VILNIUS UNIVERSITY

Rita Sketerskienė

EDUCATIONAL LOAD AND ITS LINKS WITH HEALTH AMONG STUDENTS OF SIXTH AND EIGHTH GRADES IN LITHUANIAN SCHOOLS OF GENERAL EDUCATION

Summary of the Doctoral Dissertation
Biomedical Science, Public Health (10B)

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1. INTRODUCTION

Children are not little adults. Developing organism is sensitive, and while it is growing fast, organs and systems are forming, organism overcomes specific, so called "windows" of critical sensitivity, when negative impact of surrounding environmental factors can influence development of the child. Children can not influence surrounding environment, and only adults are in charge of the environment in which children live, play, learn and sometimes work. The duty of each society is to guarantee natural right to healthy and safe environment.

The health of a child is influenced by many environmental factors. The conception of environment includes not only physical, but also economical, social, psychosocial factors that have impact on the quality and health of a child. Investments into children health is essential condition of the development of humanity and economy. Healthier children have better opportunities to lead meaningful and interesting life. In order to achieve these objectives, close cooperation of various sections – health, education, social security, and others – is necessary.

In Lithuania children compose one quarter of the entire society. It is quite a numerous group. This is the reason why programs and means of various sectors are often imposed for this part of population. Evaluating traditional medical criteria, this is the healthiest group of citizens, however – mostly vulnerable part of population.

Official children health statistics tells that this part of population is not healthiest: morbidity among children is much higher than among adults; annual medical examination of each child identifies more and more health disorders each year, and the number of the disorders also increasing; as well as the number of children with chronic diseases.

State delegates the obligation of learning to each child in Lithuania. According Constitution of the Republic of Lithuania education is compulsory to all persons aged under 16 years. Learning is a demanding process. The environment of educational system is part of each child development and evolution and has an impact on its health. Children must not only study, and make learning progress at school, but also they have feel safe and well here. In order to ensure high quality and standards educational system must should be regulated. Administration and teachers have responsibility organising learning and making timetables at school. This process practically cannot be influenced by children. Non-formal education is another area, where they cannot have an impact; parents are also part of school community a lot depends from them.

Balance of educational load, keeping work and rest regime, are necessary conditions for normal mental and physical development of a child.

Educational load is defined as the volume of schoolchild's work activity in the process of his education. Main principles of organisation of the educational process are: learning cannot do harm on child's health and his development; the schoolchild in a short time period must acquire as much knowledge's as it is possible however educational load should not be exceeded. However, pedagogues underline that, one of the main challenges of educational system is the optimisation of educational load.

Article 40 of Law on education of the Republic of Lithuania indicates that educational load of schoolchildren must correspond to the requirements of hygiene norms. Lithuanian hygiene norm HN 1 "Hygiene norm. General provision and the order of arrangement" indicates that hygiene norms include digital aspect of scientifically based environmental factors, harmless for human health. Lithuanian hygiene norm HN 21

"General education schools. General requirements for health safety" include regulation of aspects of schoolchildren educational process organisation, having influence on the health of children. However the results of international research done by World health organization in 2002 concerning health and healthy life showed that among 35 countries Lithuania has the bigger parts of 11, 13 and 15 years old schoolchildren that are under pressure by schoolwork.

The results of the research "Educational loads and health of students from XI to XII grades" conducted in Hygiene institute in 2000, social research "Reasons of excessive educational load and possible solutions" carried out in 2002 and "Educational loads in general education schools" conducted in 2004 in Vilnius pedagogical university revealed that the problem of exceeded educational load is common and is relevant to all schools of general education in Lithuania.

In order to draw attention of school founders and school principles towards this problem, Ministry of Education and Science of the Republic of Lithuania obliged the principles to organise the consideration of social research conducted at schools in 2002 and to foresee the means for regulation of the educational load.

The relevance of the problem is also confirmed by the topics of inspection that are indicated in subject programs of public education supervision: in 2004 "The reduction of educational loads in general education schools" and in 2005 "The reduction of educational loads (reversible investigation)".

The problem that is deal with this research includes the challenges of educational load among students of sixth and eighth grades in Lithuanian schools of general education in the context of their health and self feeling.

The aim of the study is to indicate and to assess educational load and its link with health among students of sixth and eighth grades in Lithuanian schools of general education.

Main tasks of the study

1. To indicate relevance of the problem in relation to educational load among students of sixth and eight grades at schools, implementing the program of basic education.
2. To identify the reasons, determining excessive educational load.
3. To indicate the links between exceeded educational load and health.

Additional tasks of the study

- To indicate the influence upon the optimisation of educational load of the Ministry of Health of the Republic of Lithuania regulation sphere legal base, regulating organisation of educational process.
- To evaluate possible influence upon the optimisation of educational load, done by children, teachers and parents (guardians/foster parents).
- To indicate the links between students' well-being and elements of daily regime and educational load.

1.1. Relevance of the study

Lithuanian hygiene norms, regulating organisational aspects of educational process, are drafted following the traditions and valid normative, supplementing them by the experience of other countries. Requirements indicated in the acts of Lithuanian law,

in particular their quantitative aspects, usually are not based on scientific research. To the date these studies carried out were fragmentary and do not reflect current situation in Lithuania despite the legal regulation regarding educational load is well defined and are quite strict. However, even fragmentary studies reported excessive educational load in Lithuanian schools of general education.

The concept "excessive educational load" is differently evaluated and interpreted in different studies. The study of schoolchildren health and lifestyle HBSC conducted in Lithuania in 2002, examined educational load among students of fifth, seventh and ninth grades. In order to measure educational load the question was asked as follows "How pressured do you feel by the schoolwork you have to do?" It was interpreted as "educational load". It is doubtful that students' respond to this question "sufficiently" and "a lot" could be interpreted as "excessive educational load". It is more relevant to interpret this concept doing scientific research.

Implementing the reform of education and looking for more flexible ways of organisation of educational process, strict elements of quantitative regulation of educational process can become an obstacle for new educational forms. The liberalisation of this area have to be supported by scientific research.

1.2. Novelty of the study

Heretofore there were no research conducted in order to evaluate educational load among students of Lithuanian schools undertaking basic educational program (sixth and eight grades), in relation to the characteristics of Lithuanian education structure, types of school and language of teaching. This study analyses the characteristics of students' learning according to this educational program, the reasons excessive educational load and the links with students' health. The current study proposes an assumption for scientific evidences to make reasonable decisions when regulating educational load.

1.3. Practical meaning of the study

The completed results of this study will be used by the Ministry of Health of the Republic of Lithuania and it will be offered with proposals concerning the amendments of educational load regulations. The results of research will be also introduced to the Ministry of Education and Science of the Republic of Lithuania.

1.4. Defensive affirmations of the dissertation

1. Educational load of 6^{th} and 8^{th} year students is excessive, and the possibilities of its regulation, indicated in the legal acts of the Ministry of Health of the Republic of Lithuania, are formal however, not fully implemented in to the practice.

2. The worsening health of teenagers is influenced by exceeded educational load.

3. Students, teachers and parents can have an impact on the optimisation of an educational load.

2. METHODS OF RESEARCH

This research was done undertaking following phases (Figure 1):

1. The research of situational analysis "Factual educational load of eighth year students" done from 15 March, 2004 – 15 April, 2004.

2. Literature and the Lithuanian legal basis review, regulating the organisation of educational process. The aim, tasks and instrument of research was decided on the basis of this review.

3. Pilot research was carried out in Vilnius Emilija Pliateryte basic school in May, 2005, in order to test the chosen instrument.

4. The main research was conducted on 14-18 November, 2005.

Conducting the review of legal acts it was appointed that Lithuanian databases of statistics do not contain exact information concerning the age of children starting to attend school. This is the reason why it was decided to calculate the exact age of children. Children were asked to indicate the date of birth and the date when the questionnaire was completed. .

The information was sought on students permanent residence of living. According to the definition of city and village which was obtained from the Law on Territorial Administrative Units of the Republic of the Lithuania and their Boundaries the respondents were divided in two groups: living in rural or urban area.

To identify the links between health and educational load only those questionnaires were selected for future data analysis, where to the question "your opinion about educational load of students" (allowed answers were: corresponds the possibilities of the students; is excessive; and other) was responded as it "corresponds the possibilities of the students" and "is excessive".

2.1. Review of scientific literature

All biomedical journals published between 2000-2008 and all educology journals issued between 2003-2008 in Lithuania were revised.

The search of scientific articles and publications written by foreign authors in English and Russian languages was carried out using the main keyword *educational load*. The abstracts in databases of *MEDLINE, Health Source: Nursing/Academic Edition, MD Consult, Willey Inter Science,Pubmed Medline, DOAJ (Directory of Open Access Journals), Medical Matrix* not limiting the year of publishing were reviewed.

There is a little scientific articles published in relation to this problem and only few papers were found. In addition search of scientific papers were extended using various combinations of keywords; the datum-word was the keyword "schoolchildren/pupils". The search was repeated using the new keywords in data bases of *MEDLINE, Health Source: Nursing/Academic Edition* for time period of 2003-2008. Also the literature indicated in the bibliography of articles was used, additionally reviewing related articles in *Pubmed Medline* database.

2.2. Ethical considerations of the research

The ethical approval to conduct this study was obtained at the Ministry of Education and Science of the Republic of Lithuania and at The Lithuanian Bioethics

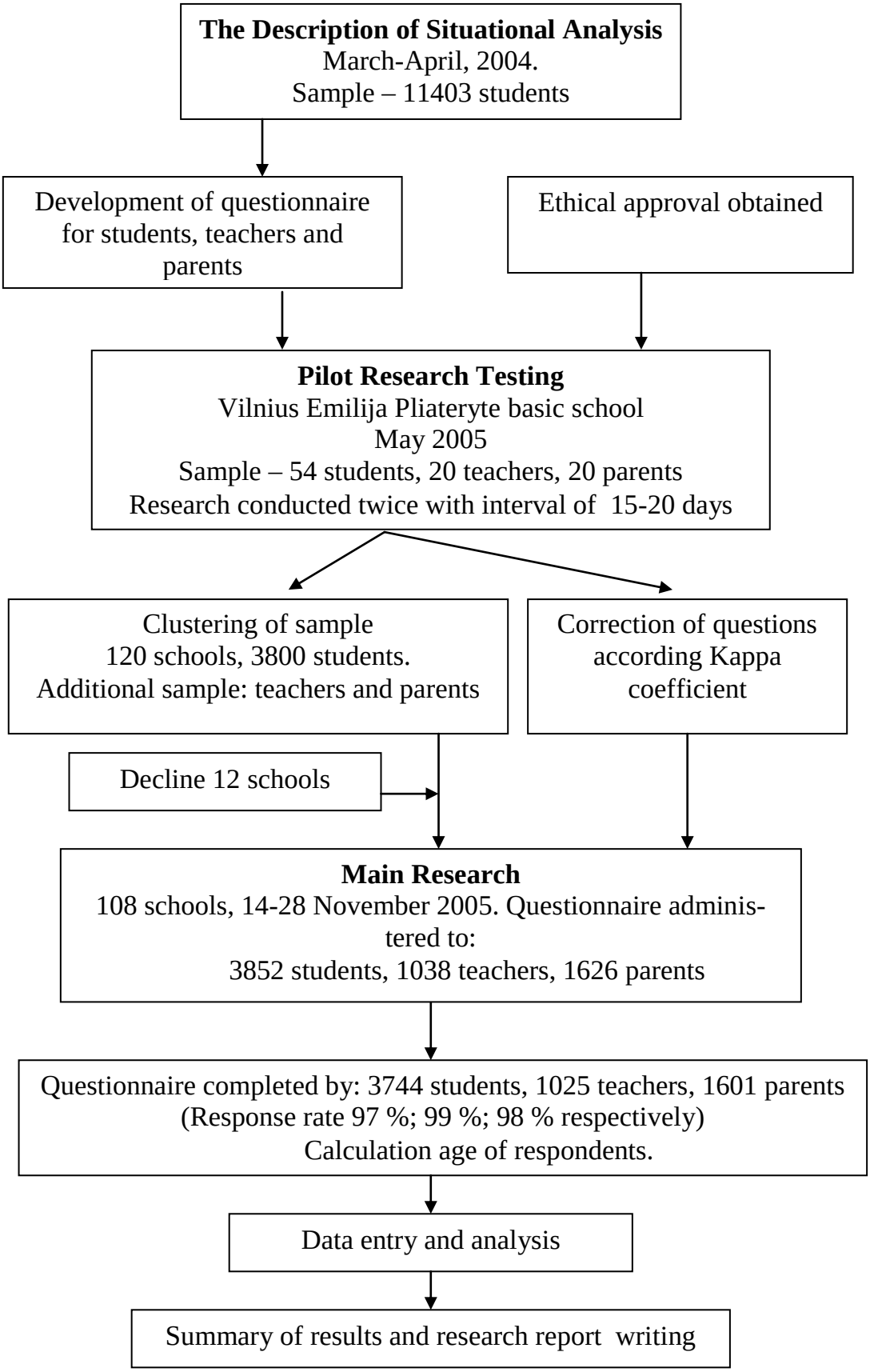


Figure 1. Algorithm of research

Committee. The accompanying letter from Vilnius University Faculty of Medicine to all school principals participating in the research was sent, asking for obtaining consent and for appointment of the contact person for whole study period. Information leaflet was developed for the parents of students explaining the objective and rationale of study. Oral informed consent was also obtained from all respondents.

2.3. The sample of research

The sample size was estimated using Statcalc in the program EpiInfo (6.00 version). Assuming that the factors of risk and indicators of health, the anticipated spread of which can be the least, when the least risk of mistake α is equal to 0.05, and the power of research is 80%, a sample size of 3800 students was required. Additional sample was estimated for the parents of students and teachers.

The presumption was made, that in one school it would be a possible to administer questionnaire to twenty students of sixth grade and twenty students of eighth grade. For the representative sample it was decided to select 120 schools.

The schools were selected using the data source of educational and science institutions registration, the registers of general education schools. For the selection the registers of secondary and basic school were used. Only general education schools, teaching in Lithuanian language were selected. Random simple sample was formed from 72 basic schools and 48 secondary schools. The schools, where the principles refused to take part in the research, were deleted from the list. Research sample was formed from total 64 basic and 44 secondary Lithuanian schools were selected from the list. In schools where were more than one sixth and/or eighth grade, the particular grades were selected. In each grade half of the parents were asked to fill in the questionnaire.

2.4. Instrument of research

Questionnaires were administered to students, teachers and parents (guardians/foster parents) anonymously. All answers given were completely confidential. Questionnaires did not contained personal identification details such as name, surname or personal identification number. The questionnaires were developed specifically for this study and adopted to the characteristics of Lithuanian educational system and using the questionnaires related to the quality of life. The questionnaire for student contained 84 questions. The questionnaire for teacher and parent included 28 and 24 questions respectively.

2.5. Criteria of sample selection

The children between 11–15 years of age study in the second stage of educational process which covers fifth–eight grades. This age coincides with the period of children maturation. The organism of this age is especially sensitive to negative factors of the environment. The HBSC study of schoolchildren health and lifestyle, which was undertaken in 2002, assessed the health and lifestyle of 11, 13 and 15 year old children. For purposes of this research students of fifths, sevenths and ninths grades were selected, because the most of them belonged to this age group. The health of students of sixth and

eight grades studying in the second stage of educational process were not investigated in this kind of research by other researchers.

According to the provisions of Law on education of the Republic of Lithuania, adopted in 1998, the duty of parents is to bring 6–7 year old children to the school of general education, that is why the assumption in this research was made, that the sixth year students should be of 12–13 years old, and eighth year students should be of 14–15 years old.

2.6. Evaluation of variables

Educational load is evaluated according subjective opinion of the respondents and factual time that was committed for the learning. Organisational aspects of educational process, regulated by legal acts were evaluated as much, as they corresponded to indicated requirements: maximal allowed number of lessons in a weak, time for homework, the number of tests in a day, requirements of timetable formation.

The well-being and health was evaluated according to the subjective evaluation: general well-being, exertion of tiredness, feeling of tension and fear at school, relationship with parents, number of illnesses during the last school year, dynamics of complaints concerning health and health changes.

2.7. Statistical analysis and evaluation of data

Statistical analysis was conducted using SPSS *(Statistical Package for Social Sciences)* software (version 11.0) and WinPepi 1.45 (2006) computer program.

Standard descriptive indicators of statistics for continuous variables such as arithmetical medium of parameters, standard deviation, median, mode, minimal and maximal meanings were estimated.

Hypothesis concerning the equality of two independent groups of continuous variables were tested applying Student t test.

Two groups of continuous variables which had abnormal distributions were compared using Whitney U test.

For the indication of gradual links of variables, the coefficient of Spearman correlation (r_s) was used.

For the analysis of categorical data χ^2 and Fisher's scientific method were used. The importance level $\alpha = 0.05$ was used to test hypothesis. The difference of results was considered as significant, when p value was less or equal 0.05.

Stepwise logistic regression was used in order to evaluate the risk factors. To select value of variables univariate analysis was conducted. Variables were selected to the model, when p value was less than 0.25. However the model also used valuables that were epidemiologically important, regardless to statistical significance. Model compatibility Chi-square criteria, Hosmer-Lemshov test and classification table were used for the evaluation of model correspondence data. Significance of coefficient β was evaluated using Wald test. $\alpha = 0.05$ was chosen as a level of statistical significance, results were evaluated as statistically significant when p value was les or equal 0.05.

3. RESULTS

3.1. Characteristics of respondents

Students. In total 1811 (48.4 %) boys and 1933 (51.6 %) girls from 108 Lithuanian schools of general education participated in the study. Overall 1787 (47.7 %) studied at sixth grade, 1957 (52.3 %) – eighth grade. Age of students is presented in Table 1.

Table 1. Age of students (in years)

Group of respondents	Mean	Std. Deviation	Median	Minimum	Maximum
6 class (N = 1787)	12.47	0.570	12.00	11.00	15.00
8 class (N = 1957)	14.49	0.567	14.00	13.00	17.00
Total (N = 3744)	13.53	1.158	14.00	11.00	17.00

More than a half respondents (64.4 %) permanently live in rural area, the remaining 35.6 % – in the city. The biggest proportion (96.9 %) of students indicated that the main language for communication at home is Lithuanian, 0.8 % - Russian, 0.2 % - Polish and 2.1 % of children communicate in several languages.

Students living in the urban area specified more often (35.8 %) that their mothers had higher education. 36.5 % of children did not know the education of their mothers. Students living in rural area more often (41.6 %) comparing with those living in cities (27.3 %, $p<0.001$) were not aware education of their mothers. Students who lived in rural area more often (26.5 %) than students living in cities (21.1 %, $p<0.001$) indicated that their fathers had secondary education. 43.2 % of students were not aware the education level of their fathers. This fact was more often (47.7 %) among the children living in the rural area than among those living in the urban area (35.2 %, $p<0.001$).

Because of the increasing emigration and in order to clear out the composition of students' families, the respondents were given a question "Who lives with you in the same flat (house)?": 78.1 % live with both parents, 18.4 % live with one of the parents, 2.3 % live with grandparents, 1.2 % with other persons.

Home environment was evaluated according to the factor if a child had a place where he can do homework at home. The majority (97.1 %) of students indicated that they had such a place, however 2.9 % of students stated, that they did not have such a place.

Teachers. In total 1025 teachers, teaching for interviewed students, participated in the research. 84.4 % women and 15.6 % men. 61,8 % of them had work experience of 15 years.

The majority (90.4 %) of teachers indicated that they have graduated from higher school, 6.5 % graduated from college, 1.7 % graduated from special school till 1991, 1.4 % graduated from some other school (the majority of them had unfinished higher education). The groups of men and women were similar according to their education ($p = 0.157$).

Overall 37.2 % of teachers indicated that they teach languages, 27.8 % teach natural sciences, 16.8 % – social sciences, 13.0 % fine arts and technological education, 5.3 % – physical education. Men more often (26.9 %) than women (10.4 %, $p<0.001$)

taught fine arts and technologies, women more often (42.7 %) than men (7.5 %, $p<0.001$) taught languages.

Parents. In total 786 (41.6 %) parents participated in the research, the children of whom studied in sixth grade and 815 (50.9 %) parents the children of whom studied in eight grade. The majority (66.2 %) of respondents were women. 37.1 % of respondents graduated from higher school, 25.4 % from secondary school, 16.2 % from vocational school and 2.1 % had another type of education.

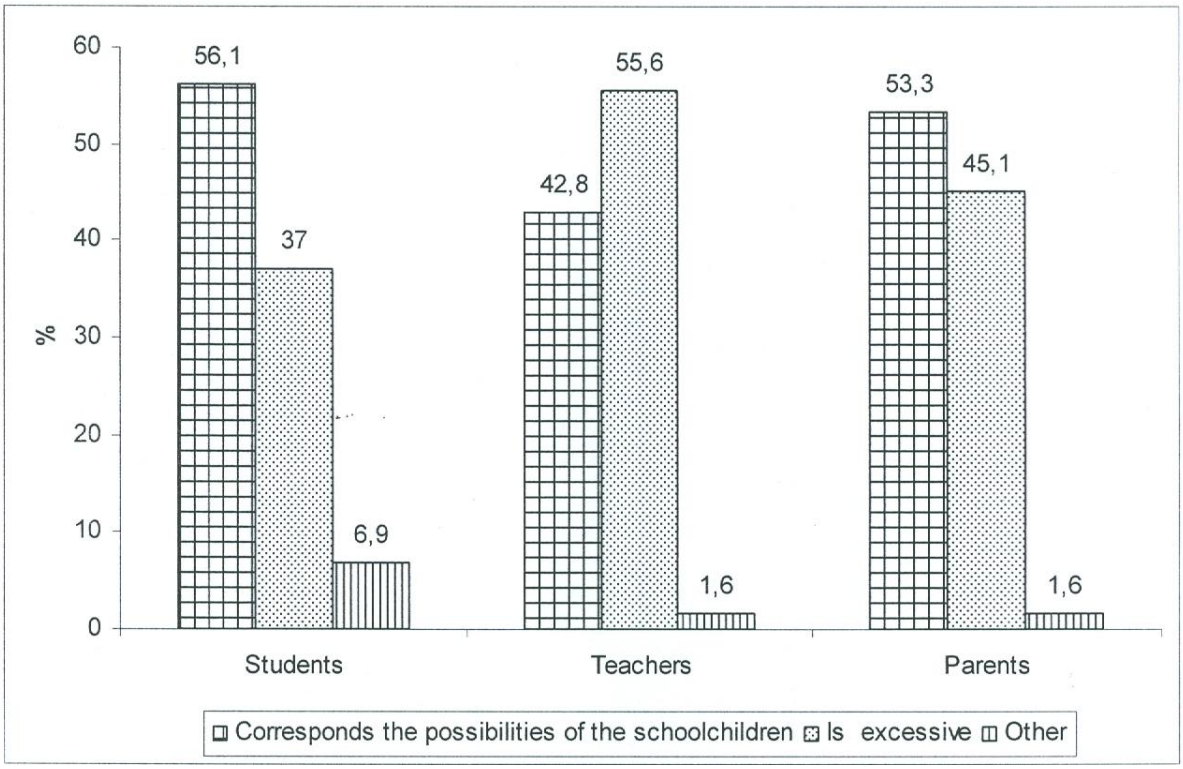
3.2. Educational load

For purpose of this research, educational load was assessed according to the subjective opinion of respondents and according to the factual duration of learning: lessons at schools, homework and additional learning.

3.2.1. Subjective evaluation of educational load

The answers to the question "Your opinion about educational load" among respondents differed and presented in Figure 2.

Overall 37.0 % of students thought that educational load is to be excessive. The number of students thinking that educational load corresponds their capabilities was one-and–a-half that amount. The proportion of parents, thinking that educational load is to be excessive, was higher (45.0 %, $p<0.001$) than the proportion of students. The proportion of teachers, stating that educational load was excessive was the highest (55.6 %, $p<0,001$).



$p<0.05$ comparing between groups of respondents (students, teachers, parents)

Figure 2. Distribution of respondents by educational load assessment

Evaluation of students educational load according to gender (χ^2 = 29.999, df = 2, p<0.001), grade (χ^2 = 94.439, df = 2, p<0.001) and living place (χ^2= 82.124, df = 2, p<0.001) was different.

Girls more often (37.6 %) than boys (36.3 %) stated that educational load is to be excessive, however this difference is insignificant (p = 0.399). Eighth year students more often (43.8 %) than sixth year students (29.5 %, p<0,001) stated that their educational level is excessive. The answers of respondents show, that students of rural areas more rarely (32.2 %) than students from town (45.5%, p<0.001) assess their educational load as excessive.

Annual progressiveness of students thinking that their educational level is high was lower (Mann-Whitney U = 1321893,5; p<0.001) than of those, thinking that their educational load corresponds their capabilities.

In order to clear out the characteristics of concepts used in subjective evaluation of educational load, the additional question was given "Do you feel pressured by the schoolwork this year?". Approximately one half (48.1 %) of respondents chose the answer "sometimes".

This affirmation was differently evaluated regarding to gender (χ^2 = 43.861, df = 2, p<0.001), grade (χ^2 = 100.615, df = 2, p<0.001) and place of living (χ^2= 117.817, df = 2, p<0.001). Quite a big part (39.0 %) of boys and girls (34.4 %) responded to this question with "yes" (p = 0.003). Students of eighth grade felt more (43.3 %) pressured by schoolwork than students of sixth grade (29.3 %, p<0.001). Students living in the city felt more (47.2 %) pressured by schoolwork than those living in rural areas (30.8%) and this difference is statistically significant (p<0.001).

The data of the research showed that direct correlative link of medium strength between students' answers to question "Do you feel pressured by the schoolwork this year?" and their opinion about educational load existed (r_s = 0.467, p <0.001): the students, who answered that this year they were pressured by the schoolwork thought that educational load is to be excessive.

More than a half (55.6 %) of interviewed teachers, assessed educational load for students as excessive. There was more women (57.6 %) stating that educational load was excessive than men (45 %, p<0.001). Work experience had influenced the evaluation of educational load (χ^2 = 4.910, df = 6, p<0.001). The most (59.4 %) teachers who had work experience less than 5 years, or from 6 to 10 years (51.3 %) indicated that educational loads corresponds the capabilities of students. However majority of teachers (56.4 %) who had longer work experience from 11 to 15 years stated that educational load for students is excessive. Those teachers with experience longer than 15 years (60.2 %), stated that education load is also to be excessive.

Regarding to the degree of teacher's qualification, it was indicated, that teachers, having higher qualification more often considered the educational load to be excessive, than those, having lower degree of qualification (χ^2 = 8.085, df = 6, p = 0.232).

The number of teachers, who taught in the classes not bigger than 15 students, evaluating educational load as corresponding capabilities of children (46.4 %) and as excessive (53.0 %), was similar (p = 0.089). Whereas, teachers, working with bigger classes more often (56.0 %, p = 0.219) stated that working loads are excessive. The majority (59 %, p = 0.092) of these teachers occurred among respondents working with classes, composed from 26-30 students.

The number of parents stating that educational loads are excessive was higher than the number of students, but lower than the number of teachers (Figure 2).

Analyzing the answers of parents according to the grade their child was in, it was indicated, that the parents of eighth year students more often (48.7 %) indicated that educational load is excessive than the parents of sixth students (41.3 %, $p<0.001$). Evaluation of educational load depended on the gender of parents ($\chi^2 = 10.443$, df = 2, $p = 0.005$). There were more mothers (47.9 %) thinking that educational load is excessive than fathers (39.6 %, $p<0.05$). Analyzing the answers of mothers it was indicated that the number of mothers indicating that educational load corresponds the capabilities of their children (47.9 %) and that educational load was excessive (50.7 %, $p = 0.208$) was similar. Whereas the number of fathers indicating that educational load corresponds capabilities of the child was bigger (58.4 %) than of those thinking that educational load is excessive (39.6 %, $p<0.05$.)

It was analyzed how parents assess educational load depending on how often they communicate with their children. The bigger part (54.2 %) of parents, communicating with children every day, thought, that educational load corresponds their capabilities. The number of parents in this group, thinking that educational load is excessive was less (44.2 %, $p = 0.05$). Whereas in the group of parents who rarely ask children about their problems the number of parents thinking that educational load corresponds capabilities of a child (53.2 %) and the number of parents thinking that educational load is excessive (44.9 %), did not differ.

3.2.2. Factual educational load

Students were asked to indicate the number of compulsory lessons they had at school, how much time they spent doing homework, and how much time they spent for additional studies per that week. Using these data, factual educational load was calculated (Table 2).

The results of factual educational load confirmed subjective tendencies of assessment of the educational load: educational load is higher among students of eighth grade, girls and students living in the urban area. Median educational load for sixth grade students was 28.6 hours and for eighth grade students – 30.9 hours a week. Educational load for both grades together, among those students who self-assessed their educational load as excessive, factual medium of educational load was higher than among those students who, evaluated their educational load as corresponding to their capabilities ($p<0.001$).

When evaluating factual educational load, it was assessed how much educational load coincides with the requirements of legal acts: factual educational load of 66.4 % of students corresponded requirements of hygiene norms, however, educational load of even 33.6 % of children exceeded the proportions regulated by legal acts. Factual educational load differed depending on subjectively evaluated educational load (Table 3).

Approximately one third of children, who indicated that education load corresponds their capabilities, factual educational load did not coincided with the requirements of hygiene norms. In this case there were more students of sixth grade than students of eighth grade ($p<0.001$). However for students (60.4 %), who self-assessed their educational load as excessive, factual educational load coincided with the requirements of hygiene norms. In this case there were more students of eighth grade than students of sixth grade ($p<0.001$).

Non-formal children's education is not a mandatory activity, however our study found that non-formal educational activity increased general load. The results of research showed, that the clubs of non-formal education increased general load for students of sixth grade by 2.4 hours per week, for students of eighth grade by 2.1 hours per week. Evaluating general load of students the tendencies remain the same: general load is higher among eighth grade students, girls, and students living in the urban area. General educational medium of both, sixth and eighth grades, evaluating their educational level as excessive, is higher than of students evaluating their educational load as corresponding their capabilities ($p<0.0001$).

Table 2. Factual educational load (hours per week) depending on class, gender, residence and subjective assessment of educational load

Group of respondents			Mean	Std. Deviation	Median	Minimum	Maximum	p
Grade		6th (N = 1787)	29.8	5.4	28.6	21.1	64.9	p<0.001
		8th (N = 1957)	31.7	5.1	30.9	23.1	59.8	
Sixth year students	Gender	Boy (N = 880)	29.0	5.1	27.8	21.1	55.6	p<0.001
		Girl (N = 907)	30.7	5.6	29.4	21.3	64.9	
	Residence	Urban area (N = 614)	30.1	5.4	29.1	21.1	61.5	p = 0.200
		Rural area (N=1173)	29.7	5.4	28.5	21.2	64.9	
	Assessment of educational load	Corresponds the possibilities (N = 1148)	29.3	5.0	28.3	21.1	64.9	p<0.001
		Excessive (N = 527)	30.8	6.0	29.4	21.3	55.6	
Eighth year students	Gender	Boy (N = 931)	30.5	4.7	29.7	23.1	52.8	p<0.001
		Girl (N = 1026)	32.8	5.2	31.9	23.1	59.8	
	Residence	Urban area (N = 717)	32.6	5.4	31.5	23.2	59.8	p<0.001
		Rural area (N = 240)	31.2	4.8	30.4	23.1	52.8	
	Assessment of educational load	Corresponds the possibilities (N = 952)	31.0	4.6	30.3	23.0	52.8	p<0.001
		Excessive (N = 857)	32.4	5.4	31.3	23.3	59.8	

Table 3. Links between factual eduactional load and subjective assessment of eduactional load

Factual educational load		Subjective assessment of eduactional load			
		Corresponds the possibilities of the students		Is excessive	
		No	Percentage	No.	Percentage
Students of sixth grade * (N =1675)	Coincide with Hygiene norm	752	65.5	278	52.8
	Not coincide with Hygiene norm	396	34.5	249	47.2
	Total	1148	100	527	100
Students of eighth grade ** (N = 1809)	Coincide with Hygiene norm	729	76.6	557	65.0
	Not coincide with Hygiene norm	223	23.4	300	35.0
	Total	952	100	857	100
Total *** (N = 3484)	Coincide with Hygiene norm	1481	70.5	836	60.4
	Not coincide with Hygiene norm	619	29.5	548	39.6
	Total	2100	100	1384	100

* $\chi^2 = 24.811$, df = 1, $p<0.001$

** $\chi^2 = 29.433$, df = 1, $p<0.001$

*** $\chi^2 = 38.347$, df = 1, $p<0.001$

3.3. Educational process and educational load

3.3.1. Organisation of educational process at school

The legal acts regulate requirements for time table preparation are in. However even 10.7 % of teachers replied in our study that in their school the timetable is prepared irrespective Lithuanian hygiene norm HN 21 requirements. Overall 33.5 % of teachers even did not know about these requirements. Distribution of teachers concerning assessment of time table was different, depending on their work experience ($\chi^2 = 19.021$, df =6, p = 0.004).

The opinion of teachers regarding the correspondence of drafting timetable to legal acts also coincided with opinion of students: only 28.1 % of students were satisfied with timetable, 44.8 % of them were only partly satisfied. Distribution of students in relation to the timetable assessment was different depending on the gender ($\chi^2 = 61.473$, df = 2, $p<0.001$) and grade ($\chi^2 = 152.346$, df = 2, $p<0.001$). The results of research revealed, that most common reason of dissatisfaction was: two or more hard lessons following each other; In addition 25.6 % of students indicated that the majority of hard lessons are on Monday and 12.1 % – on Friday.

The proportion of students who were not satisfied with timetable and who assessed educational load as too heavy was bigger more than twice (42.1 %), comparing with those, who indicated that educational load corresponded to their capabilities (17.9 %, $p<0.001$). The opinion students of sixth and eighth grade were similar. Those sixth grade students, who responded that their educational level is excessive, were more (24.7 %) satisfied with the timetable than the same group of eighth grade students (10.3 %, $p<0,001$). Students, evaluating their educational load as corresponding to their capabilities, assessed the time table better than those, having excessive educational load ($\chi^2 = 315.968$, df = 2, $p<0.001$).

3.3.2. Mandatory lessons at school

Maximal number of mandatory lessons at school is one of the areas, regulated by legal acts. Sixth grade students can have no more than 29 and eight grade students no more than 31 mandatory lessons per week. The medium of lessons for both: sixth formers and eighth formers coincide with requirements of hygiene norms; however, one third (27.6 %) of students, during research week, had more lessons than it was regulated. Students of eighth grade (29.0 %) had more lessons than students of sixth grade (26.1 %, $p = 0.048$).

One third (31.0 %) of those students who responded that educational load is excessive, in fact had more lessons than it is indicated in the hygiene norm. Eighth grade students having excessive educational load more often (33.4 %) had too many lessons, than students of sixth grade (27.1 %, $p= 0.009$). One quarter (26.0 %) of students, evaluating their educational load as corresponding their capabilities, indicated that the number of compulsory lessons exceeded the number, indicated in the hygiene norm. Both numbers of sixth and eighth students were similar.

Maximum number of lessons is regulated not only per week, but also per day. However 3.7 % of students mentioned that sometimes there are eight lessons a day. This was more often indicated by eighth formers (5.7 %) than by sixth formers (1.5 %, $p<0.001$).

Despite the fact that legal acts regulate maximum number of mandatory lessons, the majority (66.6 %) of teachers expressed their opinion, that these lessons are not enough in order the knowledge of students would correspond the requirements of educational standard of the subject.

Even three quarters (75.4 %) of teachers, indicating the educational load of students was excessive indicated that the number of lessons is not enough for the subject. In order to identify the reasons of such an opinion of the teachers, the question was asked "Is it possible to lecture the program of your subject, in order to teach children well?". The majority (52.4 %) of teachers responded that it is impossible.

Two quarters (63.9 %) of teachers, considering educational load as excessive, indicated that during the lessons that are intended for the subject, it is even impossible to lecture the program of the taught subject. The data of research demonstrates that correlative link of medium strength exists between teachers' opinion concerning the sufficiency of imposed number of lessons and possibility to lecture the program of taught subject ($r_s = 0.460$, $p<0.001$): the teachers that are not satisfied with the number of imposed lessons for their subject, think that it is impossible to lecture the program of the subject.

3.3.3. Tests

Results of research show that the number of tests was different in relation to educational load assessment. Those students, who had excessive educational load, had average of 2.51 tests per week and students whose educational load corresponds their capabilities had 1.98 tests per week ($p<0.001$). Assessing the number of test for the requirement of hygiene norms it is worth mentioning that 5.1 % of school children indicated more tests per week than it is regulated.

Overall 44.3 % of students responded that they are informed about the test a week ago, and 13.4 % – before starting a new topic of subject. Students evaluating their educational load as corresponding to their possibilities more often indicated that they are informed about the test a week ago or even when starting a new topic, than students, thinking that their educational load is excessive ($\chi^2 = 25.654$, df = 3, $p<0.001$).

The effective planning of tests means when teachers arrange the time and number of tests during the schooldays and week among themselves. The aspects of test planning were also reflected in the answers of teachers: 79.3 % said they try and 9.0 % said they sometimes try to arrange and agree number and time of tests between each other. However the opinion of students is quite contradictory: 44.8 % of students do not feel that teachers would arrange the tests among themselves. Students, who think that their educational load is excessive, more often indicated that they do not feel the teachers arranging tests among themselves, than students, thinking that educational load corresponds to their capabilities ($p<0.001$).

Students' participation planning tests could also be an effective measure to balance the number of tests. The same opinion was expressed by majority of teachers who took part in the research. Even 78.1 % of them indicated that they arrange and plan tests with students and only 7.2 % of them indicated that they don't. The correlative link between the teachers' answers "Do you arrange the time of tests with other teachers working in the same class" and "Do you arrange the time of tests with your students" ($r_s = 0.219$, $p<0.001$) was found: teachers, arranging the time of tests with other teachers, working in the same class, also arrange it with the students.

3.3.4. Homework

The duration of time spent to do the homework expressed in hours was assessed by the gender, grade and residence depending on different working days (schooldays) and during the whole week. The median time spent for homework per week among boys was 5.8 and among girls – 7.5 hours. Looking at the homework duration for different working days only, this period of time is shorter and takes 5 hours for boys and 6.5 hours for girls per week. Students usually spent one hour to do homework at weekends. The duration of homework does not depend on the fact if a child has a permanent place of work or not and where he usually does homework – in a separate or general room.

More advanced students spent more time for homework than students having lower annual progressiveness (Mann-Whitney U = 1411130.5; $p<0.001$). Students, whom annual average progressiveness marks are 9-10 more often (40.8 %) do their homework longer than 8 hours a week, than students whom annual average marks are between 5 and 5.9 (27.8 %, $p<0.001$). However, the analysis of data shows that children, having annual average mark of 5-5.9 also spent up to 8 hours per week for homework, that is as

much (72.2 %), as it is regulated by legal acts. Correlation coefficient of homework period and progressiveness ($r_s = -0.092$, $p<0.001$) shows, that there are almost no links between the time which is imposed for homework and the progressiveness.

Students, evaluating their educational load as excessive, impose more time for homework, than those, thinking that educational load corresponds to their capability.

Students having opinion, that educational load is excessive, spent more time for homework (6^{th} grade students– mean 8.04 hours a week, 8^{th} grade students – 8.34 h) than students, thinking that educational load corresponds to their capabilities (6^{th} year students – 6.7 hours, 8^{th} year students –7.07 hours, $p<0.001$).

Results of the research show that the duration of homework depends on the time when the homework is done. More than a half (56.0 %) of children responded that they do homework after they come back from school and get rest. These students in average spent 7.4 hours a week for homework, which is less, than the students doing homework without any break and rest after school, (8.4 hours, $p<0.001$). Assessing educational load by place of living did not find any essential differences in relation to exact time spent for homework.

According to the data of results, 45.7 % of teachers always give homework for students. Six percent of teachers never give homework: these are usually the teachers of physical education, fine arts or technological education. The distribution of teachers according to the homework assignment was different and depended from the opinion of teachers in relation to given number of lessons for their subjects ($\chi^2 = 20.237$, $df = 4$, $p<0.001$) and the necessity of homework ($\chi^2 = 217.898$; $df = 6$, $p<0.001$). Teachers, who thought that homework help mastering the learning process more often answered "always" than "sometimes" to the question "Do you give homework?". The number of teachers assigning homework "sometimes" is similar, for those whose opinion was expressed that students should work at home more (59.6 %) or among those who had opinion that nothing would change if homework would not be given (59.2 %). Teachers having the opinion that the number of lessons imposed to their subject is too small in order the achievements of students would correspond the requirements of the educational standards to give homework more often (49.8 %) than teachers, having opinion that the number of lessons for their subject is sufficient (37.3 %, $p<0.001$).

General time spent doing homework also depends on the fact whether teachers arrange the time of homework among themselves. According to the data of research, 65.0 % of teachers responded that they agree always or sometimes homework between each other, despite the students do not feel that (73.0 %). Actually, quite a big proportion (93.8 %) of teachers do not assign homework for holidays, however the opinion of students was different: only 45.0 % of them answered that they are not given homework for holidays.

There were more parents whose children spend more time for homework (more than 2 hours a day) thinking that educational load is excessive, than among those parents whose children spend less time on homework (up to 1 hour per day) ($p=0.05$). Aapproximately half (46.4 %) parents indicated that their children spent 1-2 hours a day for doing homework. Half of them (24.4 %, $p<0.001$) indicated that their children spend more than 2 hours on their homework per day. There is a weak direct correlative link between parents' opinion concerning the duration of homework and the assessment of educational load ($r_s = 0.215$, $p<0.001$): in the opinion of parents whose children spend more time for homework, the educational load is excessive.

3.3.5. Additional studies

As students and parents are concerned about the quality of knowledge students getting in the school, the respondents were asked about additional studies. More than one fifth (22.5 %) students indicated that they study extra with tutors, parents or other persons: sixth grade students study extra more often (24.1 %) than eighth grade students (21.0 %, $p = 0.025$). Extra studies are more popular among girls (24.9 %) than boys (19.8 %, $p<0.001$), among students living in the urban (28.5 %) than in rural areas (19.1 %, $p<0.001$).

Students, studying extra usually, study one lesson per week in addition, which takes 45 minutes. Analysing data in groups divided by grade, residence, gender and assessment of educational load we found that every second student spend two hours for an extra studying. In groups according to assessment of educational load, averages of additional sudies periods were different; however this difference was not statistically significant.

Analysing reasons for additional studies, the majority (43.4 %) students who study extra hours indicated that they were seeking a better mark, 25.9 % did not understand subject taught during the lessons, the remaining group (24.7 %) indicated that they had the aim to study in higher school and that's why they need to have more knowledge they do not get at school. The big proportion (37.4 %) of children studying additionally indicated that they study extra because they do not understand in the lessons.

3.3.6. Optimisation of educational load

To assess teachers opportunities individualise tasks for each student according to his/her health, following question was included "Do you have any opportunities to consider the health of each child when organising the process of education?": 40.7 % of teachers responded they do.

Teachers, indicating educational load as corresponding capabilities of the students, more often stated that they had opportunities to consider the health of children when organising the process of education, than those, indicating, that educational load is excessive ($\chi^2 = 18.752$, $df = 3$, $p<0.001$).

Parents participation in the school life of their children is a positive aspect in current educational system. They can also contribute to optimise educational load in the school. This is clearly reflected in the parents' answers to question "can you influence the educational load of your child?". Almost a quarter (23.6 %) parents think they can make an impact on educational load optimisation. Parents answers were different depending on the assessment of educational load ($\chi^2 = 35.637$, $df = 2$, $p<0.001$). The proportion of parents thinking that they can influence on educational load of their child was twice bigger (29.2 %) among parents thinking that the educational load corresponds the capability of the child, than among those, thinking that educational load is excessive (16.8 %, $p<0.001$).

3.3.7. Factors influencing excessive educational load

In order to find out the factors influencing subjective assessment of excessive educational load, the model was made, including the variables which can explain this issue. The following variables were included in to the model: factual educational load,

rationality of time table made at school, a numbers of lessons per week, a number of tests per week, duration of homework per week, additional studies, and duration of non-formal education at clubs. Odds ratio (OR) was calculated and data are presented in Table 4. Controlling factors involved: place of living, language the child uses at home, shift of learning, experienced fear of teachers at school, complaints about health.

Table 4. Factors influencing excessive educational load (univaritate analysis)

Influencing factors	Odds ratio (OR)	95 % Confidence Interval	p
Factual educational load	2.14	1.78–2.56	p<0.001
Rationality of time table made at school	3.35	2.87–3.91	p<0.001
Number of lessons per week	1.29	1.11–1.50	p=0.001
Number of tests per week	2.11	2.11–2.87	p<0.001
Duration of homework per week	1.62	1.39–1.89	p<0.001
Additional studies	2.87	0.88–1.23	p=0.644
Duration of non-formal education at clubs	0.99	0.86–1.15	p=0.940

Stepwise logistical regression involved these statistically significant controlled factors: place of living, experienced fear of teachers at school, well-being at school, health complaints. After logistic regression was conducted main factors influencing subjective assessment of excessive educational load were settled (Table 5).

The results of logistic regression show, that the most important factors influencing excessive educational load are irrational timetable at school, factual load of learning, exceeding 35 hours a week, excessive number of tests in a week and additional studies.

Table 5. Factors influencing excessive educational load (multilevel logistic regression)

Influence factors	Total OR	95 % Confidence Interval	Odds ratio (OR_c)*	95 % Confidence Interval	p
Factual educational load	2.14	1.78–2.56	2.56	1.46–2.22	p<0.001
Rationality of time table made at school	3.35	2.87–3.91	2.84	2.40–3.35	p<0.001
Number of tests per week	2.11	2.11–2.87	1.42	1.01–2.00	p=0.043
Additional studies	2.87	0.88–1.23	0.80	0.66–0.99	p=0.022

* corrected controlling place of living, experienced fear of teachers at school, well-being at school, health complaints

3.4. Non-formal education and educational load

In total 70.1 % of students that participated in the research attend the lessons of non-formal education. 32.4 % of them attend two clubs of different profiles and 8.0 % of them attend three clubs weekly. Almost all the children, attending clubs indicated that they like attending clubs and they want being involved into additional activity. Students attending clubs spent 3.2 hours in average for this activity, every second duration of a club – 2.25 hours a week. However children often indicated that the duration of time they spent in club is equal to one lesson, which takes 45 minutes. No statistical significant differences were found between time spent in clubs and gender or time spent in clubs and grade. Students living in the urban areas spent more time for non-formal education (4.27 hours a week), than those, living in rural areas (2.62 hours a week, $p<0.001$). Depending on the subjective assessment of the educational load, there were no significant differences in the duration of time for non-formal education.

3.5. School environment and educational load

3.5.1. Attitude towards school

The majority interviewed students had positive attitude towards the school: 69.5 % of students answered "yes" to the question "Would you go to school, if you had a possibility to choose?". Motivation of students to go to school when having the opportunity to choose was different according to gender ($\chi^2 = 89.598$, df = 3, $p<0.001$), grade ($\chi^2 = 15.621$, df = 3, $p=0.001$) and residence ($\chi^2 = 30.907$, df = 3, $p<0.001$). Negative attitude towards the school is more characteristic for boys, older students, also for those, living in the city. Motivation, having the opportunity to choose was also different according to the educational load ($\chi^2 = 117.509$, df = 3, $p<0.001$). 11.5 % of students, thinking that their educational load is excessive, would not go to school if they had a possibility of choice. The proportion of students having the same opinion was less (4.1 %, $p<0.001$) among those, who indicated, that educational load corresponds their capabilities.

Direct correlative link ($r_s = 0.136$, $p<0.001$) between the motivation of children not to go to school and the aims to achieve further education among those aged 16 years were found. The students, seeking to study at secondary school (gymnasium) were more motivated to attend school than those who did not know what they would do at the age of 16, that means, when education becomes no more compulsory.

Assessing the status of school as of the institution attractive for a child, students were given a question "Would you like the school to be with no lessons, and with breaks only?". The majority (67.9 %) of students said "No". Positive estimation of the school as of an institution was different depending on gender ($\chi^2 = 47.920$, df = 2, $p<0.001$), grade ($\chi^2 = 12.927$, df = 2, $p = 0.002$), and residence ($\chi^2 = 8.892$, df = 2, $p = 0.012$). There were 10.3 % of girls and 17.7% of boys, who preferred school without lessons ($p<0.001$). Older students (15.7 %) more often did not want lessons at school than younger students (11.9 %, $p<0.001$). Students living in rural areas found school more attractive than students living in the cities. 15.9 % of students living in the urban areas would like to be at school with breaks only and among students living in rural areas the proportion was 12.8 % ($p = 0,01$).

3.5.2. Psycho emotional status at school

The psycho emotional status of students at school was assessed asking the questions, related with the inner relations among teachers and students. The majority (77.4 %) of students stated that relationships with teachers are good, or they are good with some teachers, 6.8 % of students thought that these relationships are unsatisfactory.

More than a half (57.8 %) of interviewed students stated that there were no teachers at school they would be afraid, but 21.6 % students said they were afraid of more than one teacher. This affirmation is different depending on gender (χ^2 = 22.501, df = 2, p<0.001), grade (χ^2 = 46.548, df = 2, p<0.001) and residence (χ^2 = 39.998, df = 3, p<0.001). There were more girls (23.7 %) than boys (19.3 %, p = 0,001) stating that there were teachers at school they were afraid. There were more eighth grade students (55.7 %) than sixth grade students (60.0 %, p = 0.006) stating that they were not afraid of teachers. The students in rural schools feel less fear than students in urban schools: 26.7 % of students living in the city stated that there are several teachers in their school they were afraid. Among students living in rural areas proportion was 18.8 % (p<0.001).

Almost two thirds (71.7 %) of students responded that there were no students at school whom they would be afraid. However 6.7 % of students stated that there are number of students whom they were afraid. This assessment was similar depending on residence (χ^2 = 0.634, df = 2, p = 0.728), but different according to the grade (χ^2 = 39.051, df = 2, p<0.001), and gender (χ^2 = 22.501, df = 2, p<0.001). Boy's psycho emotional status was worse than girls. More boys (23.7 %) than girls (19.6 %, p=0,002) indicated that there were few students that they were afraid. Sixth grade students more often (25.6 %) than eighth grade students (17.9 %, p<0.001) indicated that there are number of students whom they were afraid. A majority of students living in a urban (71.9 %) and in rural areas (71.6 %, p=0,83) indicated that there were no students in their environment, whom they would be afraid.

The answers of students to the question "Are there any teachers at school whom you are afraid"? correlated with an answer "Are there any students at school whom you are afraid?" (r_s = 0.211, p<0.001). The students who indicated that there are teachers, whom they are afraid, also indicated that there are students whom they are afraid at school.

The proportion of students indicating that they are not afraid of teachers was twice bigger (66.3 %) among those who stated that educational load corresponds their capabilities, than among those (44.7 %, p<0.001), who stated that educational load is excessive, also more students indicating that educational load is excessive were afraid of several teachers.

Less than a half (40.0 %) students responded that they feel calm at school, 54.1 % feel tension, and the remaining 5.8 % of students always feel tension at school. The distribution of answers in the groups according to gender (χ^2 = 63.878, df = 2, p<0.001), grade (χ^2 = 22.883, df = 2, p<0.001) and residence (χ^2 = 36.875, df = 2, p<0.001) was different. Students living in rural areas more often (43.6 %) indicated that they feel calm at school than those living in the city (33.5 %, p<0.001). Direct correlative link (r_s = 0,169, p<0,001) among the relations of teachers and students and the status of a schoolchild at school was found. The better the relationship among students and teachers are, the safer the students feel.

Students, thinking that educational load is excessive more often feel tension than those, who had evaluated their educational load as corresponding to their capabilities (χ^2 = 286.272, df = 2, p<0.001). One quarter (25.9 %) of students having an opinion that their educational load is excessive, indicated that they usually feel safe at school, and among students having educational load corresponding their capabilities this number was twice less (50.5 %, p<0.001).

3.5.3. Physical environment of school

More than a half (58.1 %) students assessed the environment of the school as good according to eleven criteria that were provided and only 1.4 % of students assessed the environment of their school as a poor. No one student indicated the environment at school as a very poor. Assessment was similar in groups according to the gender (χ^2 = 8.198, df = 3, p = 0.042) and different according to the grade (χ^2 = 174.447, df = 3, p<0.001) and residence (χ^2 = 193.017, df = 3, p<0.001). Sixth grade students (30.8 %) and the students living in rural areas (28.1 %) more often evaluated the status of school as a very good than eighth grade students (15.0 %) and students living in the city (12.5 %).These differences were statistically significant. Students from basic schools more often evaluated the status of school as a very good than students from secondary schools (p<0.001).

Physical estimation of school's environment relating it with an educational load was not similar (χ^2 = 207.88, df = 3, p<0.001). More than a quarter (26.9 %) of students having indicated educational load as excessive evaluated the environment of their school as satisfactory. Very good estimation usually came from students evaluating their educational load as corresponding to their capabilities (28.5 %), than those having excessive educational load (14.4 %, p<0.001).

3.6. Daily regime and educational load

3.6.1. Sleeping

Assessing one of the main elements of daily regime – the sleep at night, only one third (32.8 %) of students indicate that they sleep 9-10 hours or more on working days, that its recommendations for the children of this age. Students living in rural areas more often (35.9 %) than students living in the city (27.1 %, p<0.001) sleep as much as it is recommended for the children of this age. However even 26.4 % of students sleep only 7 hours a day, the shortage of sleep is also demonstrated by the answer to the question "Does it happen that you want to sleep during the daytime?": 53.4 % responded "yes", 28.3 % responded "sometimes". The results of research showed that a weak correlative link (r_s = 0.138, p<0.001) between the duration of children night sleep and willingness to sleep in a daytime exists: the children who sleep less than it is recommended at night more often want to sleep in a daytime. The duration of sleep was not the same depending on educational load (χ^2 = 207.88, df = 3, p<0.001). Students, evaluating educational load as excessive, more often (31.9 %) indicated that they sleep only 7 hours per night, than those, indicating educational load as corresponding their capabilities (23.4 %, p<0.001). The issue of sleep shortage was also indicated by approximately one third of parents. Overall 41.7 % parents expressed their opinion that the shortage of sleep negatively affects the health and well-being of their child.

3.6.2. Out door time

One third (33.8 %) of children spend as much time as it is recommended for the children of this age, that is approximately three hours. Boys more often (46.0 %) than girls (22.7 %, $p<0.001$) and children from rural areas more often (39.2 %) than children from the city (25.1 %, $p<0.001$) spend as much time as it is recommended for their age on working days. The proportion of sixth and eighth grade students spending as much time as it is recommended is similar (35.0 % and 33.5 %, $p = 0.276$ respectively) However, evaluating the period of the out door time at weekends, the number of children spending as much time as it is recommended increases up to two thirds: 65.4 % of children indicated that they spend three hours in fresh air per day. The tendencies depending on gender, residence and grade are similar as on the working days. Students having excessive educational load (30.2 %) spend out door time less often than children having educational load corresponding their capabilities (36.9 %, $p<0.001$). Similar number of children spend about one hour in fresh air per day: both students having excessive educational load (23.3%) and having adequate educational load (25.1 %, p=0,227). Students who indicated their educational load as corresponding to their capabilities more often spend as much out door time as it is recommended for their age than students who stated their educational load as excessive ($\chi^2 = 31.318$, df = 3, $p<0.001$).

3.6.3. Watching TV, working with computer

Overall 60.3 % of children spend 2-3 hours watching TV. Of them 18.7 % watch television more than three hours per day. The number of students spending more time watching TV than it is recommended was similar by gender (boys – 59.3 %, girls – 61.0 %, $p = 0.339$), grade (6^{th} grade students – 60.1 %, 8^{th} grade students – 60.4 %, $p = 0.827$) and residence (urban area – 60.0 %, rural area – 60.3 %, $p = 0.833$) . Students assessing their educational load as corresponding to their capabilities spent more time watching TV (Mann-Whitney U = 1312006.00, $p<0.001$). One hour per day watching TV usually spent students having excessive educational load (33,5 %) the similar duration was among those students who indicated educational load corresponding their capabilities (27.9 %, $p<0.001$). The number of both: students having excessive educational load (18.6 %) and having educational load corresponding their capabilities (18.9 %, $p = 0.804$) watching TV more than 3 hours a day is similar.

The children of our days have one more analogue for the TV, having important impact on health, available – that is a computer. The data of research indicated that 30.7 % of students spent 2 or more hours in front of computer on working days. The data of research showed that a weak correlative link ($r_s = 0.133$, $p<0.001$) between periods of time spent for the TV or computer exists: children, spending more time in front of TV also spend more time in front of computer. The boys more often (43.5 %) than girls (19.0 %, $p<0.001$), the eighth grade students more often (32.8 %) than sixth grade students (29.3 %, $p = 0.030$), and students living in the city more often (38.5 %) than those living in the rural areas (27.1 %, $p<0.001$) spend 2 or more hours in front of computer on working days. Both: students considering their educational load as excessive and considering their educational load as corresponding to their capabilities spend the similar period of time in front of computer (Mann-Whitney U = 1447438.00, $p = 0.838$).

3.7. Health and educational load

3.7.1. Well-being

Assessing general well-being, 46.6 % of students stated that they usually feel calm, however there were less students feeling like that at school (40.0 %, $p<0.001$). High proportion (24.0 %) students who participated in the research were not able to evaluate their well-being. However one fifth (20.9 %) students assessed their mood as irritable, nervous. Self-assessment was different in groups depending on the gender (χ^2 = 102.603, df = 5, $p<0.001$) and grade (χ^2 = 66.030, df = 5 , $p<0.001$), similar depending on residence (χ^2 = 10.864, df = 5, p = 0.054). Boys more often (53.4 %) than girls (40.2 %, $p<0.001$), sixth grade students (52.3 %) more often than eighth grade students (40.2 %, $p<0.001$) indicated that usually they feel calm. Students well-being depending on the assessment of educational load was different (χ^2 = 252.00, df = 4, $p<0.001$). More than a half (57.7 %) of children having educational load corresponding their capabilities, indicated that they feel calm, whereas the number of students having excessive educational load and feeling calm was lower (32.4 %, $p<0.001$). Number of children who assessed their mood as irritative, nervous among the students having excessive educational load was twice higher (29.9 %), than among those having adequate educational load (15.2 %, $p<0.001$).

The majority (83.0 %) students responded that their relationship with parents were good. The proportion of parents having this opinion was higher (89.3 %, $p<0.001$) . The fact that the opinions of children and parents were not similar was also confirmed by the answers of the parents themselves "In your opinion, do you always know what problems are your children confronting?": only 71.9 % answered positively.

The evaluation of relationship between parents and students depending on the assessment of educational load was different among students (χ^2 = 48.886, df = 3, $p<0.001$), similar among parents (χ^2 = 3.792, df =3, p = 0.258). Students who had adequate educational load for growing up organism more often (86.9 %) named their relationship with parents as good than those who had excessive educational load (78.1 %, $p<0.001$). No links between parents' assessment of children's educational load and relationship between students and parents were indicated.

Relationship between students and parents were also reflected administering question "Do you often tell your parents about the school?". The majority (68.5 %) students responded that they tell their parents about the school every day or almost every day. However there was also students (3.7 %) who did not tell their parents nothing about the school at all. This estimation was different in groups depending on residence (χ^2 = 32.912, df = 3, $p<0.001$) and age (χ^2 = 47.920, df = 2, $p<0.001$). Getting older, students more rarely share their impressions about school with their parents. In the group of 11 years age 38.5 % of students tell their parents about school each day, in the group of 15 years age – 24.3 %. The proportion of students living in the urban areas and in the rural areas telling their parents about the school every day is similar (30.4 %. ir 28.2 %, p = 0.161).

One fifth (20.3 %) students who participated in the research responded that they always come back tired from school, 55.0 % – sometimes. The proportion of parents thinking this way was smaller. Parents indicating educational load as excessive more

often noticed the tiredness of their children than those evaluating educational load as corresponding the capabilities of the child (Mann-Whitney U = 220747.00, $p<0.001$).

The tiredness experienced by the students was also reflected in the answers concerning their well-being in the morning. Approximately one fifth (18.2 %) students stated that they always feel well in the morning, 45.6 % – not always feeling rested in the morning. Distribution of students according to the well-being in the morning depending of educational load was different ($\chi^2 = 292.107$, df = 2, $p<0.001$).

The proportion of students who not always feel rested in the morning was twice higher (62.4 %) in the group of students having excessive educational load than in the group of students having educational load corresponding their capabilities (34.2 %, $p<0.001$). One quarter (25.0 %) of students having educational load corresponding their capabilities feel always rested in the morning, whereas among the students who had excessive educational load this group was only one tenth (9.2 %).

The shortage of rest is also reflected in their answers concerning the feeling of tiredness when going to school. Even 89.3 % of students mentioned that they feel tired when go to school, 10.7 % of them indicated that they feel always like that.

3.7.2. Health

Self evaluation data on students health showed that 69,6% of students evaluated their health as very well or well. The evaluation of students' health depending on subjectively evaluated educational load was differently assessed by both: children ($\chi^2 = 169.130$, df = 4, $p<0.001$), and their parents ($\chi^2 = 41.240$, df = 2, $p<0.001$). It was indicated that the health of students as poor or very poor was more often (5.7 %) evaluated by students and parents having evaluated educational load as excessive, in the comparison with respondents, having evaluated educational load as corresponding their capabilities (1.1 %, $p<0.001$).

The results of research showed that 16.1 % of children complained about their health. Most common complaint, mentioned by children was a headache (29.8 %). Student's complaints regarding their health, depending on educational load were different ($\chi^2 = 134.250$, df = 2, $p<0.001$). The proportion of students complaining about their health was twice higher (23.9 %) among students having excessive educational load than among students having educational load corresponding their capabilities (11.0 %, $p<0.001$).

Only 19.2 % of students indicated that they were not sick last year at all. Among the students who was sick 28.4 % of them responded that they were sick four or more times per year . The number of students that were more often sick was higher among students having higher educational load, in comparison with children having smaller educational load ($\chi^2 = 36.464$, df = 2, $p<0.001$).

One quarter (25.1 %) of parents and 28.3 % of students indicated that due to the illness students had to limit their usual activity, including attendance the clubs of non-formal education. The reduction of usual activity by assessment of educational load was differently assessed by both: students ($\chi^2 = 73.100$, df = 2, $p<0.001$) and parents ($\chi^2 = 26.035$, df = 2, $p<0.001$). There were more (13.2 %) parents indicating that children had to limit their usual activity in the group of parents evaluating educational load as excessive, than in the group of parents having opinion that educational load corresponds the capabilities of their child (9.5 %, $p<0.001$). Responses of children also show that usual activities were more often limited by students, having indicated that educational load is

excessive, than those, having indicated that educational load corresponds to their capabilities ($p<0.001$).

Evaluating the changes of children's health, the majority (78.1 %) of parents indicated that the health of children did not change during last year, and 12.1 % indicated that the health worsened. Parents' opinion concerning the changes of child's health was different depending on the assessment of educational load ($\chi^2 = 22.810$, df = 2, $p<0.001$).

Negative tendencies of children's health were also noticed by the teachers. Overall 52.6 % of teachers indicated that, during the last year the health of students worsened. The link of students health status and educational load was identified ($\chi^2 = 17.331$, df = 3, $p = 0.001$).

In order to find out the factors influencing poor health assessment and the influence of excessive educational load , the model was built, the variables of which could explain the situation. Variables included: subjective assessment of educational load, sleep duration at nights on working days, duration of out door time on working days, smoking, hungriness, duration of TV watching, the duration of time spent in front of computer. The odds ratio (OR) was calculated (Table 6). The controlled factors involved: family status, shift of learning, physical environment of school, well-being at school, and relationship with parents.

Table 6. Factors influencing bad evaluation of health (univaritate analysis)

Influencing factors	Odds ratio (OR)	95 % Confidence Interval	p
Excessive educational load	2.49	2.15–2.89	p<0.001
Insufficient night sleep	1.42	1.21–1.67	p<0.001
Short out door time	1.42	1.21–1.66	p<0.001
Smoking	1.15	0.89–1.50	p=0.281
Hungriness	1.57	1.34–1.86	p<0.001
Long TV watching	0.97	0.83–1.12	p=0.649
Long computer time	0.81	0.69–0.96	p=0.012

Stepwise logistic regression involved these statistically significant controlled factors: family status, shift of learning, physical environment of school, well-being at school, and relationship with parents. When logistic regression was conducted, it was indicated that excessive educational load influences evaluation of health (Table 7).

The results of research show that the substantial influence for the poor health assessment considering students' opinion is related with excessive educational load, insufficient night sleep, short out door time and not having the opportunity to eat when students feel hungriness.

Table 7. Factors influencing bad evaluation of health (multilevel logistic regression)

Influencing factors	Total OR	95 % Confidence Interval	Odds ratio (OR_c)*	95 % Confidence Interval	p
Excessive educational load	2.49	2.15–2.89	1.98	1.69–2.32	p<0.001
Insufficient night sleep	1.42	1.21–1.67	1.23	1.04–1.45	p=0.018
Short out door time	1.42	1.21–1.66	1.24	1.05–1.47	p=0.012
Hungriness	1.57	1.34–1.86	1.24	1.04–1.48	p=0.015

* corrected controlling family status, shift of learning, well-being at school, relationships with parents

4. CONCLUSIONS

1. More than one third (37.0 %) of sixth and eighth year students from Lithuanian schools of general education assessed their educational load to be excessive. The proportion of parents who had the same opinion was even higher (45.1 %) comparing with students, but less than the proportion of teachers (55.6 %, $p<0.05$). More girls than boys, more older students than younger students, more students living in the urban area than those living in the rural areas evaluate educational load as to be exceeded. Mothers more often than fathers indicated that the educational level excessive. The evaluation of educational load depends on how often parents communicate with the child and the period of time they impose to do homework. Teachers evaluate educational load depending on their gender, work record, professional qualification and the number of students in their classes.

2. Assessing educational load as to be excessive, assessment is particularly influenced by: irrational timetable at school ($OR_c= 2.84$), factual educational load, exceeding 35 hours a week ($OR_c= 2.56$), more than one test per day ($OR_c= 1.42$) and additional studies ($OR_c= 0.80$). The clubs of non-formal education do not have significant influence.

3. Excessive educational load has negative impact on the of children's health ($OR_c= 2.48$). Those students whose self-assessment of their educational load was excessive, more often assessed their health as poor or very poor. They were more often sick and have to limit or to stop their daily activity because of these health disorders .

4. The schools only partially implement the requirements of educational process, indicated in Lithuanian hygiene norm HN 21 "General education schools. General requirements for health safety".

5. The coordination of tests time between teachers themselves and between teachers and students is an effective measure for the optimisation of educational load. Imposition of homework depends on teacher's opinion concerning the sufficiency of lessons for his/her subject. Parents can influence the educational load of their children.

6. The links indicated between educational load and psycho emotional well-being of students: students, evaluating educational level as excessive more often feel tension at school, their motivation of learning is weaker, they evaluate school as institution more negatively, feel bigger fear of children and teachers, general well-being of children usually is more nervous. Those students who expressed their opinion in relation to educational load as corresponding to their capabilities had better relationship with parents. Excessive educational load also influences the elements of daily regime.

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REZIUMĖ

Vaikai nėra maži suaugusieji. Besivystantis organizmas yra jautrus ir, greitai augant ir formuojantis organams bei sistemoms, pereina ypatingus, vadinamuosius kritinio jautrumo „langus“, kai aplinkos veiksnių neigiamas poveikis gali turėti įtakos vaiko raidai. Vaikai negali daryti įtakos juos supančiai aplinkai, ir tik nuo suaugusiųjų priklauso kokioje aplinkoje jie gyvena, žaidžia, mokosi ir kartais dirba. Lietuvoje vaikai sudaro apie ketvirtadalį visos visuomenės. Oficialioji vaikų sveikatos statistika byloja, kad vaikai nėra sveikiausioji visuomenės dalis: bendras vaikų sergamumas yra didesnis kaip suaugusiųjų; kasmet profilaktinių patikrinimų metu išaiškinama vis daugiau sveikatos sutrikimų ir jų daugėja su kiekviena mokyklos pakopa; daugėja vaikų, sergančių lėtinėmis ligomis.

Mokymasis – tai valstybės deleguota prievolė vaikui. Lietuvos Respublikos Konstitucija nustato, kad asmenims iki 16 metų mokslas yra privalomas. Švietimo sistemos aplinka yra neatskiriama kiekvieno vaiko aplinkos dalis, kuri turi įtakos jo raidai bei vystymuisi. Mokymosi krūvio subalansavimas, darbo ir poilsio režimo normų laikymasis – tai būtinos sąlygos, augančio vaiko normaliam protiniam ir fiziniam vystymuisi.

Darbo tikslas – nustatyti bei įvertinti Lietuvos bendrojo lavinimo mokyklų 6 ir 8 klasių mokinių mokymosi krūvį bei jo sąsajas su sveikata.

Darbo uždaviniai

Pagrindiniai:

1. Nustatyti 6 ir 8 klasių mokinių mokymosi krūvio problemos aktualumą mokyklose, vykdančiose pagrindinio ugdymo programą.
2. Identifikuoti priežastis, sąlygojančias per didelį mokymosi krūvį.
3. Nustatyti mokymosi krūvio sąsajas su mokinių sveikata.

Papildomi:

● Nustatyti Lietuvos Respublikos sveikatos apsaugos ministerijos reguliavimo srities teisinės bazės, reglamentuojančios mokinių ugdymo proceso organizavimą, įtaką mokymosi krūvio optimizavimui.

● Įvertinti mokinių, mokytojų bei tėvų (globėjų, rūpintojų) galimą įtaką mokymosi krūvio optimizavimui.

● Nustatyti mokymosi krūvio sąsajas su mokinių savijauta ir dienos režimo elementais.

Darbo aktualumas

Lietuvos higienos normos, reglamentuojančios ugdymo proceso organizavimo aspektus, rengiamos remiantis tradicijomis ir tuo metu galiojusiais normatyvais, papildant jas kitų šalių patirtimi. Lietuvos teisės aktuose teikiami ugdymo proceso reikalavimai, ypač kiekybine išraiška, dažnai yra nepagrįsti moksliniais tyrimais, nes iki šiol tokie tyrimai buvo fragmentiški, neatspindintys Lietuvos situacijos. Nors teisinė šios problemos reglamentacija yra gana griežta, tačiau ir fragmentiškuose tyrimuose mokymosi krūvis bendrojo lavinimo mokyklose jau yra konstatuojamas kaip per didelis. Skirtingai vertinama ir interpretuojama sąvoka „per didelis mokymosi krūvis“. Vykdant švietimo reformą bei ieškant lankstesnių ugdymo proceso organizavimo būdų, griežtas kiekybinis ugdymo proceso organizavimo elementų reglamentavimas gali būti kliūtis naujoms ugdymo formoms diegti. Galimas šios srities liberalizavimas taip pat turi būti paremtas moksliniais tyrimais.

Mokslinis darbo naujumas

Iki šiol Lietuvoje nėra atlikta tyrimų, skirtų įvertinti Lietuvos bendrojo lavinimo mokyklų pagrindinio ugdymo programos mokinių mokymosi krūvį, atsižvelgiant į Lietuvos švietimo sistemos sandaros ypatumus ir mokyklos tipus bei kalbą, kuria vykdomas ugdymas. Šiame darbe išanalizuoti šios ugdymo programos mokinių (6 ir 8 klasių) mokymosi ypatumai, nustatytos per didelio mokymosi krūvio priežastys bei jo sąsajos su mokinių sveikata.

Ginamieji disertacijos teiginiai:

1. Šeštų ir aštuntų klasių mokinių mokymosi krūvis per didelis, o jo reguliavimo galimybės, nustatytos Lietuvos Respublikos sveikatos apsaugos ministerijos reguliavimo srities teisės aktais, yra formalios ir praktikoje ne visos įgyvendinamos.
2. Blogėjančiai paauglių sveikatai daro įtaką per didelis mokymosi krūvis.
3. Mokiniai, mokytojai ir tėvai gali įtakoti mokymosi krūvio optimizavimą.

Tyrimo metodika

Šis tiriamasis darbas atliktas etapais: situacijos analizės tyrimas, literatūros apžvalga bei Lietuvos teisinės bazės, reglamentuojančios ugdymo proceso organizavimą, analizė, bandomasis tyrimas ir pagrindinis tyrimas, atliktas 2005 m. lapkričio 14–28 d. Tyrimo metu anonimiškai anketiniu būdu apklausti 3852 mokiniai, 1038 mokytojai, 1626 tėvai (globėjai, rūpintojai). Anketos parengtos originalios. Mokinio anketa sudaryta iš 84, mokytojų – 28, tėvų – 24 klausimų. Tyrimui atlikti gautas Lietuvos Respublikos švietimo ir mokslo ministerijos pritarimas, Lietuvos bioetikos komiteto leidimas ir tyrime dalyvavusių mokyklų vadovų sutikimai.

Statistinė duomenų analizė ir vertinimas

Statistinė analizė atlikta panaudojant SPSS *(Statistical Package for Social Sciences)* programinę įrangą (11.0 versija) ir WinPepi 1.45 (2006 m.) kompiuterinę programą.

Tolydiesiems kintamiesiems naudoti standartiniai aprašomosios statistikos rodikliai: parametrų aritmetinis vidurkis, standartinis nuokrypis, mediana, moda, minimali bei maksimali reikšmė. Hipotezės apie dviejų nepriklausomų respondentų grupių tolydžių kintamųjų požymių lygybę buvo patikrintos taikant Stjudento t testą. Dvi tolydžių kintamųjų, kurios turėjo nenormalius skirstinius, grupės lygintos Mann-Whitney U testu. Ranginių kintamųjų sąsajoms nustatyti naudotas Spearmen‘o koreliacijos koeficientas (r_s). Kategorinių duomenų analizei naudotas χ^2 ir Fišerio tikslusis metodas. Hipotezei patikrinti buvo panaudotas reikšmingumo lygmuo $\alpha = 0,05$. Rezultatų skirtumas laikytas reikšmingu, kai gauta p reikšmė buvo mažiau arba lygi 0,05. Rizikos veiksniams įvertinti taikytas atgalinės laiptinės logistinės regresijos metodas.

Rezultatai

Iš tyrime dalyvavusių 3744 mokinių, apie pusę jų sudarė šeštokai (47,7 proc.), berniukai (48,4 proc.) bei didesnė dalis gyvenančių kaimo tipo gyvenamosiose vietovėse (64,4 proc.). Gana didelė dalis mokinių nežino savo tėvų išsilavinimo (motinos – 36,5 proc., tėvo – 43,2 proc.) Didžioji dalis (96,9 proc.) respondentų namie bendrauja lietuvių kalba ir gyvena su abiem tėvais (78,1 proc.). Tyrime dominavo mokytojos moterys (84,4 proc.), turinčios didesnį nei 15 metų darbo stažą (61,8 proc.) ir aukštąjį išsilavinimą

(90,4 proc.). Pagal dėstomą dalyką didžiausią dalį sudarė kalbų mokytojai (37,2 proc.). Tyrime dalyvavo 49,1 proc. tėvų, kurių vaikai mokėsi 6-oje klasėje, ir 50,9 proc. tėvų, kurių atžalos mokėsi 8-oje klasėje. Didžiąją dalį respondentų sudarė motinos (66,2 proc.).

Subjektyvaus mokymosi krūvio vertinimo rezultatai atskleidė, kad tiek mokiniai (37,0 proc.), tiek tėvai (45,1 proc.) bei mokytojai (55,6 proc.) kelia per didelio mokymosi krūvio problemą. Mokymosi krūvio vertinimas priklauso nuo respondentų lyties, gyvenamosios vietovės, klasės, tėvų bendravimo dažnumo su vaiku bei vaiko namų darbams skiriamo laiko. Mokytojų mokymosi krūvio vertinimas taip pat priklauso ir nuo jų darbo stažo mokykloje, profesinės kvalifikacijos bei mokinių skaičiaus jų dėstomose klasėse.

Faktiško mokymosi krūvio rezultatai patvirtino subjektyvaus mokymosi krūvio vertinimo rezultatus: didesnis mokymosi krūvis daugiau būdingas mergaitėms nei berniukams, vyresniems mokiniams nei jaunesniems, mieste gyvenantiems nei kaime. Faktiškas mokymosi krūvis yra didesnis tų mokinių, kurie savo mokymosi krūvį vertino kaip per didelį ($p<0,001$). Neformaliojo ugdymo būreliai bendrą vaiko krūvį vidutiniškai padidina apie 2 val. per savaitę.

Ugdymo proceso organizavimas mokykloje ne visai atitinka Lietuvos higienos normoje HN 21 „Bendrojo lavinimo mokykla. Bendrieji sveikatos saugos reikalavimai“ nustatytus reikalavimus. Ne visi ugdytojai (66,5 proc.) žino apie šį teisės aktą. Privalomų pamokų mokykloje skaičiaus vidurkis tiek šeštose (29,07±0,9), tiek aštuntose (31,18±0,97) klasėse iš esmės atitinka teisės aktuose reglamentuotą maksimalų pamokų skaičių mokykloje. Mokiniai, kurie mokymosi krūvį vertino kaip per didelį, dažniau turėjo daugiau pamokų nei reglamentuota ($p<0,001$). Mokytojų nuomonė dėl jų dalykui skiriamų pamokų skaičiaus pakankamumo bei galimybės išdėstyti programą buvo skirtinga pagal mokymosi krūvio vertinimą. Kontrolinių darbų vidurkis buvo didesnis tų mokinių, kurie mokymosi krūvį vertino kaip per didelį (2,51), nei mokinių, turinčių adekvatų mokymosi krūvį (1,98; $p<0,001$). Kontrolinių darbų planavimas su mokytojais, dėstančiais tai pačiai klasei (79,3 proc.) bei pačiais mokiniais (78,1 proc.) – gana dažnai naudojama mokymosi krūvio optimizavimo priemonė. Nustatytos skirtingos namų darbų apimtys pagal pažangumą, namų darbų ruošimo laiką. Mokiniai, kurie savo mokymosi krūvį vertina kaip per didelį, namų darbų ruošimui skiria daugiau laiko (šeštokai – vidutiniškai 8,04 val. per savaitę, aštuntokai – 8,34 val.) nei tie mokiniai, kurie mokymosi krūvį vertina kaip atitinkantį jų galimybes (šeštokai – 6,7 val., aštuntokai – 7,07 val., $p<0,001$). Mokytojai namų darbus skiria atsižvelgdami į tikslą, kurio siekia skirdami namų darbus. Tėvų, kurių vaikai namų darbų ruošimui skiria daugiau laiko manančių, kad mokymosi krūvis yra per didelis, buvo daugiau, nei tėvų, kurių vaikai namų darbus ruošia trumpiau ($p=0,05$). Papildomas mokymasis, susijęs su siekiu turėti geresnes žinias, padidina mokymosi krūvį vidutiniškai 2,5–3 val. per savaitę papildomai besimokantiems vaikams. Tyrimo rezultatai rodo, kad didžiausią įtaką per didelio mokymosi krūvio vertinimui turi neracionalus pamokų tvarkaraštis mokykloje ($ŠS_p$ = 2,84), faktiškas mokymosi krūvis, viršijantis 35 val. per savaitę ($ŠS_p$ = 2,56), daugiau nei vienas kontrolinis darbas per dieną ($ŠS_p$ = 1,42) ir papildomas mokymasis ($ŠS_p$ = 0,80).

Tiek mokytojai (40,7 proc.), tiek tėvai (23,6 proc.) turi galimybę prisidėti prie mokymosi krūvio optimizavimo. Būrelius lankantys mokiniai šiai veiklai per savaitę vidutiniškai skiria 3,2 valandos, kas antro vaiko būrelių užsiėmimų trukmė – 2,25 val.

per savaitę. Neformaliojo ugdymo būreliai esminės įtakos per dideliam mokymosi krūviui neturi.

Požiūris į mokyklą ir mokyklos, kaip teigiamos institucijos, vertinimas priklauso nuo mokinio motyvacijos mokytis bei nusistatytų ateities tikslų. Mokiniai, manantys, kad jų mokymosi krūvis per didelis, yra mažiau motyvuoti mokymuisi, blogiau vertina mokyklą kaip instituciją, nei mokiniai, jų nuomone, turintys jų galimybes atitinkantį krūvį ($p<0,001$). Psichoemocinė savijauta mokykloje priklauso nuo mokykloje vyraujančių mokytojų ir mokinių bei mokinių tarpusavio santykių ($r_s = 0,169$, $p<0,001$): kuo mokinių ir mokytojų santykiai geresni, tuo mokiniai mokykloje jaučiasi ramiau. Taip pat nustatytos ir per didelio mokymosi krūvio bei savijautos mokykloje sąsajos. Fizinės mokyklos aplinkos vertinimas buvo skirtingas priklausomai nuo mokinio klasės, gyvenamosios vietovės, mokyklos tipo bei mokymosi krūvio.

Nakties miego stoka – dažna šio amžiaus periodo mokinių problema, kurią pripažįsta ir patys mokiniai (53,4 proc.) ir jų tėvai (41,7 proc.). Per didelis mokymosi krūvis neigiamai atsiliepia šiam dienos režimo elementui: tik apie trečdalis (32,8 proc.) mokinių nakties miegui darbo dienomis skiria tiek laiko, kiek rekomenduojama šio amžiaus vaikams. Rekomenduojamą gryname ore laiką mokiniai dažniau būna savaitgaliais (65,4 proc.), nei darbo dienomis (33,8 proc.). Per didelis mokymosi krūvis turi sąsajų ir su šiuo dienos režimo elementu. Laikas prie televizoriaus ar kompiuterio gana dažnai yra didesnis nei rekomenduojamas šio amžiaus vaikams. Nustatytos sąsajos tik tarp mokymosi krūvio ir prie televizoriaus praleisto laiko trukmės.

Mokinio savijautos vertinimas pagal mokymosi krūvio vertinimą buvo skirtingas: per didelį mokymosi krūvį turintys mokiniai dažniau būna irzlesni, blogesni jų santykiai su tėvais, dažniau jaučia nuovargį, nei adekvatų krūvį turintys mokiniai. Respondentų nuomonė apie nuovargį įtakojančius veiksnius buvo skirtinga. Mokiniai, kurie savo mokymosi krūvį vertino kaip per didelį, dažniau savo sveikatą vertino kaip blogą ar labai blogą, dažniau sirgo, dėl sveikatos sutrikimų turėjo mažinti įprastinę veiklą ($p<0,001$). Didžiausią įtaką blogam savo sveikatos vertinimui turi per didelis, mokinių nuomone, mokymosi krūvis ($ŠS_p = 1,98$), nepakankamas nakties miegas ($ŠS_p = 1,23$), trumpas laikas praleistas gryname ore ($ŠS_p = 1,24$) bei neturėjimas galimybių pavalgyti, esant alkio jausmui ($ŠS_p = 1,24$).

Išvados:

1. Daugiau kaip trečdalis (37 proc.) Lietuvos bendrojo lavinimo mokyklų 6 ir 8 klasių mokinių savo mokymosi krūvį vertina kaip per didelį. Taip vertinančių mokymosi krūvį tėvų daugiau (45,1 proc.) nei mokinių, bet mažiau nei mokytojų (55,6 proc., $p<0,05$). Daugiau mergaičių nei berniukų, vyresnių klasių nei jaunesnių, mieste gyvenančių nei kaime mokinių vertina mokymosi krūvį kaip per didelį. Motinos dažniau negu tėvai (vyrai) mokymosi krūvį vertina kaip per didelį. Mokymosi krūvio vertinimas priklauso nuo tėvų bendravimo dažnumo su vaiku bei vaiko namų darbų ruošimui skiriamo laiko. Mokytojų mokymosi krūvio vertinimas priklauso nuo jų lyties, darbo stažo mokykloje, profesinės kvalifikacijos bei mokinių skaičiaus jų dėstomose klasėse.

2. Mokymosi krūvio kaip per didelio vertinimui esminės įtakos turi: neracionalus pamokų tvarkaraštis mokykloje ($ŠS_p = 2,84$), faktiškas mokymosi krūvis, viršijantis 35 val. per savaitę ($ŠS_p = 2,56$), daugiau nei vienas kontrolinis darbas per dieną ($ŠS_p = 1,42$) ir papildomas mokymasis ($ŠS_p = 0,80$). Neformaliojo ugdymo būreliai esminės įtakos tokiam vertinimui neturi.

3. Per didelis mokymosi krūvis daro įtaką blogam savo sveikatos vertinimui ($ŠS_p$ = 1,98). Mokiniai, kurie savo mokymosi krūvį vertina kaip per didelį, dažniau savo sveikatą vertina kaip blogą ar labai blogą, dažniau serga, dėl sveikatos sutrikimų turi mažinti įprastinę veiklą.

4. Mokyklos tik iš dalies įgyvendina ugdymo proceso reikalavimus, nustatytus Lietuvos higienos normoje HN 21 „Bendrojo lavinimo mokykla. Bendrieji sveikatos saugos reikalavimai“.

5. Kontrolinių, namų darbų skyrimo derinimas tarp mokytojų ir su mokiniais yra efektyvi priemonė optimizuojant mokymosi krūvį. Namų darbų skyrimas priklauso nuo mokytojo nuomonės apie jo dalykui skiriamų pamokų skaičiaus pakankamumo. Tėvai gali daryti įtaką vaiko mokymosi krūviui.

6. Nustatytos mokymosi krūvio ir mokinių psichoemocinės savijautos sąsajos: mokiniai, vertinantys mokymosi krūvį kaip per didelį, dažniau jaučia įtampą mokykloje, silpnesnė jų motyvacija mokytis, blogiau vertina mokyklą, kaip instituciją, jaučia didesnę mokytojų ir mokinių baimę, bendra mokinių savijauta būna dažniau nervingesnė. Geresnius santykius su tėvais nurodo tie mokiniai, kurių nuomone, mokymosi krūvis atitinka jų galimybes. Per didelis mokymosi krūvis neigiamai atsiliepia ir dienos režimo elementams.

PADĖKA

Ypatingą padėką reiškiu
Valstybinio aplinkos sveikatos centro direktoriui Erikui Mačiūnui,
sudariusiam sąlygas ir padėjusiam atlikti šį darbą.

Dėkoju už geranoriškumą ir padėjusiems atlikti tyrimą:
Visuomenės sveikatos centrų apskrityse vadovams ir specialistams;
Tyrime dalyvavusių mokyklų vadovybei ir atsakingiems darbuotojams.

Už mokslines konsultacijas ir pagalbą nuoširdus Ačiū
Vilniaus universiteto Medicinos fakulteto
Visuomenės sveikatos instituto kolektyvui.