

Selected Safety Issues During The First Wave of The Coronavirus Pandemic at Elementary and Secondary Schools*

Radim ŠTĚPÁNEK

University of Ostrava-Faculty of Education, Ostrava, Czech Republic

Veronika ŠVRČINOVÁ

University of Ostrava-Faculty of Education, Ostrava, Czech Republic

Svatopluk SLOVÁK

University of Ostrava-Faculty of Education, Ostrava, Czech Republic

Pavel DOSTÁL

University of Ostrava-Faculty of Education, Ostrava, Czech Republic,

Correspondence should be addressed to: Radim ŠTĚPÁNEK; radim.stepanek@osu.cz

* Presented at the 37th IBIMA International Conference, 30-31 May 2021, Cordoba, Spain

Copyright © 2021. Radim ŠTĚPÁNEK, Veronika ŠVRČINOVÁ, Svatopluk SLOVÁK and Pavel DOSTÁL

Abstract

The first wave of the Covid-19 pandemic affected run-in motion of schools in the Czech Republic via the decree from the Department of Health. With the effect from 11 March 2020 the attendance of pupils was forbidden at basic and secondary schools and at colleges. From 11 May 2020 the situation was gradually releasing the students of final grades of secondary schools, conservatories and colleges could attend their lessons especially because of their preparation for school-leaving exams and final exams. Pupils of ninth grades of elementary schools could attend their lessons, too, because of their preparation for entrance examinations to secondary schools. Their attendance was not compulsory and the lessons were performed in groups of maximum 15 people. This article focuses on the analysis of the nation-wide survey in the area of keeping the selected safety issues at schools that realised intensively school lessons for groups of pupils mentioned above. The results of this nationwide research of opinions of teachers were acquired by a questionnaire method. There was a majority of structural items of polytomy character and scale rating of Likert type.

Keywords: Closing Of Schools, Distant Education, Safe Education In The Covid-19 Period, Keeping The Hygienic Instructions, Pedagogy, Students

Introduction

From 11 March 2020 when schools were closed worldwide in 27 states the situation graded very quickly. Within one week this restriction affected most European countries. According to Selber and Winthrop, 1.3 billion students in 186 countries were affected by the closing of schools [1][3].

The primary goal of contribution is to find out the status of hygienic safety at primary and secondary schools during Covid-19 pandemic. As studies according to [2] say the closing of schools before the first appearance of the infection is very progressive and one of the strongest possible non-pharmacological impacts that can help reducing of spreading the disease up to one quarter. In the context of classical school education it is necessary to bear in mind that pupils of elementary and secondary schools are characterized as vectors without symptoms of the disease [4, 5, 6, 7]. The period when the subject does not display symptoms of the disease can last for two weeks, in some measured cases even longer. [8, 9] According to

Cite this Article as: Radim ŠTĚPÁNEK, Veronika ŠVRČINOVÁ, Svatopluk SLOVÁK and Pavel DOSTÁL , Vol. 2021 (3) " Selected Safety Issues During The First Wave of The Coronavirus Pandemic at Elementary and Secondary Schools," Communications of International Proceedings, Vol. 2021 (3), Article ID 3739621.

[10, 11] it is proved that except the respiratory system illness the virus can also infect the digestive tract which is not presented in media. The coronavirus has caused important changes in educational institutions due to the public health emergency. In response to this new situation caused by COVID-19, the UNESCO has recommended that educational institutes equip them with online learning tools [12].

Online lessons were something completely new for the main course of the Czech schools and teachers had no experience with it, especially when speaking about the didactic transformation of curriculum. Even if the results of international researches were known [13, 14, 15, 16] and they show that attitudes and motivation of students can be improved via the online form (for example YouTube as a Stimulator in Assigned English Learning), Czech teachers are conservative and they consider opening of schools and contact lessons as the primary goal.

If schools are supposed to function at least partially in the face to face mode, the most important is keeping the safety rules. This article is trying to answer the question what particular steps were made during the limited education from April to June 2020 and interpret the answers of teachers to selected safety issues connected with the Covid-19 pandemic.

Possible sudden releasing of restrictions could have had consequences and in the extreme cases they could lead to complete defeat of favourable results that the Czech Republic has already achieved in the fight with Covid-19.

Methodology

The nationwide research to acquire necessary data was realised from March to June 2020 via the quantitative method of data collection with the participation of 211 experienced teachers (see Table 1). The whole research on the topic Covid-19 in the school system for period mentioned above contained 42 questions and the incidence rate was 24 %. We choose the data relating to the objective of the contribution to this conference from the measured data.

The main goal of the research was to find out how the selected safety issues connected with the education at primary and secondary schools were kept during the period of the Covid-19 pandemic.

The survey question is: How were the selected safety issues realised at elementary and secondary schools in the context of extraordinary provisions of the Department of Health according to the law no. 25/2000 about the protection of public health and about changing some related laws?

The specified goal mentioned above can be achieved by solving further particular problems that we mark A and B.

Problem A: Were the safety rules kept on certain workplace so nobody with the symptoms of respiratory infections that could match the known symptoms of Covid-19 could enter the school?

Problem B: Were schools equipped enough for possible spread of infection on a workplace during the first wave of Covid - 19?

We form following research hypotheses for problem B:

H1: At least one third of teachers did not receive any protection aids for upper respiratory tract (particularly face masks and protective shields) from their employers in the period from April to June 2020.

H2: Two thirds of schools were equipped with the contactless thermometers for measuring the body temperature from April to June 2020.

H3: Teachers 50+ will be more afraid from the Covid-19 infection up to one third contrasted to younger colleagues in their workplace.

Table 1: Demographic Characteristics

Variables	Frequency	Percent	Variables	Frequency	Percent
Gender			Age Groups		
Male	34	15	18-29	11	5
Female	187	85	30-39	40	18
Magnitude of municipality where the school is			40-49	86	39
A municipality up to 2 thousand people	28	13	50-59	74	33
Small town 2001-10 000	74	33	60+	10	5
Middle 10 001-100 000	60	27	Type of school		
Big above 100 thousand	39	18	Elementary (1-5. grade)	97	44

Prague	20	9		Elementary (6-9. grade)	59	27
Teaching practice length (in years)				Elementary - special	4	2
0-2	14	6		Children's home with a school	1	0
3-5	16	7		A grammar school	12	5
5-10	33	15		Technical secondary school	31	14
10-15	29	13		Vocational school	5	2
15+	129	58		Another type of school	12	5
Education						
Complete University	218	98				
High school	3	2				

As visible in Table 1 shown below: Demographic characteristics, nearly 60 % respondents are teachers with experience of more than 15 years, only 6 % of the statistical unit can be considered as “beginner teachers”.

Results

Problem A results

Problem A: Were the safety rules kept on certain workplace so nobody with the symptoms of respiratory infections that could match the known symptoms of Covid-19 could enter the school?

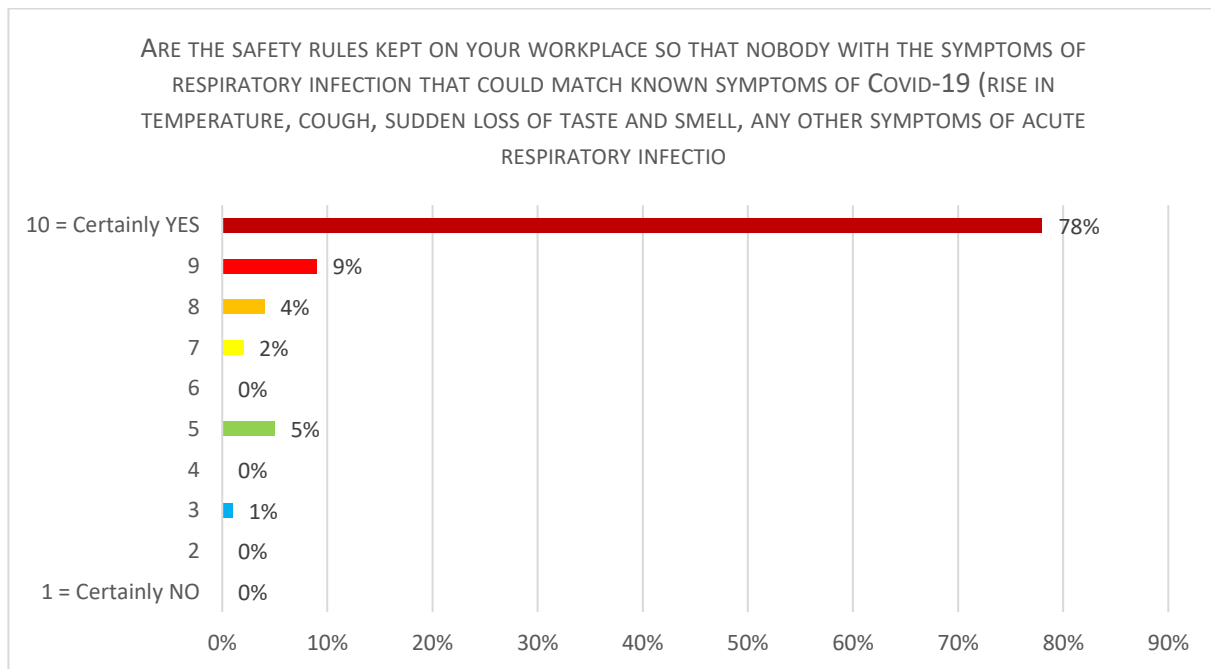


Figure 1: Opinions of teachers of keeping safety rules during reopening of schools from April 2020.

The respondents definitely expressed in overwhelming rate of 93 % that the safety rules that were determined by the Department of Health for safe education are kept in their workplaces in the measured period. Only 5 % respondents had neutral attitude to this issue and 2 % were negative.

Problem B Results

H1: At least one third of teachers did not receive any protection aids for upper respiratory tract (particularly face masks and protective shields) from their employers in the period from April to June 2020.

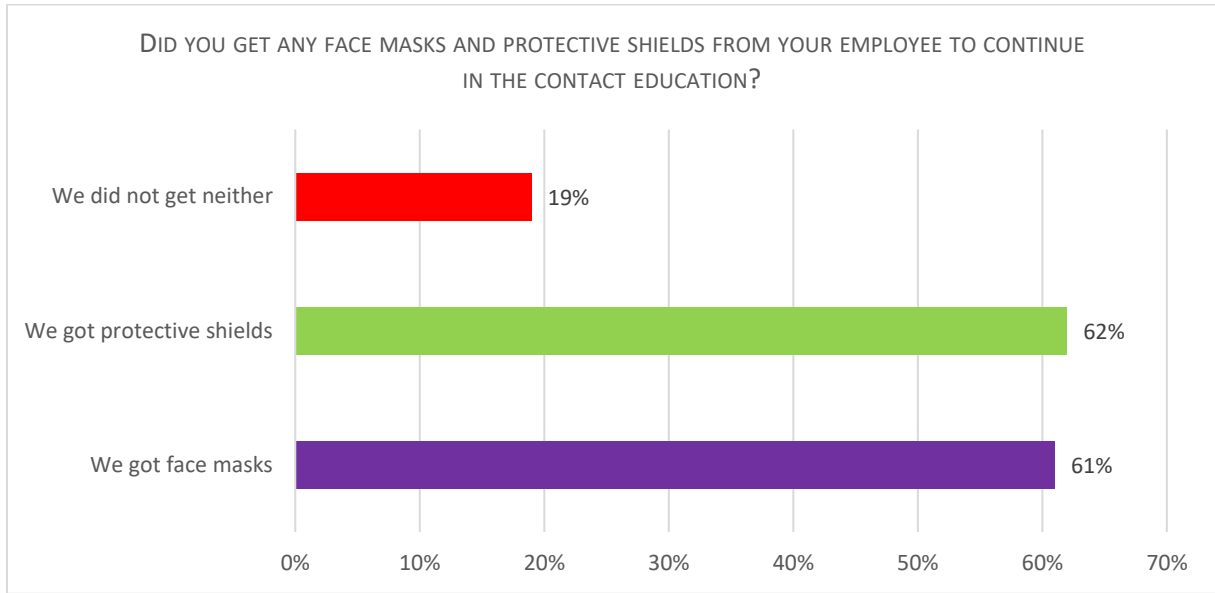


Figure 2: Czech schools facilities of protective aids in the period of the first wave of the Covid-19 pandemic.

Hypothesis H1 was not confirmed. We document that only 19 % workplaces did not use any protective aids.

H2: Two thirds of schools were equipped with the contactless thermometers for measuring the body temperature from April to June 2020.

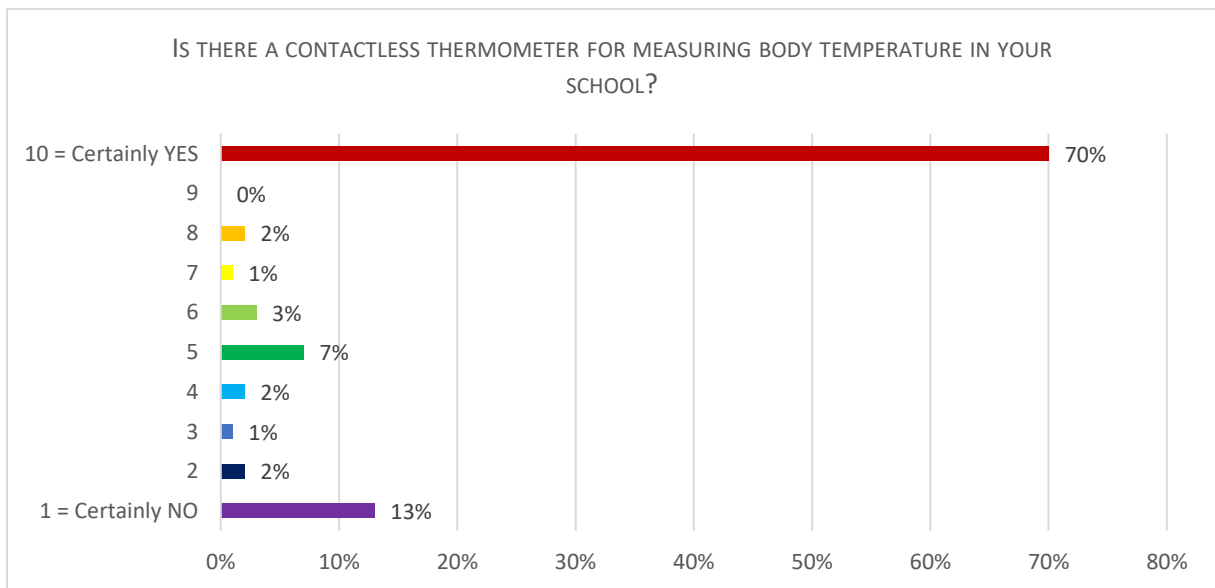


Figure 3: Presence of contactless thermometer on school workplaces.

Hypothesis H2 was confirmed. 76 % answered positively about the contactless thermometer in their workplace. 70 % respondents were completely certain about the existence of the thermometer in their schools. 18% teachers answered negatively, 13 % respondents were not sure.

H3: Teachers 50+ will be more afraid from the Covid-19 infection up to one third contrasted to younger colleagues in their workplace.

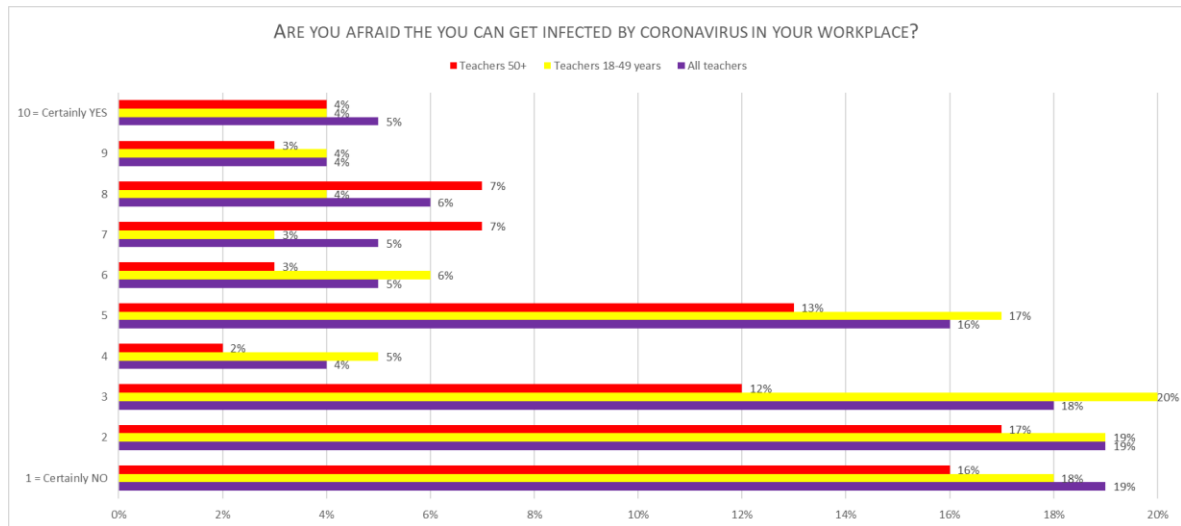


Figure 4: The fear of Czech teachers from the Covid-19 infection in their workplace.

Hypothesis H3 was not confirmed. 24 % teachers older than 50 expressed their fear from the Covid-19 infection. Slight fear was recorded in 10%, 14% teachers had big fear from the infection. 17 % teachers aged 18 – 49 expressed their fear from the infection. Slight fear were recorded at 9 %, 8 % had big fear from the infection. The percentage rise does not reach the rate of one third even if it is close to it. 29,17 % teachers older than 50 years are more afraid from the Covid-19 infection contrasted to their younger colleagues.

Conclusions

We got answers to our questions about how education and workplace safety looked like from March to June in the Czech Republic from quite a representative sample of Czech teachers.

The data analyzing the opinions of teachers about the level of keeping the safety rules during the reopening of schools and contact education, distribution of protective aids for teachers in the same period, using contactless thermometers for measuring body temperature as a key indicator of possible infection were found.

It is necessary to mention the personal bravery of Czech teachers who were not mostly afraid during the first wave of the pandemic including the age category 50+ and were interested in continuing the education even if there were possible risks. 93% teachers said that their schools keep safety and hygienic rules determined by the Department of Health of the Czech Republic. Most schools provided protective aids of upper respiratory tracts for their employees. Only 19% respondents answered that they did not get any protective aids. Most schools are equipped with contactless thermometers (76% positive answers).

References

- Winthrop, R. (2020). COVID-19 and school closures: What can countries learn from past emergencies? Center for Universal Education cue@brookings.edu, <https://www.brookings.edu/research/A.A>. Author, "Chapter Title" in Book *Title* (Editors eds.), pp.- pp., Cit y/State: Publisher, Year of Publication.
- Ferguson, N., Cummings, D., Fraser, C., et al., (2006). "Strategies for mitigating an influenza pandemic," *Nature*, no. 442, pp. 448–452, [doi 10.1038/nature04795](https://doi.org/10.1038/nature04795).
- Selber, H. (2020). Impacts of school closures on children in developing countries: can we learn something from the past? *CMI Brief, No.5, pp1-5*, <https://www.cmi.no/publications/file/7214R>.
- Luo SH., Liu W., Liu ZJ., Zheng XY., Hong CX., Liu ZR., Liu J., Weng JP. (2019). A confirmed asymptomatic carrier of 2019 novel coronavirus. *Chin Med J (Engl)*. 2020 May 5;133(9):1123-1125. doi: 10.1097/CM9.0000000000000798. PMID: 32149768; PMCID: PMC7213620.
- Hu Z., Song C., Xu C., Jin G., Chen Y., Xu X., Ma H., Chen W., Lin Y., Zheng Y., Wang J., Hu Z., Yi Y., Shen H. (2020). Clinical characteristics of 24 asymptomatic infections with COVID-19 screened among close contacts in

- Nanjing, China. *Sci China Life Sci.* 63(5):706-711. doi: 10.1007/s11427-020-1661-4. Epub 2020 Mar 4. PMID: 32146694; PMCID: PMC7088568.
- Linton NM., Kobayashi T., Yang Y., Hayashi K., Akhmetzhanov AR., Jung SM., Yuan B., Kinoshita R., Nishiura H. (2020). Incubation Period and Other Epidemiological Characteristics of 2019 Novel Coronavirus Infections with Right Truncation: A Statistical Analysis of Publicly Available Case Data. *J Clin Med.* 2020 Feb 17;9(2):538. doi: 10.3390/jcm9020538. PMID: 32079150; PMCID: PMC7074197.
 - Wu J., Liu J., Zhao X., Liu C., Wang W., Wang D., Xu W., Zhang C., Yu J, Jiang B., Cao H., Li L. (2020). Clinical Characteristics of Imported Cases of Coronavirus Disease 2019 (COVID-19) in Jiangsu Province: A Multicenter Descriptive Study. *Clin Infect Dis.* 2020 Jul 28;71(15):706-712. doi: 10.1093/cid/ciaa199. PMID: 32109279; PMCID: PMC7108195.
 - Nishiura H., Linton NM., Akhmetzhanov AR. (2020). Serial interval of novel coronavirus (COVID-19) infections. *Int J Infect Dis.* 2020 Apr; 93:284-286. doi: 10.1016/j.ijid.2020.02.060. Epub 2020 Mar 4. PMID: 32145466; PMCID: PMC7128842.
 - Lauer SA., Grantz KH., Bi Q., Jones FK., Zheng Q., Meredith HR., Azman AS., Reich NG., Lessler J. (2020). The Incubation Period of Coronavirus Disease 2019 (COVID-19) From Publicly Reported Confirmed Cases: Estimation and Application. *Ann Intern Med.* 2020 May 5;172(9):577-582. doi: 10.7326/M20-0504. Epub 2020 Mar 10. PMID: 32150748; PMCID: PMC7081172. *Ann Intern Med.* 2020 May 5;172(9):577-582. doi: 10.7326/M20-0504. Epub 2020 Mar 10.
 - Xiao F., Tang M., Zheng X., Liu Y., Li X., Shan H. (2020). Evidence for Gastrointestinal Infection of SARS-CoV-2. *Gastroenterology.* 2020 May;158(6):1831-1833.e3. doi: 10.1053/j.gastro.2020.02.055. Epub 2020 Mar 3. PMID: 32142773; PMCID: PMC7130181.
 - Gu J., Han B., Wang J. (2020). COVID-19: Gastrointestinal Manifestations and Potential Fecal-Oral Transmission. *Gastroenterology.* 2020 May;158(6):1518-1519. doi: 10.1053/j.gastro.2020.02.054. Epub 2020 Mar 3. PMID: 32142785; PMCID: PMC7130192.
 - Crawford, J., Butler-Henderson, K., Rudolph, J., Malkawi, B., Glowatz, M., Burton, R., Magni, P.A. and Lam, S. (2020). “COVID-19: 20 countries’ higher education intra-period digital pedagogy responses,” *Journal of Applied Learning and Teaching*, vol. 3, pp. 1-20.
 - Morat, BN., Shaari, A., Jafre, M., and Abidin, Z. (2011). “Facilitating Esl Learning Using Youtube: *Learners’ Motivational Experiences*,”.
 - Payne, JS., (2020). “Developing L2 productive language skills online and the strategic use of instructional tools,” *Foreign Lang. Ann.*, vol. 53, no. 2, pp. 243–249.
 - Lin, H., (2015). “Computer-mediated communication (CMC) in L2 oral proficiency development: *A metaanalysis*,” *ReCALL*, vol. 27, no. 3, pp. 261–287.
 - Wang, C., et al., (2019). “Need satisfaction and need dissatisfaction: A comparative study of online and face-to-face learning contexts,” *Comput. Human Behav.*, vol. 95, no. January, pp. 114–125.