

Risk of Behavioural and Emotional Disorders in Lithuanian School Aged Children as Assessed with SDQ During the Second Lockdown due to COVID-19

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Abstract. As a result of the outbreak of COVID-19 and consequent restrictions, the distance education was introduced in Lithuania in 2020 spring (the first lockdown, lasted for around 3 months) and 2020 autumn (the second lockdown, still lasting, June 2021). The prevalence of children's mental health problems during the first lockdown was similar to pre-epidemic rates in Lithuania, but the prolonged lockdown (and therefore school closure) might have more negative consequences on children's mental health. This study aimed to reveal the incidence of mental health problems as rated by parents with a Strengths and Difficulties Questionnaire during the second lockdown in school aged children. This research sample included data of 514 children (46% girls), aged 7 to 14 years old (mean age 10.15 years, $SD = 3.47$). The children's mental health problems were assessed using a Lithuanian version of the Strengths and Difficulties Questionnaire, parental form, in April–May 2021. Results revealed that 29.6% of Lithuanian children had scores in the clinical (abnormal) range of emotional problems and 21.6% – of conduct problems. Based on total difficulties score, 31.6% of children get in clinical range of emotional and behavioural problems, as rated by parents by the end of the second lockdown. The results are compared to pre-pandemic epidemiological rates of emotional and behavioural problems reported and those documented after the first quarantine in Lithuania and highlight important findings for professionals and policy makers about the detrimental effects of prolonged lockdown and school closure on children's mental health.

Keywords: emotional and behavioral problems, SDQ, children, lockdown, COVID-19.

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Mokyklinio amžiaus vaikų elgesio ir emocinių sutrikimų rizika, vertinta Galių ir sunkumų klausimynu antrojo karantino dėl COVID-19 metu Lietuvoje

Santrauka. Pasaulyje kilus COVID-19 pandemijai, daugelyje šalių, taip pat Lietuvoje, buvo paskelbtas karantinas ir įvesti ribojimai. 2020 m. pavasarį Lietuvoje pirmojo karantino metu buvo įvestas nuotolinis ugdymas mokiniams, kuris truko beveik tris mėnesius. 2020 m. rudenį buvo įvestas antrasis karantinas (ir nuotolinis ugdymas), kuris tęsiasi ir šiuo metu (2021 m. birželis). Nors pirmojo karantino metu vaikų psichikos sveikata pablogėjo, vaikų elgesio ir emocijų problemų raiška buvo panaši kaip priešpandeminiu laikotarpiu. Tačiau pusę metų ar ilgiau trunkantis antrasis karantinas (atitinkamai mokyklų „uždarymas“ – ugdymas nuotoliniu būdu) galėjo turėti daugiau neigiamų pasekmių vaikų psichikos sveikatai. Šiuo tyrimu siekėme atskleisti pradinio ir pagrindinio mokyklinio amžiaus vaikų elgesio ir emocijų sutrikimų riziką, vertintą antrojo karantino pabaigoje Galių ir sunkumų klausimynu. Tyrimo dalyviai – 514 septynių–keturiolikos metų vaikų (amžiaus vidurkis 10,15 metų, standartinis nuokrypis – 3,47; 46 % imties – mergaitės). Vaikų elgesio ir emocijų problemas vertino tėvai – 2021 m. balandį–gegužę pildė Galių ir sunkumų klausimyno versiją tėvams. Rezultatai atskleidė, kad 29,6 % šiame tyrime dalyvavusių vaikų patyrė emocinių sutrikimų riziką (vidurkiniai skalės įverčiai atitiko nuokrypį pagal populiacines normas), 21,6 % patyrė elgesio sutrikimų riziką. Pagal bendros sunkumų skalės įverčius 31,6 % vaikų elgesio ir emocijų problemos vertintinos kaip nukrypusios nuo normos. Šie rezultatai lyginami su ikipandeminiu laikotarpiu atlikto Lietuvos epidemiologinio tyrimo rezultatais ir su kitų pandeminiu laikotarpiu atliktų tyrimų rezultatais. Atkreipiamas psichikos sveikatos specialistų ir politikos formuotojų dėmesys į vaikų psichikos sveikatą itin neigiamai veikiančių užsitęsusių karantiną ir ugdymą ne mokykloje, o nuotoliniu būdu.

Pagrindiniai žodžiai: emocijų ir elgesio problemos, vaikai, Galių ir sunkumų klausimynas, karantinas, COVID-19.

Introduction

The World Health Organization (WHO) have declared on March 11, 2020 a pandemic for the novel coronavirus SARS-Cov-2 (COVID-19), and it continues till now (June 2021). There is clear evidence that children are very unlikely to have severe forms of COVID-19 (Tagarro, 2020; Viner et al., 2021). Although the negative effects of the pandemic on children's mental health, especially those related to social isolation, prolonged school closure, additional distress and risks in families, etc., are well documented (Loades et al., 2020; Saddik et al., 2021; Spinelli et al., 2020; Viner et al., 2021). The withdrawal from social life, daily activities, as attending school, combined with fear, anxiety and the feeling of the unpredictable, increase the risks for this group to develop psychiatric disorders in the future, even those who do not have such histories (de Figueiredo et al., 2021).

The Lithuanian Government has ordered a national lockdown on March 16, 2020. To prevent the spread of COVID-19 infections in primary and secondary schools, distance education was introduced for all school aged children and proceeded from 16th March to 16th June. Its duration coincided with the first quarantine (1st lockdown) in Lithuania. After the summer school holiday, in September 2020, the majority of children returned to contact education at schools. However, starting from the end of October 2020, the Lithuanian Government has introduced the second national lockdown, starting with the closure of schools and coming back to distance education again. The 2nd lockdown in Lithuania lasts from 7th November 2020 till June 2021. Primary schools were closed, and distance education was introduced from 14th December, and were partly opened (mixed form of education introduced) in March or April 2021. Secondary schools were totally closed, and distance education was introduced from 2nd November 2020, and were partly opened for

small proportions of students (mixed form of education introduced) in May 2021. Thus the majority of primary school children (aged 7 to 10 years old) have spent in distance learning and experienced total school closure around three-four months, and secondary school students (aged 11 to 18 years old) – for more than six months.

The studies conducted after the first lockdown in Lithuania revealed that for more than one-third of school aged children their emotional well-being during the first quarantine deteriorated, although the prevalence of mental health problems was not higher than pre-pandemic (Jusienė et al., 2021). The considerable improvement of children's emotional well-being in early Autumn 2020 was also observed (Jusienė et al., 2021). However, the second school closure and the second lockdown in Lithuania resulted again in multiple risks for children's mental health. Moreover, due to its longevity, it may have an even stronger effect on mental health (Loades et al., 2020).

The Strengths and Difficulties Questionnaire (SDQ) has been used extensively to screen for possible mental disorders in epidemiological studies around the world (Husky et al., 2018). Children with a higher total difficulties score have greater psychopathology as judged by the prevalence of clinical disorders (Goodman & Goodman, 2009). Thus, it is a valid and efficient instrument for screening children with considerable risk of emotional and behavioral disorders.

This study aims to reveal the incidence of mental health problems as rated by parents with the SDQ during the 2nd lockdown in school aged children (7 to 14 years old). We propose that the 2nd prolonged lockdown and particularly the school closure (which coincided with lockdown) had much more negative consequences for children's mental health as compared to pre-pandemic epidemiological rates of emotional and behavioral problems reported earlier and those documented after the first quarantine in Lithuania.

Method

Sample and procedure

This study is a part of the ongoing research project “Long-term effects of screens on children's physical and mental health”. Parents of school aged children living in various regions of Lithuania were invited to take part in the research through schools and social media. Parents who were participants in our other longitudinal studies and have provided personal email letters with consent for communication for scientific purposes were also invited to participate in this study. Parents signed informed consent forms for the study online and completed online questionnaires. The permission of the Psychological Research Ethical Board at Vilnius University was obtained for the study (No. 65, 2021-04-21). The data presented in this study were gathered by the end of the second quarantine in April-May 2021.

This research sample included data of the 514 children, aged 7 to 14 years old (mean age 10.15 years, $SD = 3.47$; 299 children attended primary school; 215 attended secondary school, see Table 1). Nearly ninety-six per cent ($n = 497$) of questionnaires were com-

pleted by mothers, 2.9 % ($n = 15$) by fathers, 0.4 % ($n = 2$) by other respondents (foster caregivers). The research sample somewhat over represents children from educated and low social economical risk families (see Table 1).

Table 1
The demographic characteristics of the participants

Characteristics	Total sample ($N = 514$)	1–4 classes ($N = 299$)	5–8 classes ($N = 215$)	χ^2	p
Child gender					
% Girls	45.7 ($n = 235$)	47.5 ($n = 142$)	43.3 ($n = 93$)	.904	.342
% Boys	54.3 ($n = 279$)	52.5 ($n = 157$)	56.7 ($n = 122$)		
Respondent parent's education					
% Low (≤ 12 educational years)	6.4 ($n = 33$)	5.7 ($n = 17$)	7.4 ($n = 16$)	1.83	.401
% Medium (13–15 educational years)	12.6 ($n = 65$)	11.4 ($n = 34$)	14.4 ($n = 31$)		
% High (≥ 16 educational years)	80.9 ($n = 415$)	82.9 ($n = 247$)	78.1 ($n = 168$)		
Respondent parent's employment status					
% Employed	86.8 ($n = 446$)	92.3 ($n = 250$)	95.6 ($n = 196$)	2.23	.135
% Unemployed	6.3 ($n = 30$)	7.7 ($n = 21$)	4.4 ($n = 9$)		

Instruments

Children's *mental health problems* were assessed using a Lithuanian version of the Strength and Difficulties Questionnaire (Gintilienė et al., 2004; Goodman, 1997), parental form. It contains 25 items; each item is scored as *not true* (0 or 2), *somewhat true* (1), or *certainly true* (2 or 0) based on the *preceding 6 months*. The questionnaire consists of five subscales including five items each: prosocial behaviours, hyperactivity/inattention, emotional problems, conduct problems, peer problems. The latter four scales measure the *emotional and behavioural problems* of a child, e.g., indicate mental health problems. The total difficulties score is computed using the sum of these four scales (20 items). Cut-off on SDQ scores were obtained from Lithuanian SDQ norms (Gintilienė et al., 2004). These cut-offs identify "normal," "borderline" and "abnormal" scores which can then be recoded to represent *the absence (normal or borderline score) or the presence (abnormal score)* of each class of disorders: internalizing disorders (emotional problems subscale), attention deficit hyperactivity disorder (hyperactivity/inattention subscale), and conduct disorders (conduct problems subscale) (Husky et al., 2018). The SDQ was reported as a reliable and valid instrument in various countries, and in Lithuania (Gintilienė et al., 2004; Husky et al., 2018). The scale reliability for this study sample is adequate for the Total difficulties scale Cronbach's $\alpha = .72$, although should be considered with caution

for the Hyperactivity/inattention scale (Cronbach's $\alpha = .67$), Emotional problems (Cronbach's $\alpha = .60$), Conduct problems (Cronbach's $\alpha = .63$), and Peer problems (Cronbach's $\alpha = .53$). The internal consistency of scales is very similar to those reported in the SDQ psychometric validation studies (Gintilienė et al., 2004; Husky et al., 2018).

Results

The descriptive statistics of the SDQ emotional and behavioural problem scales and total difficulties scale are provided in Table 2. Parental education was not related to SDQ scores in the sample. Children's age was not significantly related to the SDQ scores, although primary school aged children had higher scores of hyperactivity ($t = 1.536, p = .001$) and lower scores of peer problems ($t = -2.44, p = .015$) in comparison with secondary school children. Respondent parent's education was not related to SDQ scores (for all scales $p > .05$, r s ranged from $-.051$ to $.061$).

Table 2

Descriptives of SDQ scales for the study sample

SDQ scale	Range (min – max)	<i>M</i>	<i>SD</i>
Hyperactivity / inattention	0–10	4.94	2.41
Emotional problems	0–10	3.92	2.82
Conduct problems	0–9	2.34	1.52
Peer problems	0–10	3.20	2.36
Total difficulties	0–29	14.41	6.75

The results of cut-offs proportions of SDQ scales (presented in Table 3) revealed that according to parental rates around one fourth (26.1%) of participant children had scores in the abnormal (clinical) range of hyperactivity/inattention scale. About one third of children (29.6%) scored above the abnormal cut-off of emotional problems and around one fourth of the children (24.6%) scored above the abnormal cut-off of conduct problems. 41.1% of children were scoring in the clinical range of peer problems, although this finding should be interpreted with caution due to questionable scale reliability and due to the context of rating (e.g., children were highly restricted in live contacts with peers). In sum, a little over half of children (55.4%) had scores in the normal range of total difficulties. There were significantly larger proportion of boys in the abnormal range of conduct problems as compared to girls, and a larger proportion of primary school children in the abnormal range of hyperactivity/inattention as compared to secondary school children (see Table 2). Although based on total difficulties score proportions of boys and girls and proportions of primary- and secondary school aged children in the clinical range was comparable.

Table 3

Cut-offs proportions of the SDQ scales and comparison according to child's gender and to whether a child attends primary or secondary school

SDQ scale	Child's gender	Normal	Borderline	Abnormal	χ^2 test	p value
		%				
Hyperactivity / inattention	Girls	61.3	17.0	21.7	4.69	.096
	Boys	53.2	16.9	29.9		
	Primary school	52.5	17.1	30.4	7.56	.023
	Secondary school	63.1	16.8	20.1		
	Total	56.9	17.0	26.1	–	–
Emotional problems	Girls	54.9	11.1	34.0	4.50	.105
	Boys	63.4	10.8	25.8		
	Primary school	60.2	11.0	28.8	.23	.894
	Secondary school	58.6	10.7	30.7		
	Total	59.5	10.9	29.6	–	–
Conduct problems	Girls	61.7	22.1	13.2	7.90	.019
	Boys	52.3	21.5	26.2		
	Primary school	56.9	22.1	21.1	.13	.939
	Secondary school	56.3	21.4	22.3		
	Total	56.6	21.8	21.6	–	–
Peer problems	Girls	63.0	–	37.0	2.91	.088
	Boys	55.6	–	44.4		
	Primary school	62.2	–	37.8	3.14	.077
	Secondary school	54.4	–	45.6		
	Total	58.8	–	41.1	–	–
Total difficulties	Girls	57.4	11.1	31.5	1.66	.435
	Boys	53.6	14.7	31.7		
	Primary school	54.2	14.4	31.4	1.14	.565
	Secondary school	57.0	11.2	31.8		
	Total	55.4	13.1	31.6	–	–

Discussion

Almost one third (31.6%) of children aged 7 to 14 years old can be considered as having the clinical (abnormal) range of emotional and behavioural disorders, as rated by parents by the end of the 2nd quarantine due to the COVID-19 pandemic in Lithuania. Moreover,

the total difficulties score and the separate subscale mean scores were much higher in our recent study (mean score for total problems 14.4) compared to children of the same age after the first quarantine in Lithuania (mean score for total problems – 10.3; Jusienė et al., 2021), and to scores of the recent epidemiological study (mean score – 10.3; Lesinskiene et al., 2018) or the population-based study (mean score – 11.2; Gintilienė et al., 2004). Findings by Lesinskiene et al. (2018) suggest that pre-pandemic Lithuanian rates of psychopathology (e.g., 12.5% of children aged 7- to 16-years-old had the “probable” diagnosis according to the SDQ-algorithm) were generally in line with what has been reported by studies that used the same measures in other low- or middle-income countries, but higher than what has been reported in high-income countries.

The studies reporting children’s mental health problems assessed with the SDQ during the pandemic due to COVID-19 in various countries provide diverse findings, mostly depending on the exact time of assessment. As, for example, in a community-based sample in France, 7.1% of children presented symptoms of emotional difficulties and 24.7% symptoms of hyperactivity/inattention during the first 5 weeks of home confinement (Moulin et al., 2021). Also, during the first month of school closure in China, the prevalence of total difficulties was 8.2% in primary school children (Liu et al., 2021). However, according to a population-based survey by Li and colleagues (2021), about one third of children (32.3%) in China demonstrated mental health problems after two months in lockdown. Finally, monthly screening (from March 2020 to March 2021) with SDQ for emotional and behavioural difficulties in children and adolescents in the United Kingdom provided evidence that the highest levels of both parent-reported and adolescent-reported symptoms were when high levels of restrictions were in place and schools were closed to most children (Creswell et al., 2021).

Many scientists and practitioners expressed their concern regarding the harm for children’s mental health after the first lockdown, insisting to address mental health needs of school aged children, especially those who come from social risk families and rely on schools for behavioural and mental health supports (Jusienė et al., 2021; Li et al., 2021; Phelps & Sperry, 2020; Spinelli et al., 2020; Viner et al., 2021). It is not clear yet whether the pandemic has any long-term impact on children’s health (Phelps & Sperry, 2020). It could be that when the experience of traumatic and/or depriving situations prolongs, emotional and behavioural problems also persist and pose a risk for later psychopathology.

Our study used convenience sampling and had no pre-pandemic data of the sample; thus, it cannot provide clear answer about the effects of the pandemic on the prevalence of mental health problems. Even given these limitations, the results of this study reveal the adverse psychological impact of school closure and lockdown due to COVID-19 on youngsters and suggest that it is urgent for policy makers to develop effective screening and coping strategies for children having a high risk for emotional and behavioural problems.

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