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## Changes in the Level of Depressivity in Self-Harming Adolescents after the First Wave of the COVID-19 Pandemic

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### Abstract.

The COVID-19 pandemic and its consequences have not only had a somatic effect but has also had a psychological effect. Apart from various studies that point to the negative effects of the pandemic on the population's mental health, there are also those that have dealt with its positive impact and have identified possible protective factors whose intensity have increased during the pandemic. The presented study focuses on the level of depressivity in a sample of self-harming adolescents through a comparison of its prevalence before and after the first wave of COVID-19. The results imply that the changes and measures brought by the first wave of the pandemic did not increase the prevalence of depressivity. The discussion presents the limitations of the research and the possible protective effects of a non-pathological home environment on the mental health of adolescents at risk.

**Keywords:** depressivity, self-harm, COVID-19, adolescents

### 1. Introduction

The COVID-19 pandemic has changed the lives of people all over the world. The consequences can be identified in many areas – the SARS-Co-V-19 virus has directly affected the lives and health of individuals (Koçak et al., 2021), many have lost their relatives (Mortazavi et al., 2020) or become unemployed (Achdut & Refaeli, 2020). The measures adopted resulted in social isolation (Hwang et al., 2020) as well as restrictions on the provision of physical and mental health care services (Humer et al., 2020). The first statistics concerning the number of infected, hospitalised and dead have been published and doctors all over the world have also drawn attention to long-term health impacts after fighting off the disease (Ladds et al., 2020; Morley, 2020; van den Borst, 2021; Maltezou et al., 2021). Although research into the consequences of the disease, restrictions and life changes on the mental health of population is still on-going, experts have already documented an increase in the prevalence of anxiety (Ma et al., 2020), depression (Luo et al., 2020), uncontrolled fears (Serafini et al., 2020) as well as post-traumatic stress disorders (Xiong, et al. 2020) and stress

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(Rajkumar, 2020). Adolescents may be a group that, in this context, has been particularly vulnerable. Meeting the need for contact with their peers and education (Orben et al., 2020), which have been limited to the greatest extent during this period, is extremely important for their healthy mental development. These measures were adopted very quickly in Slovakia – some secondary schools closed on the first working day that followed the announcement of the first COVID-19 case in Slovakia (6th March 2020) and the rest of them stopped face to face teaching within 10 days (Public Health Authority of the Slovak Republic, 2020). Thus, with the exception of a couple of days in June when teaching was resumed at several schools, the lockdown lasted until the end of the school year.

Besides studies that present findings of a deterioration in the mental health of adolescents (e.g. Octavius et al., 2020; Son et al., 2020; de Figueiredo et al., 2021), studies have also emerged that have presented findings that suggest a possible improvement of the situation, mainly in the context of the measures adopted during the first wave of COVID-19. For example, Tang et al. found that social support, positive coping skills, home quarantine, and parent-child discussions have had a positive impact on the mental health of adolescents. They claim that home quarantine and parent-child discussions have increased the level of satisfaction with life (Tang et al., 2021). We have found similar results in connection with the prevalence of self-harm (see Demuth & Demuthova, 2021) – neither the prevalence nor the degree of self-harming behaviour in adolescents was found to have grown after the first wave of the pandemic. Quite the opposite, a slight (but not statistically significant) drop has been recorded. The question is whether it was the result of increased parental supervision or whether a real decrease in the number of stressors (for instance, of psychosocial character – Bailey et al., 2016) or triggers for self-harming behaviour took place during the period of social isolation and the influence of the home environment.

## 2. Objective

Owing to the ambiguous conclusions related to the effects of the changes caused by the COVID-19 pandemic on the mental health of self-harming adolescents, the goal of the research was to analyse the level of depressivity in a sample of self-harming adolescents before the outbreak of the COVID-19 pandemic and after the first wave.

## 3. Method

### 3.1 Participants

The research sample for the first phase of data collection (pre pandemic) was made up of 1,117 participants (average age of participants = 15.56; st. dev. = 1.45 years; 65.4% = female). Of these 546 participants (48.9%) met the criteria for self-harm. Due to the anonymous nature of the questionnaires and the fact that there was no need for long-term monitoring of the participants before the pandemic, the second phase of data collection was done using a different group of participants. It was also administered to pupils and students at primary and secondary schools (where face to face teaching restarted, but only for a few days). This sample (post first wave of the pandemic) was made up of 281 participants aged 11

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– 18 (average age = 14.04 years. st. deviation = 1.709). Of these participants 122 were identified as self-harmers (average age = 14.19 years, 68% = females).

In an effort to balance both groups from the point of view of the number of participants and in particular, age and gender (as these are considered to be significant demographic variables in the context of the prevalence of self-harm – Barrocas et al., 2012), 114 participants aged 11 – 18 (average age = 14.01; 69.2% = females) were randomly selected (within the required age and gender-related profile) from the pre-pandemic research sample of self-harming individuals. The data in Tables 1 and 2 shows the lack of significant differences in the demographic variables (gender and age).

Table 1: Age differences between the pre-pandemic and post first wave sample groups (Mann-Whitney's U-test)

Group	N	Mean order	U	Asymp. sig.
Pre-pandemic	117	118.18	7,349.5	0.682
Post first wave	122	121.74		

Source: Authors' own conception

Table 2: Gender differences between the pre-pandemic and post first wave sample groups (Spearman's correlation)

	Group (N)		Total
Gender (N)	Pre-pandemic	Post first wave	
Male	36	39	75
Female	81	83	164
Total	117	122	239
Spearman:	r = -0.013	approx. sig. = 0.863	

Source: Authors' own conception

The final statistical analyses (due to missing data regarding the depressivity levels) were executed on a sample of 103 pre-pandemic and 93 post-first-wave self-harming adolescents.

### 3.2 Materials

Self-harming adolescents in the general population were identified using the modified Self-Harm Inventory (SHI) by Sansone & Sansone (2010). The modified questionnaire (Demuthova & Doktorova, 2019) determines the frequency of prevalence of the 20 most frequent forms of self-harm; an adolescent is considered to be a self-harmer if they have displayed some of the forms of self-harming behaviour more than once in their lives or a combination of several forms of self-harm.

The level of depressivity was identified using the Children's Depression Inventory (CDI) (Kovacs, 1998). The questionnaire measures the current state of the participant on five subscales – anhedonia, bad mood, inefficiency, interpersonal problems, and a negative attitude towards oneself. The questionnaire also includes norms for the Slovak population.

### 3.3 Procedure

The data was collected at primary and secondary schools during the school day and in two phases – the first phase was carried out prior to the pandemic, between October 2019 and

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January 2020. The second phase of data collection took place in late June 2020 during a short period when restrictions were lifted, and some students and pupils could finally go to school. It was collected anonymously and in a standardised way by trained administrators. The participants (or their guardians) were informed of the research in advance and could opt out, or leave the research during any phase, there was no sanction or any impact on any form of student evaluation as a consequence of the refusal to participate or when leaving the study.

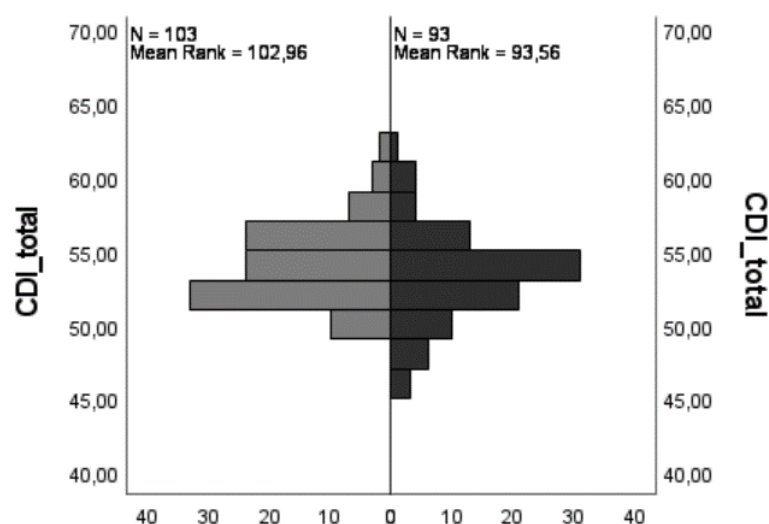
### 3.4 Statistical Processing

The statistical analysis was carried out using IBM SPSS, ver. 27, and the significance threshold was set to 0.05 for all tests. Since the monitored variables did not exhibit a normal distribution (the significance value of Shapiro-Wilk test = 0.000), non-parametric tests were used for the statistical analyses.

## 4. Results

The results of the non-parametric Mann-Whitney U-test that examined the differences in the level of depressivity in the pre-pandemic group of self-harming adolescents and the post first wave group (see Chart 1) shows that there are no statistically significant differences between the two groups (Mann-Whitney  $U = 4,330$ ; Asymptotic sig. = 0.243).

Figure 1: Differences in the level of depressivity in self-harming adolescents from the pre-pandemic (left half) and post first wave (right half) groups (Mann-Whitney's U-test)



Source: Authors' own conception

Thus, it can be stated that the level of depressivity, as one of the indicators of the mental health of adolescents, showed no increase after the first wave of the pandemic.

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## 5. Discussion

The data collected implies that there was no increase observed in the prevalence or the level of depressivity in the post first wave group of self-harming adolescents in comparison to the pre-pandemic sample. In the context of the research two explanations can be offered. The first is that lockdown may have increased the effect of the positive factors within the home environment, such as parental interest and support, spending time together, an increase in mutual interaction, improved communication, and the like. This is also supported by the findings of Tang et al. (2021) who found that social support, positive coping skills, home quarantine, and parent-child discussions during the crisis have had a positive impact on the mental health of adolescents. In particular, home quarantine with parent-child discussions on COVID-19 negatively correlated with psychopathological symptoms and positively correlated with satisfaction with life. It is therefore possible that a supportive home environment could have improved the relationships and state of mind of adolescents.

The second explanation works with the factors of the social environment outside the family. Lockdown substantially limited social contact, in particular, for young people, which is often viewed negatively (Lee et al., 2020; Loades et al., 2020; Rauschenberg et al., 2021). On the other hand, the restrictions on social interaction have not only resulted in the absence of the positive but also the negative consequences of interpersonal relationships. In this light the lockdown may also be viewed as lowering the intensity or quantity of negative social pressures, removing academic and social stressors ... etc. If the mental issues suffered by adolescents come from these areas, it is understandable that their absence could have improved the state of mental health. Considering that a common reason for mental problems in adolescence is psychosocial stressors (e.g., bullying or exam pressure) (Bailey et al., 2016), it may be assumed that their frequency and intensity may have decreased during lockdown. Of course, it is also possible that the good outcomes seen after the first wave of the pandemic was not a result of these factors but were a consequence of the specificities of the post first wave research sample; these circumstances are discussed in detail in the section *Limitations*.

### 5.1 Limitations and Suggestions for Further Research

The interpretation of the results presented should be perceived in the context of the limitations of the study in two specific areas – the design of the research and the composition of the sample. As the research into self-harm in adolescents began before the pandemic, it was anonymous and there was no possibility to further contact the participants, it was not possible to continually follow changes in the degree of depressivity (in the same participants). Although the selection of the participants in the two phases was carried out so that the important variables of the groups were identical, it is possible that they differed in a variable that we failed to identify, and which subsequently had a negative effect on the results. Therefore, we suggest, as a stimulus for further research, an analysis of cases from clinical practice where continuous and individual follow up is possible for each client/patient, to evaluate changes in the degree of depressivity during the pandemic. The disadvantage of this approach is that this would result in a very limited group of self-harming adolescents, as few self-harming adolescents seek professional help (Rowe et al., 2014).

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It is also crucial to point out the limitations imposed by the size and nature of the post first wave sample of participants. Although students and pupils could return to their schools and attend the last week of the summer term, many institutions did not take up this opportunity due to the epidemic situation. At the same time, the return of students and pupils to school was not mandatory – parents had the right to choose. Therefore, it is possible that it was only adolescents with special characteristics (from regions who better managed the epidemic, from families with a supportive approach towards their children), which could be related to their mental health (and the prevalence of depressivity), that returned to schools. The validity and effect of this limitation cannot be verified as the collection of data from children who stayed at home was not possible and the pandemic situation has since changed.

In any case and even despite the limitations stated, it is necessary to replicate the research, as it is possible that the impact of recurrent long-term social isolation and lockdowns (after the second wave of the pandemic) on the mental health of adolescents will be different.

## 6. Conclusion

The COVID-19 pandemic has brought about radical changes to people's lives which have also had an impact on the mental health of the population. In particular, adolescents who suffer from mental disorders are a vulnerable group in this context. However, in addition to the most widely publicised negative impacts, it seems there are also reports of possible positive impacts. Lockdowns along with the greater time and space they bring for us to share with our relatives have the potential to fight back against the negative impact of COVID-19 on mental health, or to even improve the state of some mental issues. Such a tendency has been shown in the prevalence of self-harm (Demuth & Demuthova, 2021) as well as, in the context of this study, depressivity in our population. We are still in the early days of research conducted with participants during the pandemic – it is necessary to observe the dynamics of the impacts of restrictions, not only regarding their negative aspects, but also in terms of their positive impacts, which could be potential protective factors to be applied to similar future crises.

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