Education, Society and Human Studies
ISSN 2690-3679 (Print) ISSN 2690-3687 (Online)
Vol. 3, No. 1, 2022
www.scholink.org/ojs/index.php/eshs

Original Paper

Attitudes of Primary School Pupils to Physical Education

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Received: December 18, 2021 Accepted: December 31, 2021 Online Published: January 21, 2022

doi:10.22158/eshs.v3n1p41 URL: http://dx.doi.org/10.22158/eshs.v3n1p41

Abstract

Background: *The descriptive study focuses on pupils' attitudes towards physical education lessons. There are also two other issues discussed in the physical education community. The first is P.E. assessment of pupils. The second issue is relieving from P.E. lessons. The motivation of pupils at the beginning of school and the subsequent evaluation of their activity is important for development of positive attitudes among all pupils. Aim: The aim of the research is to find out how pupils perceive P.E. lessons because physical activities are important for health and a healthy lifestyle.* ***Methods:*** *The data were statistically analyzed in the R program. The Chí-square test for non-parametric data was used to assess statistical significance. We used the coefficient of determination to evaluate material significance.* ***Results:*** *Almost 88% of respondents engage in sports activities at different levels. Material significance is found in the following cases: Physical Education is more popular with boys and is also much more important for boys. Statistical significance wasn't found for two items.* ***Conclusion:*** *We see a link between the low level of motor abilities and the reasons for the absence of pupils in Physical Education classes, as well as their positive feelings when P.E. classes get cancelled.*

Keywords

physical activity, motivation; attitudes to P.E., current topics in P.E

1. Introduction

The descriptive study focuses on topics related to the perception of P.E. by primary school pupils. Health is the most important value in life therefore this topic should be included in discussions with children from an early age. According to the WHO, lifestyle is a result of childhood education. Hancox, Milne and Poulton have the same opinion, arguing that excessive television viewing in childhood is associated with overweight and obesity, low fitness, smoking and increased cholesterol in adulthood.

Jeřábek and Tupý consider the education of children for active advancement, responsibility and protection of physical health as a priority of the current educational trends in primary education in the Czech Republic (Hancox, 2014; Jeřábek, 2007; WHO, 2002).

HBSC (Health behavior in School-Aged Children) follows the health behavior of the young generation. The HBSC results have several sections. We present some results regarding physical activity from 2016, because they directly relate to our study. HBSC claims that most Czech children are conditioned with their lifestyle. Compared to other countries, the Czech Republic is rather at the bottom of the ladder. Most children suffer from lack of physical activity (80%). Many children spend a lot of time watching TV and using computers. Obesity affects 29% of 11-year-old boys, 28% of 13-year-old boys and 23% of 15-year-old boys. Czech children are no different from the international average (Gecková, 2016).

The aim of the research is to find out how pupils perceive P.E. lessons because physical activities are important for health. Children's perception of the value of health is influenced by school and family (WHO, 2002). Information about the value of health is passed on to children in Health Education. Health Education has been implemented in school curricula since 2007. One component of health is physical health, P.E. deals with this component. The main objectives of Physical Education are complex. Fialová defines the objective of Physical Education at school as follows, "the main objective is to stimulate and promote a bio-psycho-socially effective lifelong exercise regime, health prevention, mobility skills, physical skills, knowledge, personal characteristics and positive attitudes of pupils towards exercise". The last part of the definition is the most important. This section emphasizes the nurture of pupils' positive attitudes towards physical activities. Sufficient, quality physical activity is an important determinant that contributes to human health (Fialová, 2010, p. 89).

There are also two other issues discussed in the physical education community. The first is P.E. assessment of pupils. The second issue is relieving from P.E. lessons. Cihlář points to an important function of assessment in that positive assessment influences the attitudes of the pupil towards P.E in the dimension related to performance and health. An interesting finding is that the activity of the parents has an impact on the activity of the child. The motivation of pupils at the beginning of school and the subsequent evaluation of their activity is important for development of positive attitudes among all pupils. Cihlář also observes a low level of motor abilities in his research. It measured performance using the Unifittest 6-60 test battery. Most probands are below average and over 60% of children do not get even one hour of exercise a day (Cihlář, 2017).

2. Method

2.1 Research Tool

The research tool is a questionnaire divided into five sections. In this study, we present the results of the first and second section of the research tool. There are two types of items in these five sections. The

first type is an open question. The second type is the answer to a question bounded by a scale. The first section has 6 questions focused on popularity, significance and intensity of P.E. for pupils. This section was taken from the standardized questionnaire of Hrabal and Pavelková (Hrabal, 2015). The questionnaire was used to determine the relationship of Czech pupils to individual school subjects. The second section has four questions and tracks feelings and emotions in P.E. lessons. Part of the questions is taken from Frano, other questions are open and supplemented by Antala. Questions supplemented by Antala explore what pupils are afraid of and what activities they do not enjoy (Antala, 2012; Frano, 1977; Frömel, 1999; Hrabal, 2015; Sigmundová, 2012).

2.2 Research Sample

The research sample was chosen deliberately and consists of secondary school pupils. In the results section, we divided the set into boys and girls in order to observe differences in attitudes between the sexes. The questionnaires were administered by Faculty of Physical Education and sport Charles University students as part of their practice. A total of 589 questionnaires were completed. The conditions for exclusion from the research were set out as follows: no identifying data (height, weight, age), more than three unanswered entries in the questionnaire, or a nonsensical answer to an open-ended question. If the respondent wrote that they didn't understand the question, we wrote the missing code into the data. We didn't take that as a missed question. Analysis of the data showed these problems mainly concern two items, we didn't include these items in the interpretation of the results. This way, we ensured the relevance of the data. Following this correction, we included 480 questionnaires to the research. You can see the representation of each type of education programme of the sample in Table 1. We used the International Classification Scale (ISCED) of 2011 to divide the probands. Table 2 shows psychometric indicators according to the educational programme.

Table 1. Division by Educational Programme

		Boys	**Girls**	**All**
Lower secondary	ISCED 2	37	41	78
8-year grammar school	ISCED 2	95	67	162
6-year grammar school	ISCED 2	11	10	21
4-year grammar school	ISCED 2	52	83	135
High school with graduation	ISCED 3	27	57	84
All		222	258	480

Table 2. Psychometric Indicators of the Research Sample

	Age (years)	SD	Height (cm)	SD	Weight (kg)	SD
Boys	15.69	1.83	171.17	10.93	59.67	12.21
Girls	15.67	2.31	165.50	7.72	55.00	9.30
All	15.68	2.10	168.13	9.75	57.16	10.98

2.3 Statistical Analysis

The Cronbach's alpha coefficient was used to evaluate the internal consistency of the psychometric indicators that were analyzed. The data was analyzed in the R program. We transformed answers into tables. We used the Chí-square test to determine statistical significance (Skutil, 2011). The hypothesis is established as follows: There is no difference in the results between the group of boys and girls. If the resulting Chí-square value of the test is less than 0.05 (,,p=.05") the null hypothesis will be rejected. As part of the interpretation of the data, we decided to work with effect size. The coefficient of determination can be applied to ordinal data. For this coefficient, the effect occurs if the difference between elements is more than 10% in this case, we point to material significance. Data not bounded by a scale were converted into a graphical form. We used percentages to interpret the data (Sigmundová, 2012).

3. Results

In the following chapter, we present the results of our research. Cronbach's alpha is 0.7, this value shows good internal consistency. Table 3 contains descriptive statistics. The most common median value is 2. This indicates a rather more positive expression of the individual items. Modus is identical to the medians of the individual items. The item evaluating motivation is at 4, in this case indicating a low level of motivation.

Table 3. Descriptive Statistics for Individual Items

	Mean	SD	Mode	Median	Quartile 3	Quartile 1	IRQ	Skew	Kurtosis
Popularity of P.E.	2.27	1.00	2	2	3	1	2	0.49	-0.21
Attitude to P.E.	2.33	0.91	3	3	3	2	1	0.26	-0.52
Motivation to P.E.	2.70	1.00	4	4	4	3	1	0.12	-0.36
Significance of P.E.	2.76	1.11	2	2	3	2	1	0.21	-0.42
Difficulty of P.E.	3.28	1.03	2	2	3	2	1	0.66	0.55
Talent in P.E.	2.77	1.00	2	2	3	2	1	0.32	-0.21
Feelings in P.E. lessons	2.18	0.83	2	2	3	2	1	0.46	0.20
Feelings when P.E. lesson is cancelled	2.35	1.17	3	3	3	1	2	0.41	-0.75

The sample was divided by sex. The samples were compared using the Chí-square test, to search for statistical significance. In Table 4 we provide results of the data analysis. We point to the statistical significance between boys and girls („p=.05"). Statistical significance was demonstrated in six items.

Table 4. Statistical Analysis of Individual Items

Item	Sex	Scale range				
		Very popular Unpopular				
Popularity of P.E.	Boys	17%	37%	36%	8%	2%
Chi-square 0.000	Girls	35%	33%	22%	8%	3%
		Very hardworking I don't try at al				
Attitudes to P.E.	Girls	15%	54%	23%	7%	1%
Chi-square 0.000	Boys	16%	47%	29%	6%	3%
		Very motivated Not motivated				
Motivation to P.E.	Girls	11%	33%	40%	12%	4%
Chi-square 0.000	Boys	10%	34%	37%	14%	5%
		Very important Insignificant				
Significance of P.E.	Girls	9%	23%	38%	18%	12%
Chi-square 0.000	Boys	18%	37%	27%	16%	3%
		Very demanding Very easy				
Difficulty of P.E	Girls	5%	17%	40%	27%	12%

Chi-square 0.146	Boys	5%	13%	41%	25%	15%
		Very talented			Talentless	
Talent in P.E.	Girls	10%	26%	38%	19%	7%
Chi-square 0.051	Boys	12%	35%	34%	14%	5%
		Always good			Always bad	
Feelings in P.E. lessons	Girls	14%	45%	34%	6%	1%
Chi-square 0.000	Boys	12%	50%	23%	2,.5%	0.5%
		I'm always happy			I'm always upset	
Feelings when P.E. lesson is cancelled	Girls	38%	21%	27%	9%	5%
Chi-square 0.012	Boys	24%	50%	23%	2.5%	0.5%

First item shows the popularity of P.E. Physical education is more popular with boys than girls. In the categories Very Popular and Neither Popular, nor Unpopular, differences are higher than 10%, we observe material significance. The category Very Popular was more frequently checked by boys (18%). The category Neither Popular, Nor Unpopular was more frequently checked by girls (14%). Chi square showed statistical significance between boys and girls.

Pupils' approach to physical education lessons is shown on the second item. Most pupils are in the category Hardworking or in the Sometimes I Try category. We do not observe a difference of more than 10% in the approach of individual groups and we do not observe material significance, but statistical significance is demonstrated. Third item shows the self-assessment of a pupil's motivation. An important element of motivation in our set will be external motivation by the teacher. Over two-thirds of both boys and girls are in the "Motivated" and "Moderately Motivated" categories. Chi square showed statistical significance between boys and girls. The significance of P.E. is shown in item four. For the girls' sample, the distribution is very similar to the normal distribution. As for boys, only a few individuals are in the "insignificant" category while most boys checked the "important" category. This category appears to be significant. It can therefore be concluded that for the boys is P.E. more important than for the girls. Chi square showed statistical significance between boys and girls. Fifth item presents findings on the difficulty of P.E. lessons. Girls perceive P.E. as more demanding. Most of the sample is in the "Moderately demanding" category. We don't observe statistical significance. Pupils' talent for P.E. is shown in item six. There is a trend in responses approaching a curve showing normal distribution. Pupils overestimate rather than undervalue their talent. Only 18 girls and 10 boys checked the "talentless" category. This is a relatively positive finding. Statistical significance has not been demonstrated for this item. Feelings about P.E. are shows in item seven. Most often, pupils

marked the category “Mostly good.” At the other pole, “Always bad” was checked by very few pupils. In the category of “Sometimes good”, we observe material significance. Girls marked this category much more often than boys. We observe statistical significance between boys and girls. Item eight shows pupils’ feelings when their P.E. class is cancelled. Many of the girls are always happy. The most common answer for boys is, “I often like it”. For this item we observe material significance for two categories. The “I’m always happy” category for girls and the “I often like it” category for boys. Chi square showed statistical significance between boys and girls.

Activities that pupils are afraid of are shown in Figure 2. We only include activities that were checked by at least 5% of respondents. The most common responses are “Nothing” and “Gymnastics”

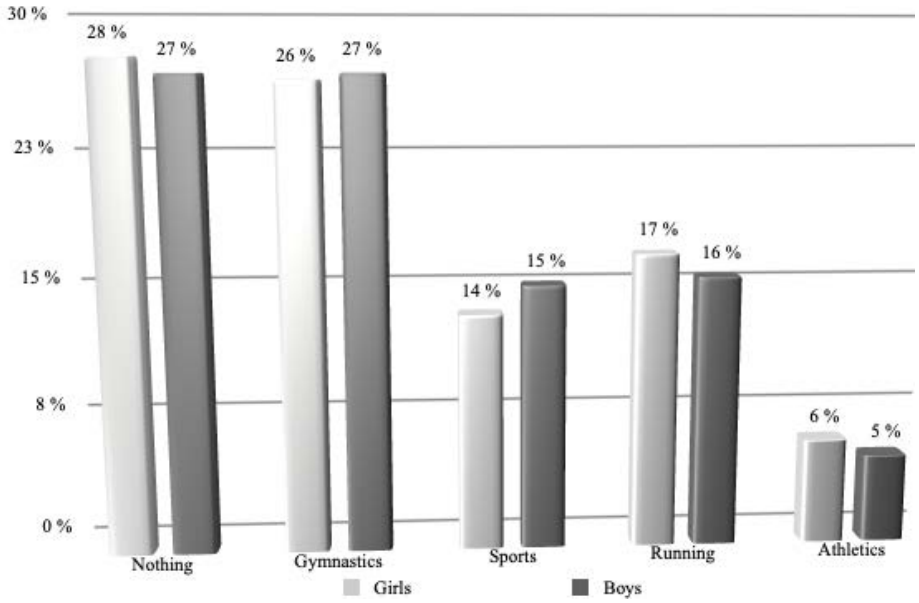

Figure 1. Activities I’m Afraid of

The figure number 3 shows the 7 least popular activities that were checked by respondents. We include activities checked by at least 5% of respondents. The least popular activity is gymnastics, the others are different forms of running.

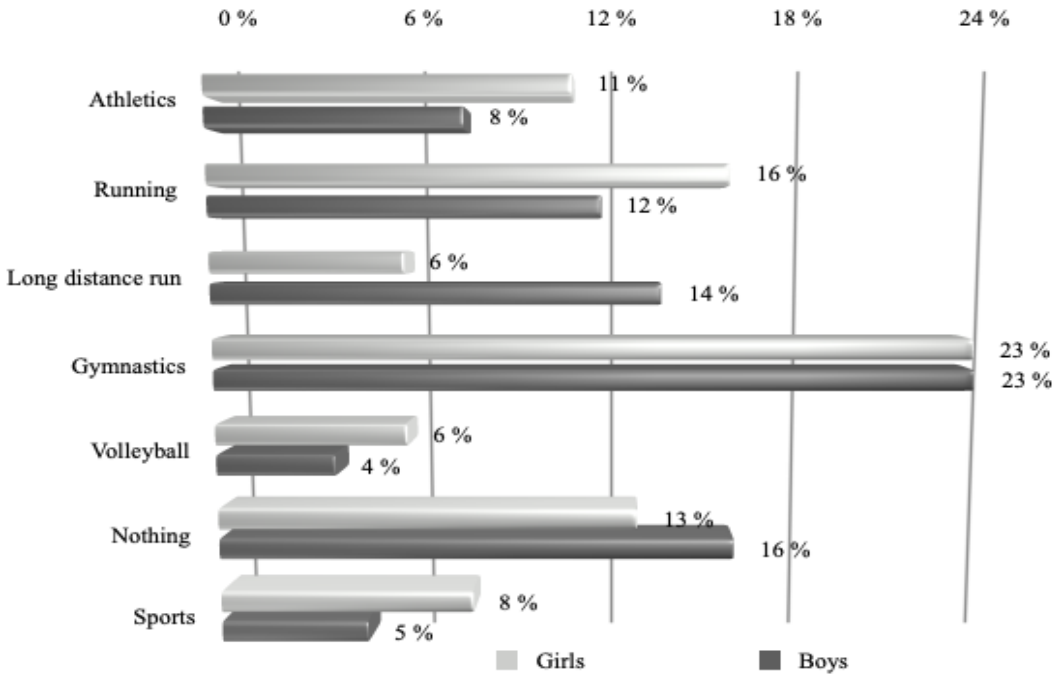

Figure 2. Activities I Don't Like

4. Discussion

We have identified some important information in our research. We point to statistical significance between boys and girls. Statistical significance wasn't demonstrated in two items, "Difficulty" and "Talent". We consider these findings to be significant. Physical Education is more popular with boys. We also observed material significance in the item detecting feelings when P.E. classes are cancelled. This is a question that deserves further investigation. Boys and girls agree on the activities they are worried about, most often mentioning gymnastics, running and sports games. Different forms of games are important for motivation to exercise. We can agree with this because pupils are afraid or dislike activities where game forms and competitions are not used (athletics, gymnastics, running). Gosset compares two programs to teach P.E. These programmes differed precisely in competitive form, Gosset didn't prove a statistical difference between the samples. Bernstein's study shows that educational programs based on competition and racing are less popular among elementary school students. Pupils and parents from Ireland share the same opinion, particularly appreciating the fun and experiential form of P.E. (Bernstein, 2011; Coulter, 2020; Gosset, 2019; Rikard, 2007). Attitudes to P.E. are positive in our sample. Many studies point to the fact that the interest and positive attitude towards P.E. classes decrease with age, for example in Pereira, which examines the relationship of Portuguese pupils to physical education. In our sample, we do not observe a decline in popularity with age, just as Cruz in his study points to a positive attitude of Filipino children to physical activities even after graduating from secondary school (Arabaci, 2009; Cruz, 2021; Dismore, 2010; Chen, 2015; Pereira, 2020;

Subramanjam, 2007; Veseli, 2015). Wang compares a sample of children from China and the US, its results suggest that Chinese pupils have a more positive relationship with P.E and also that boys feel more positively about P.E. than girls. We observe this finding in our study, but it is not statistically significant (Cihlář, 2017; Hancox, 2004; Philips, 2015; Wang, 2019). Chinese students see P.E. as an important part of their lifestyle. There is a significant difference in the preferences of activity in girls and boys, this can also be seen in our ensemble. Irish pupils know that a positive relationship with activity is important (Coulter, 2020; Cruz, 2021; Zeng, 2016).

If we compare the results of our study with Antala, we reach the following conclusions. P.E. is a relatively popular school subject for all pupils but Czech pupils seem to enjoy P.E. more than their Slovak counterparts. Both sets consider P.E. an undemanding subject with Czech pupils indicating lower difficulty of the subject. On the other hand, Slovak pupils consider P.E. to be more important than Czech pupils. We found the same difference in terms of motivation in P.E. classes. The Czech set makes more effort in P.E. classes than the Slovak set.

Our study limits are the sample size and the non-standardized research tools. There is no standardized tool in the Czech language that would evaluate students' attitudes and opinions towards P.E. We found some interesting tools in the research. We think about translating one tool used in the world into the Czech language for better comparison of issues in individual states. At the same time, we think that the tool we have used is good enough for this research.

5. Conclusions

The positive perceptions of Physical Education in our research are good news. We see a link between the low level of motor abilities identified by Cihlář and the reasons for the absence of pupils in Physical Education classes, as well as their positive feelings when P.E. classes get cancelled. An interesting finding was that a significant part of the sample is afraid of gymnastics and some individuals even of the teacher. These are factors where causes need to be identified and worked on. The low level of motor abilities may also be related to activities that pupils do not like to perform (athletics, gymnastics, running). These activities are very important for the development of motor abilities. We think the next step is to find the variables that affect pupils' attitudes to P.E. in future research.

Acknowledgement

Funding: This research was funded by Progres Q19, SVV 260599

Informed Consent Statement: https://docs.google.com/document/d/1TXYs9_Ihth4VObNVj-_JTOJupLgC9-9oTnf7j_z6hzI/edit?usp=sharing

Data Availability Statement:

https://docs.google.com/spreadsheets/d/1OG-7oJD4HwsQjITtcaiX_QzrQtLt8NeTiED2W8DfT6E/edit#gid=444716115

Conflicts of Interest: "The authors declare no conflict of interest".

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