnaire to the students, we will be able to determine the level of physical activity practiced and their perception about physical education in their daily life. The study involved 166 undergraduate and master students (age 22.83 ± 5.80) from the Faculty of Physical Education and Sport, Stefan cel Mare University of Suceava, whose distribution was as follows: undergraduate male - 61, undergraduate female - 58; master male - 28, master female - 19. It should be mentioned that their academic activity includes between 1 and 6 hours of practical activities and some of the participants practice various sports, which means additionally between 6 and 10 hours of training per week. The questionnaire was applied to the subjects in January 2018. The results for ANOVA analysis between gender indicated significant differences between males and females in all three analyzed situations (undergraduate, master and overall), but the analysis made inside gender (undergraduate, master) did not show any statistical difference. The study is limited to the number of participants (166), but it can be a benchmark for other studies aiming at the physical education for youth and students and their impact on health-related fitness and an active lifestyle. In the future it is necessary to assess the subjects with some practical tests to see if there is any correlation between questionnaire scores (a subjective evaluation) and the results of the tests, where we are talking about objective evaluation; this is necessary to determine if the reliability of the questionnaire is adequate to the Romanian students and to be used as benchmark in the future.

Keywords: *physical activity; questionnaire; youth; analysis.*

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1. Introduction

One way to find the perceptions about physical education (activity) among students is to apply some questionnaire and usually there are used International Physical Activity Questionnaire (short and long form), Baecke Questionnaire and Physical Activity Index.

International Physical Activity Questionnaire assesses the intensity of physical activity and sitting time that people do as part of their daily lives and comprises a set of 4 questionnaires. The long form had 5 activity domains and the short form had 4 generic items. This questionnaire is suitable to apply to person aged 15 to 69.

Baecke Questionnaire allows the assessment of the physical activity in three distinct dimensions (work, sports, leisure).

The Physical Activity Index is often used in Romania to assess health-related physical fitness. There are 3 items (intensity – 5 levels, time – 4 levels, frequency – 5 levels), where 1 is the lowest level and 4 or 5 is the maximum level (Dumitru, 1997). The questioned person is asked to mark one level for each item. The value is obtained by multiplying all these 3 values and the result could be between 1 (poor, sedentary) and 100 points (excellent, active life style).

In order to obtain real and useful information for establishing the physical activity program, the answers must be honest and accurate (Leuciuc, 2015b).

There are studies that try to find out if there is a validity between this questionnaire and another instrument in order to measure the level of physical activity - pedometer (Bortolozzo, Santos, Pilatti, & Canteri, 2017; De Cocker, Cardon, & de Bourdeaudhuij, 2007), accelerometer (Linges, Khoo, Mohamed, & Taib, 2016; Murphy et al., 2017; Philippaerts, Westerterp, & Lefevre, 2001) showed a moderate to strong correlation but the people are subjective in their responses at questionnaires and this gadget offers us more objective information and could motivate youth and students to practice different kinds of physical activities.

Among students, these applied questionnaires showed some contradictory results: for Indonesian (Dinangsit, 2017; Sultoni & Fitri, 2017), Sri Lanka (Ranasinghe et al., 2016), Lithuanian (Kalvenas, Burlacu, & Abu-Omar, 2016) and Croatian (Pedisic, Jurakic, Rakovac, Hodak, & Dizdar, 2011; Pedisic, Rakovac, Bennie, Jurakic, & Bauman, 2014) students the results were poor, but for the Belgian (Van Dyck, Cardon, Deforche, & de Bourdeaudhuij, 2015), Hebrew (Weissbluth, 2015), Greenland (Dahl-Petersen, Hansen, Bjerregaard, Jorgensen, & Brage, 2013) populations, it

showed a good level of physical activity (education) assessed by questionnaires.

Sometimes there was found an overestimation of the personal possibilities (Lingesh et al., 2016) and it is needed to find another more objective ways to assess physical activity.

For Chinese youth this questionnaire was not a valid instrument for measuring physical activity (Wang, Chen, & Zhuang, 2013); for New Zealand (Boon, Hamlin, Steel, & Ross, 2010; Mackay, Schofield, & Schluter, 2007) and Spanish (Roman-Vinas et al., 2010) population and in other 12 countries (Craig et al., 2003) the level of validation was acceptable; and for Dutch population the reliability was adequate (Baecke, Burema, & Frijters, 1982).

The physical activity assessments by questionnaires were found to correlate significantly with obesity (Tehard et al., 2005). There is an association between International Physical Activity Questionnaire short form and some physical fitness components like cardiorespiratory fitness, flexibility and the upper-body muscular endurance (Silva-Batista, Urso, Silva, & Bertuzzi, 2013).

In the light of this data, the correlation between the questionnaires' results and the objective measurements of physical activity in the large majority of studies was lower than the acceptable standard; using this as main indicator of physical activity is weak (Lee, Macfarlane, Lam, & Stewart, 2011). No questionnaire for assessing physical activity was superior and therefore it could not be strongly recommended above others, so we must pay more attention to the methodology of assessing measurement and the quality of reporting (Poppel, Chinapaw, Mekkink, van Mechelen, & Terwee, 2010).

For youth and students the results at these questionnaires showed poor to good physical fitness, and according to that, we must act to encourage them to involve in regular physical education activities for a healthy lifestyle (Leuciuc, 2015a).

There is not a unanimous consent about the efficiency and validity of these questionnaires, but they could provide us some data to design a physical education program for a certain category of the population.

1.1. Material and methods

By applying physical activity index questionnaire to the students, we will be able to determine the level of physical activity practiced and their perception about physical education in their daily life. The questionnaire used in this research is freely available.

The study involved 166 undergraduate and master students (age 22.83 ± 5.80) from the Faculty of Physical Education and Sport, Stefan cel Mare University of Suceava, whose distribution was as follows: undergraduate male - 61, undergraduate female - 58; master male - 28, master female - 19.

It should be mentioned that their academic activity includes between 1 and 6 hours of practical activities and some of the participants practice various sports, which means additionally between 6 and 10 hours of training per week.

The questionnaire was applied to the subjects in January 2018.

The questionnaire parameters are the intensity, duration and frequency, each of which being scaled by 4 (duration) or 5 levels (intensity, frequency), and 4 or 5 being the maximum and 1 the minimum (table 1).

Table 1. Questionnaire for assessing fitness level (Dumitru, 1997)

Parameters	Scoring	Type of activity
Intensity	5	Effort that leads to rapid breathing and sweating.
	4	Effort increasing the respiratory rate and sweating.
	3	Effort above average.
	2	Moderate effort.
	1	Easy effort.
Duration	4	Over 30 minutes.
	3	20-30 de minutes.
	2	10-20 de minutes.
	1	Bellow 10 minutes.
Frequency	5	Daily or almost daily.
	4	3-5 times weekly.
	3	1-2 times weekly.
	2	Several times monthly.
	1	Less than once monthly.

Physical Activity Index is obtained by multiplying the scores of each parameter: Intensity X Duration X Frequency and we obtain points. Findings physical activity level based on the responses to the questionnaire has the following scale (table 2).

Table 2. Assessment of physical activity based on the questionnaire (Dumitru, 1997)

Scoring	Rating	Physical activity level
81-100	Very active lifestyle	Excellent
61-80	Active and healthy	Very good
41-60	Acceptable	Good
20-40	Insufficiently active - relatively sedentary	Weak
>20	Sedentary	Very weak

Underrating or overrating of responses may have negative repercussions in implementing the physical education program.

2. Results and discussions

After the questionnaire data was centralized and mathematical statistics was performed by calculating the following parameters: arithmetic mean, maximum, minimum, standard deviation, coefficient of variation, ANOVA.

The results were analyzed according to the study level and gender (table 3).

Table 3. Distribution of the statistical parameters by study level and gender

Statistical parameters	Undergraduate		Master		Male (n=89)	Female (n=77)
	Male (n=61)	Female (n=58)	Male (n=28)	Female (n=19)		
Mean	54.92	44.96	60.29	37.21	56.61	43.25
Minimum	1	6	12	6	1	6
Maximum	100	100	100	100	100	100
Standard deviation	24.28	22.75	30.54	24.99	26.35	23.33
Coefficient of variation (%)	44.21	50.59	50.67	67.17	46.56	53.95

In this self-evaluation situation of the physical activity, males obtained the best results, meaning a good level of physical activity (male undergraduate and male overall) or a very good one (male from master programs). For females the results indicated a good level (female

undergraduate and female overall) and a weak one for females from master programs. Generally speaking, in four groups the level is good, in one case very good and in another weak. Although there are four groups with a good level (two for females and two for males), there is a difference between males and females because the range for a good level is between 41 and 60 points and the woman's results are closed to the lower level and men's results are closed to the highest level (Leuciuc, 2017).

In overall, we can say that the physical activity index for inquired students is good (Dahl-Petersen et al., 2013; Van Dyck et al., 2015; Weissbluth, 2015).

The variety of the individual results (between 1 and 100) showed in each group a weak homogeneity.

We ask to respondents to remember about their daily physical education program for a long period of time (1 year) and according to that to answer to the three items of the questionnaire.

After that we made an ANOVA analysis at certain levels according to the study level and gender: undergraduate male versus female, master male versus female, male versus female, male undergraduate versus master, female undergraduate versus master (table 4).

Table 4. ANOVA analysis by groups

ANOVA analysis	df	F	P
Undergraduate male versus female	(1,117)	5.261	0.023*
Master male versus female	(1,45)	7.444	0.009*
Male versus female	(1,164)	11.792	0.0008*
Male undergraduate versus master	(1,87)	0.794	0.375
Female undergraduate versus master	(1,75)	1.576	0.213

The results for ANOVA analysis between gender indicated significant differences between males and females in all three analyzed situations (undergraduate, master and overall), but the analysis made inside gender (undergraduate, master) did not show any statistical difference.

Undergraduate students had in their curricula between 3 and 6 hours of physical activities and master students just 1 or 2 hours but the analysis made by the study level and gender did not show any statistical difference for males and females.

Each subject was informed and voluntarily consented to participate in this research.

3. Conclusions

Questionnaire's results of the respondents may be influenced by subjectivity, and to avoid that, we asked them to make a realistic analysis of an individual level and choose the right answer for each item.

I noticed there is no difference regarding the study level, only by gender, and the number of physical education in the curricula did not influence the score at this questionnaire.

Dividing subjects by study level and gender, 6 analyzed groups resulted and four of these were located at good level (undergraduate male, undergraduate female, overall male, overall female), one at very good level (master male) and the last one at weak level (master female).

According to the research participants age, the recommendation is to increase the index above 80 points for a very good fitness and that means at least 150 min of moderate- to vigorous-intensity aerobic physical activity per week and muscle-strengthening activities at least 2 days per week (Tremblay et al., 2011).

Since childhood it is important to interact with the environments related to physical activity because that influences later behavior in this direction (Timo, Sami, Anthony, & Jarmo, 2016).

The study is limited to the number of participants (166), but it can be a benchmark for other studies aiming at the physical education for youth and students and their impact on health-related fitness and an active lifestyle.

In the future it is necessary to assess the subjects with some practical tests to see if there is any correlation between questionnaire scores (a subjective evaluation) and the results of the tests, where we are talking about objective evaluation; this is necessary to determine if the reliability of the questionnaire is adequate to the Romanian students and to be used as benchmark in the future.

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