



# Protective factors and risk factors in coping with the Covid-19 pandemic crisis by adolescents

Czynniki chroniące i czynniki ryzyka w radzeniu sobie z pandemią Covid-19 w środowisku młodzieży szkolnej<sup>1</sup>

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**Abstract: Introduction:** The environmental crisis of the Covid-19 pandemic and its accompanying isolation, led to negative changes in the psychological and social functioning of some adolescents. Previous studies have shown multiple issues observed in young people in the aftermath of the pandemic: mental health disorders, deficits in attention and task performance, deterioration of peer relationships, moods of sadness and depression (e.g. Bigaj, Dębski, 2020; Ghosh et al., 2020; Grzelak, 2020; Pyżalski, 2020a). However, negative symptoms do not affect the general student population. It is therefore important to identify the factors that support adolescents coping with the crisis and the factors that increase the risk of a deterioration of their mental condition. **Method:** In this context, we conducted a study to answer the question about the type and intensity of specific symptoms of mental crisis in adolescents examined during the pandemic. It was also checked whether the variation in the intensity of symptoms was accompanied by differences in psychosocial factors important for coping with the crisis, while controlling the gender variable. The study covered a group of 1,514 students from 7th and 8th grades of primary schools and secondary schools. *The Scale of the impact of Covid-19 and home isolation on children and adolescents* by Mireia Orgilés, Alexander Morales and José Pedro Espada was used, as well as a survey to diagnose protective factors and risk factors in adolescent problem behaviour. **Results:** Most young people do not report changes in their physical and mental well-being after the period of home isolation and the Covid-19 pandemic. On the other hand, a significant group (about one third) of the respondents experienced a deterioration in their psychophysical condition. Factors that accompanied different effects of the pandemic and differentiate young people with strong symptoms from those who do not experience negative effects of a mental crisis are: the quality of peer relationships, the quality of the relationship with teachers and tutors, the type of contact with parents, school and class atmosphere. **Conclusions:** The Covid-19 pandemic and home isolation led to negative psychophysical changes in approximately one third of adolescents. The pandemic itself, however, is not a direct cause of these changes. What is important is the contribution of psychosocial factors that make up the conditions in which young people functioned during the pandemic. **Keywords:** andemic, protective factors, risk factors.

**Abstrakt: Wstęp:** Kryzys środowiskowy, jakim był okres pandemii Covid-19 i towarzyszącej jej izolacji, spowodował negatywne zmiany w funkcjonowaniu psychicznym i społecznym części młodzieży. Dotychczasowe badania wskazały m.in. na zaburzenia zdrowia psychicznego, deficyty uwagi i sprawności zadaniowej, pogorszenie relacji rówieśniczych, nastroje smutku i przygnębienia (m.in. Bigaj, Dębski, 2020; Ghosh i in., 2020; Grzelak, 2020; Pyżalski, 2020a). Negatywne objawy nie dotyczą jednak ogółu populacji uczniów. Istotną kwestią jest zatem określenie czynników wspomagających młodzież w radzeniu sobie z kryzysem i czynników zwiększających ryzyko spadku kondycji psychicznej. **Metoda:** W tym kontekście przeprowadzono badanie, którego celem była odpowiedź na pytanie o rodzaj oraz nasilenie szczegółowych objawów kryzysu psychicznego młodzieży badanej w trakcie pandemii. Sprawdzano także, czy zróżnicowaniu w nasileniu objawów towarzyszą różnice w zakresie czynników psychospołecznych, istotnych dla radzenia sobie w kryzysie, kontrolując przy tym zmienną płeć. Badaniem objęto grupę 1514 uczniów z 7 i 8 klas szkół podstawowych oraz szkół ponadpodstawowych. Zastosowano *Skalę wpływu Covid-19 i izolacji domowej na dzieci i młodzież* autorstwa Mireia Orgilés, Alexandra Morales i José Pedro Espada oraz ankietę do diagnozy czynników chroniących i czynników ryzyka zachowań problemowych młodzieży. **Wyniki:** Większość młodych ludzi nie dostrzega zmian w swoim samopoczuciu fizycznym i psychicznym po okresie izolacji domowej i pandemii Covid-19. Z drugiej strony znacząca grupa, około jednej trzeciej badanych, doświadczyła pogorszenia kondycji psychofizycznej. Czynniki, które towarzyszyły odmiennym skutkom pandemii i różnicują młodzież o silnych objawach kryzysu psychicznego od młodzieży niedoświadczającej negatywnych skutków to: jakość relacji rówieśniczych, jakość relacji z nauczycielami i wychowawcą, rodzaj kontaktu z rodzicami, klimat szkolny i klasowy. **Wnioski:** Pandemii Covid-19 i izolacji domowej towarzyszyły negatywne zmiany psychofizyczne u około jednej trzeciej młodzieży. Sama pandemia nie jest jednak bezpośrednim czynnikiem wywołującym owe zmiany. Istotny jest tutaj udział czynników psychospołecznych składających się na warunki, w których funkcjonowała młodzież w okresie pandemii. **Słowa kluczowe:** Czynniki chroniące, czynniki ryzyka, młodzież, pandemia Covid-19.

1 Artykuł w języku polskim: <https://www.stowarzyszeniefidesetratio.pl/fer/2022-4-Polesz.pdf>

## **Introduction**

A state of emergency report published by UNICEF in 2020 bears an apt title: „Averting a lost Covid generation” (UNICEF, 2020). From the perspective of 2022 we can already assess whether the generation of young people has coped well with the isolation and remote learning during the Covid-19 pandemic, or whether it has been ‘lost’ as suggested by UNICEF experts. A review of Polish and international studies compiled by Pyżalski (2021) shows that the answer to this question is not at all clear. This ambiguity is caused both by the different condition of Polish adolescents after the Covid-19 pandemic and also by the diverse methodologies and scope of the studies conducted. It is thus difficult to paint an unambiguous picture, especially, because there are not many reports on the mental condition of Polish adolescents (at least published reports).

The above-mentioned difference in the condition of adolescents in the aftermath of the Covid-19 pandemic poses a question about the factors that have helped young people get through this environmental crisis, and the risk factors that have led to a decline in adolescent mental health.

## **1. Theory**

### **1.1. Mental condition of children and adolescents before the Covid-19 pandemic in the light of the results of the EZOP II study**

In order to objectively assess the mental condition of children and adolescents after the period of remote learning during the Covid-19 pandemic, it is first necessary to refer to the earlier studies. The studies of the mental condition of the Polish population from 2018-2019 (Moskalewicz, Wciórka, 2021) are of use. Ostaszewski et al. (2021) report that more than six per cent (6.47%) of children and adolescents aged 7-17 suffer from anxiety disorders (at least one of three disorders: separation anxiety disorder, specific phobias, social phobias). A greater tendency for such disorders was observed in girls, especially

the younger ones (7-11 years). Slightly more, i.e. 9.46% of children and adolescents reported that they had experienced some kind of traumatic event (e.g. a traffic accident or seeing someone injured or killed) in their lives. Most such events were reported by adolescents aged 16-17, with boys being more likely to report them (as many as 25.12%) than girls (19.15%). PTSD symptoms were observed in 0.1% of children and adolescents. Slightly more, i.e. 0.3% of Polish children and 0.7% of adolescents (0.49% overall) had suffered from obsessive-compulsive disorder before the Covid-19 pandemic. These disorders are most common in the 16-17 age group and affect boys (2.37%) more often than girls (0.63%). According to Ostaszewski and colleagues (2021), it is quite common for Polish children and adolescents to experience depressive disorders and mania. Depression has affected 1.3% of children and 4% of adolescents at some point of their lives, whereas for mania the percentages are 1.6 and 3.7 respectively. A significant percentage of children and adolescents (10.3%) have experienced some kind of near-psychotic episode in their lives, with 8.6% of children aged 7-11 and 11.7% of adolescents aged 12-17 included in this group. Oppositional defiant disorder or conduct disorder was diagnosed in 1% of children and 2.7% of adolescents, whereas ADHD was diagnosed in 2% of respondents.

All in all, the most common disorders in the population of Polish children and adolescents before the pandemic were anxiety disorders (more often affecting children—7.8% than adolescents—5.3%) and near-psychotic episodes (8.6% and 11.7% respectively).

### **1.2. Covid-19 pandemic as an environmental crisis**

In search for a scientific understanding of the Covid-19 pandemic situation, a theoretical framework needs to be established. The pandemic fulfils all the criteria of an environmental crisis (Bilicki, 2020; Poleszak, Pyżalski, 2020). A crisis, in psychological terms, is the disruption in the normal course of life

resulting from an event that interferes with a person's ability to achieve important life goals. Being deprived of the possibility to achieve important life goals leads to a very strong emotional reaction. Emotions, on the one hand, communicate about an event, but they also set the direction and drive action to rid of what prevents us from achieving our goals. In the case of the pandemic, this is not an easy task, and thus the adaptation process takes longer. According to James and Gilliland (2006, p. 25), a crisis is a reaction to an obstacle that is insurmountable at the time by the customary methods of problem solving. This reaction can lead to a state of disorganisation in which a person experiences anxiety, shock, and difficulty in dealing with a particular situation (Brammer, 1984, p. 145). Crises are limited in time (usually lasting no longer than a few weeks), but when not worked through, they can lead to severe behavioural disorders (including suicide), or reactivate pre-existing (but e.g. partly cured) disorders (James and Gilliland, 2006; Poleszak, Pyżalski, 2020). The Covid-19 pandemic, with its recurrent waves, is undoubtedly an environmental crisis, although with a specific course. A natural and constructive way to adapt in crisis situations is to hope for its end. The waves of contagion and infection coming one after the other made it difficult to resort to this adaptation mechanism, which undoubtedly put additional strain on those in crisis.

### 1.3. Mental condition of children and adolescents after the Covid-19 pandemic in the light of selected studies

Consulting studies on the consequences of the Covid-19 pandemic on the psychological condition of children and adolescents, it is important to take into account the time when they were conducted. From the very definition of an environmental crisis (and this is what the pandemic undoubtedly was), it follows that it is a process with its own internal dynamics reflected in the emotions and behaviours of each individual. Environmental decisions, such as social contact restrictions and changes in the life activity of the population, also determined the quality of coping with the pandemic crisis. They particularly

affected the young people who had to stay at home instead of going to school, and had limited contact with their peers, especially in the early stages of the pandemic. Hence, the findings collected at different times describe a slightly different reality. The final consequences of the pandemic for young people's mental health will only be seen in the years to come. Despite this fact, it is important to build on the research we already have.

Giving Children Strength Foundation [Fundacja Dajemy Dzieciom Siłę] study published as a report entitled 'Adolescent Negative Experiences during the Pandemic' was done fairly early in the pandemic (namely in September 2020). It was conducted with the CAWI method on a sample of 500 young people aged 13-17. The quantitative results indicate a significant proportion of children and adolescents not coping with the crisis due to a family history of mental illness or addiction (or both). Around 27% of young people reported having experienced some form of domestic abuse. Girls were more likely to report this problem than boys. In addition, difficulties of this kind were more often reported by adolescents (aged 16-17) living in rural areas (as compared to those in urban areas).

Another study was conducted in April 2020 by a team from the Institute of Integrated Prevention [Instytut Profilaktyki Zintegrowanej] led by Grzelak. The study consisted in sending a questionnaire through emails and social media (which is a limitation of the study, as this method excluded a certain group of adolescents). The survey sample was 2,079 people aged 13-19. The study found that the majority of students, i.e. 62%, coped well with their mood during the initial period of the pandemic. However, one-fifth of the adolescents surveyed reported experiencing poor mood and difficulty in coping with the situation. A further 18% reported feeling moderately sad, with slightly more girls in this group. A pattern emerges from this study that children with no siblings as well as those who do not engage in religious practices cope less well with remote learning and isolation (Grzelak, 2020). Young people with a chronic illness coped very badly with the pandemic. This may be caused by two factors: increased health anxiety and diffi-

culties in accessing health services. The increase in negative mental health symptoms in young people with mental illness is also confirmed by researchers in Denmark (Jefsen, Nørreremark, Danielsen, Østergaard, 2020).

Extensive research on the mental condition of children and adolescents (but also parents and teachers) was prepared by the team of Ptaszek, Stunża, Pyżalski, Dębski, and Bigaj (2020). The research was done in May and June 2020 using a diagnostic survey method on a sample of 2934 persons (including students: N = 1284, parents: N = 979 and teachers: N = 671). It was found that remote learning has placed a time strain on all social groups involved in education, namely teachers, students, and parents. According to this research, more than a quarter of the students experienced difficulties in mastering the material delivered remotely. These difficulties consisted of problems concentrating, difficulties in comprehending the material and completing tasks on time during the lesson (Bigaj, Dębski, 2020). On the other hand, for 90% of teachers remote education involved spending extra time preparing for their lessons, a problem reported by only 62% of students and one in two parents (Bigaj, Dębski, 2020).

Half of the students rated remote learning as less attractive than traditional learning. The same number of students also indicated that their relationships with classmates had deteriorated (while there are also 5% of students who indicate that relationships have improved with remote learning) (Pyżalski, 2020a).

According to this research, 13% of students report a deterioration in their relationship with their parents or guardians. The main concerns of adolescents (even more so of teachers), are: being on the constant alert for calls and notifications (63% of students), fatigue caused by using a computer or smartphone (57%) and information overload (51%) (Pyżalski, 2020b).

This research can be concluded and complemented with the figures from the Polish Police Headquarters on suicide attempts among girls and boys aged 7-18 (Figure 1).

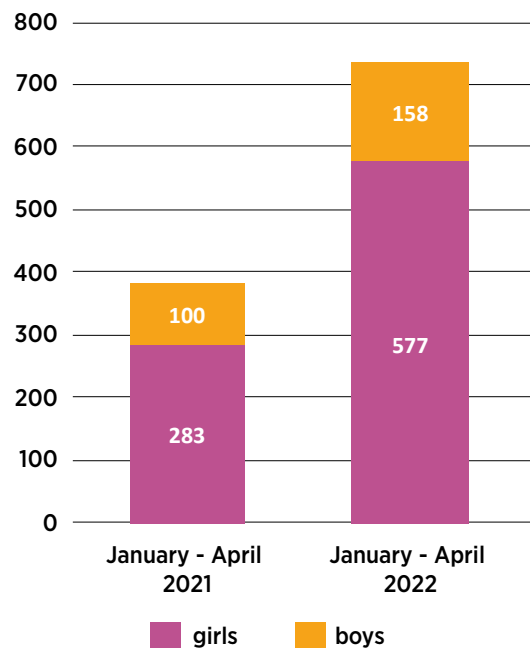


Figure 1. Suicide attempts among girls and boys in January–April 2021 and January–April 2022

Source: Authors' own compilation based on the data from Polish Police Headquarters

The two periods between January and April in 2021 and January and April 2022 were compared. The result is worrying and shows a dramatic increase in suicide attempts, especially among girls. In the same four-month period compared year-on-year, the number of suicide attempts among girls increased by nearly 100% and among boys by 58%. It is worth noting that these are not all suicide attempts, but only those reported to the police. Suicide attempts that end in death also show a worrying trend: a 100% increase in girls, and a 10% increase in boys. However, it should be noted that twice as many boys committed suicide compared to girls in 2021. The above data indicate that girls are in much worse condition than boys after the Covid-19 pandemic.

Ghosh, Dubey, Chatterjee, Dubey (2020) also point to a significant deterioration in children's and adolescents' psychological functioning during the Covid-19 pandemic. They point out that daily life, social interactions, screen time, mental health and subjective well-being were significantly disrupted due to home isolation and prolonged school closures during the pandemic crisis.

#### 1.4. Protective and risk factors in coping with the pandemic crisis

Grzelak's (2020) research showed that among persons experiencing depression, most did not talk to their parents. The protective factor of parental support was in their case much weaker. Another factor contributing to negative mood was a weaker (online) peer network. Young people who had good contact with their peers were better able to cope with feelings of depression resulting from the pandemic.

Adolescents who considered their mental condition as poor experienced statistically more negatively-charged emotions, and the intensity of these emotions cannot be explained by developmental changes alone. Focusing on negative emotional states also prevented them from seeing the positive aspects of the crisis experienced. However, this state is the result not only of the pandemic, but of a process that has been escalating for many years (Poleszak, 2020).

The stress related to school duties was an additional risk factor during the pandemic and remote learning period. It was experienced daily by one third of the respondents in the group affected by the pandemic crisis (Bigaj, Dębski, 2020; Grzelak, 2020; Pyżalski, 2021).

Important protective factors in coping with the pandemic crisis included the support provided by the teacher and the fostering of a positive emotional atmosphere as well as the cooperation and communication between students, as well as in the teacher-student relationship (Pyżalski, 2021; Pyżalski, Poleszak, 2020c). Also, research by Shoshani & Kor (2021), conducted on a sample of 1,537 Israeli children and adolescents, confirms the significant role of perceived social support (peer and parental) and daily routines as important protective factors in coping with the pandemic crisis.

In addition, Magson, Freeman, Rapee, et al. (2021) conducted a longitudinal study on a group of 248 young people and observed that Covid-19-related concerns, online learning difficulties and increased conflict with parents resulted in exacerbated mental health problems. Protective

factors mentioned in the study included adherence to stay-at-home orders and a sense of social connectedness.

In view of the above, the aim of the present study was to answer the following research questions:

1. What is the intensity of psychological crisis symptoms resulting from the Covid-19 pandemic in 7th and 8th grade primary school students and secondary school students?
2. Are there any differences between students with high intensity of crisis symptoms and students with positive adaptation in terms of psychosocial factors important in coping with crisis?
3. Is gender a modifying variable for differences between students with high intensity of symptoms and students with positive adaptation?

The psychosocial factors that were included in the comparison were: the quality of peer relationships, the quality of the relationship with the tutor and teachers, the evaluation of the school atmosphere, the contact with parents and the perceived parental control. These variables were selected based on the concepts referred to in the introduction.

## 2. Methodology of own research

### 2.1. Subjects and study design

A total of 1,514 subjects took part in the study, of whom 980 were secondary school students, and 536 were in the 7th or 8th grade of primary school. In total, girls accounted for 53.6%, and boys 46.2% of the subjects. Among secondary school students, the majority attended general secondary schools (70%). Technical school students made up 22.9% of this group, and trade school students 7.1%. The age of the students ranged from 12 to 20 years ( $M=15.66$ ;  $SD=1.717$ ). The study was conducted between May and October 2021. Participating schools arranged for students to access online versions of the applied tools in their computer labs. Students took the survey during school hours. The study was anonymous and voluntary and received approval from the bioethics committee.

## 2.2. Methods applied

*The Scale of the impact of Covid-19 and home isolation on children and adolescents* by Mireia Orgilés, Alexandra Morales and José Pedro Espada (2020) was used to measure the intensity of psychological crisis symptoms. The survey was translated into Polish with the approval of its authors. The scale consists of a list of 31 symptoms (Table 1), to which the participant responds as instructed: “In recent days, compared to the situation before the Covid-19 pandemic (select one of the five possible answers): significantly less, slightly less, as much as before, slightly more, significantly more.” The types of possible answer choices determined how the overall scale score was interpreted. People with the lowest scores are those who most often choose the answers ‘significantly less’ or ‘slightly less’. This group is referred to in the article as a group with positive adaptation to crisis—they notice positive changes in themselves in situations of environmental crisis. On the other hand, those who most frequently select responses indicating increased intensity of symptoms score highest. This group is referred to as students with high intensity of symptoms.

Although the authors of the original study did not examine the factor structure, it was decided to check the presence of a possible division of the symptoms into dimensions. An exploratory factor analysis with the principal axis factoring method was used to this aim. As a first step, the value of the KMO adequacy coefficient was established as 0.980 for the total and higher than 0.9 for individual items. Analysing the scree plot and applying the Kaiser criterion, the univariate nature of the scale was found (explaining 56.915 of the total variance). Reliability analysis showed very good scale properties for the measurement of one factor, i.e. the total score which is an indicator of the intensity of psychological crisis resulting from the Covid-19 pandemic. The Cronbach’s alpha value was 0.975 and the McDonald’s omega coefficient was 0.976 (95% CI [0.974; 0.977]). These values confirm the usefulness of the scale for diagnosis and research and are consistent with the results obtained by the scale’s authors, specifically Cronbach’s alpha value of 0.95 (Orgilés, Morales, Delvecchio, Espada, Mazzeschi, 2020).

The second tool was the survey developed by the team: Robert Porzak, Krzysztof Ostaszewski, Jacek Pyżalski, Jakub Kołodziejczyk, Wiesław Poleszak, Grzegorz Kata as part of the Ministry of Education project called “System of Preventive Measures in Poland – the status and recommendations for increasing the effectiveness and efficiency of planning and implementing preventive measures on micro and macro scales”. [„System Oddziaływań Profilaktycznych w Polsce—stan i rekomendacje dla zwiększenia skuteczności i efektywności planowania i realizacji działań profilaktycznych w mikro i makro scali”]. The purpose of this tool is to diagnose protective factors and risk factors for problem behaviours and the level of involvement in these behaviours. In the study, questions about the quality of peer relationships, the quality of relationships with the tutor and teachers, the assessment of school atmosphere, the quality of the relationship with parents and the perceived sense of parental control were used. Test items comprising these areas and the responses are detailed in the tables in the Results section.

## 2.3. Data analysis

To answer the research question about the intensity of mental health crisis symptoms, percentages of responses to each of the 31 symptoms were totalled. The answer to the subsequent research questions was preceded by the identification of two extreme groups of students—a group with high intensity of crisis symptoms and a group with positive adaptation. In doing so, the method of identifying extreme groups approach was used, which was applied in order to specifically focus on the characteristics of the functioning of students with severe crisis or adaptation to it (Preacher, Rucker, MacCallum, Nicewander, 2005). This approach limits the conclusions to the extreme 27% of the study group, and this is also useful for the exploratory stage of investigating the effects of the Covid-19 pandemic period on adolescent psychological functioning. The extreme groups were singled out on the basis of the distribution of the total score of a scale examining symptoms of crisis. To compare these groups, a chi-square test was used with z-test

Table 1. Symptoms of mental health crisis in 7th and 8th grade primary school students and secondary school students (N=1514)

Symptoms of crisis	Significantly less %	Slightly less %	As much as before %	Slightly more %	Significantly more %
I am worried	21.6	12.5	36.7	21.3	7.9
I am restless	18.8	11.6	43.9	18.4	7.3
I am anxious	20.2	9.2	41.7	20.1	8.7
I am sad	21.5	11.4	34.8	19.7	12.5
I have nightmares	33.9	7.3	49.9	4.9	4.0
I am reluctant	20.6	11.0	33.0	22.5	12.9
I feel lonely	25.3	10.4	36.6	15.9	11.8
I wake up frequently	28.8	7.6	47.3	9.2	7.1
I sleep little	22.3	8.9	38.5	17.5	12.8
I feel very indecisive	23.4	8.5	43.1	17.4	7.6
I feel uneasy	25.1	8.7	45.2	14.3	6.7
I feel nervous	19.1	8.3	40.2	19.5	12.9
I am afraid to fall asleep	35.0	5.2	50.5	5.4	3.8
I argue with the rest of the family	24.6	11.3	45.4	12.7	6.0
I am very quiet	28.9	8.9	46.6	10.9	4.8
I cry easily	26.7	7.7	40.9	13.2	11.5
I am angry	18.7	7.9	43.1	19.4	11.0
I think about death	28.7	5.8	43.9	12.0	9.6
I feel frustrated	25.6	6.7	46.1	14.0	7.5
I am bored	20.9	8.9	37.8	20.3	12.2
I am irritable	21.7	6.1	44.3	18.6	9.3
I have sleeping difficulties	27.9	6.9	46.4	10.0	8.7
I have no appetite	25.6	8.4	47.8	11.6	6.7
I am easily alarmed	23.8	6.9	48.3	13.9	7.2
I have difficulty concentrating	19.0	8.4	38.1	20.1	14.3
I am afraid of Covid-19 infection	39.2	10.5	41.1	6.5	2.6
I feel helpless	26.3	6.7	46.8	12.5	7.6
I have physical complaints (headache, stomach ache)	23.1	6.9	42.2	19.2	8.6
I have behavioural problems	26.2	7.3	51.7	9.7	5.2
I eat a lot	28.4	10.0	45.6	10.8	5.2
I worry about my family	15.5	5.6	44.9	21.9	12.1

for analysis of column proportions and calculation of standardised residuals. The latter indicated those categories of survey responses that primarily comprised a significant chi-square test result. The description

shows the percentage results within the response categories selected on this basis. The interaction effect of gender and crisis intensity on psychosocial variables was tested using a log-linear analysis.

### 3. Study results

#### 3.1. Results

One of the main analysed areas of adolescent functioning after the pandemic is the intensity of clinical symptoms (Table 1).

The questions were related to the emotional, psychosomatic, motivational and cognitive as well as interpersonal spheres. As expected, in line with environmental crisis theory, most young people reported having a problem with strong emotional reactions. Nearly a third of the adolescents surveyed have experienced, after the pandemic and remote learning period, increased anxiety (28.8%)—either moderate or severe, worry (29.2%), sadness (32.2%) and nervousness (32.4%). In the motivational sphere, the predominant symptoms are discouragement (35.4%), boredom (32.5%), but also problems with concentration (34.3%). Undoubtedly, these symptoms do not facilitate completing school tasks, which may in turn exacerbate students' school-related stress. Among the symptoms observed, it is also important to highlight the increase in psychosomatic negative reactions after the pandemic (34%) such as headaches or stomach aches.

The sources of negative emotions are found in the concern for student's loved ones (34%) rather than for themselves, according to the results.

In summary, the mental condition of adolescents after the pandemic crisis is complex. Most young people (between 33% and 52% depending on the

symptom) perceive no change in their mental and physical well-being. A relatively large group of young people, that is about 30%, feel better than they had before the pandemic. These include those who have adapted well to the crisis situation, but also those who have benefited from remote learning (such as students who are shy or experience difficulties in peer relationships). Unfortunately, there is also a significant group (also around 30%) of adolescents who have emerged from the pandemic in a much worse mental state than the rest of their peers. It is important to recognise that their adaptation mechanisms have not been successful and there is an urgent need to help them return to a state of mental well-being. It is also important to identify the factors that led to this situation. This is the aim of the later part of this article.

Based on the overall score of the Covid-19 impact scale, two groups of adolescents were identified—those with positive adaptation to crisis and those with high symptom intensity. As mentioned above, extreme groups identification approach was used and extreme groups were found to represent 27% of the distribution of the variable reflecting overall symptom intensity. The scale ranges from 31 to 155 points, which represent the sum of the respondents' answers to the individual test items. Higher scores indicate higher symptom intensity. The two groups differ significantly in symptom intensity ( $t=-79.001$ ,  $p<0.001$ , table 2).

Further analyses were carried out on the two groups. First of all, the proportions of people of different genders were compared. Girls clearly predom-

Table 2. Overall intensity of mental health crisis symptoms in two extreme groups of adolescents

	Students with positive adaptation to crisis (n=417)		Students with high intensity of symptoms (n=428)		Comparison	
	M	SD	M	SD	t	p
Intensity of crisis symptoms	45.03	13.04	114.25	12.42	-79.001	<0.001

Table 3. Gender of the students surveyed

Gender:	Students with positive adaptation to crisis	Students with high intensity of symptoms	Comparison	
	%	%	$\chi^2$	p
girl	40.5	73.4	93.01	<0.001
boy	59.5	26.6		



inate in the group with high intensity of symptoms, accounting for 73.4 % (Table 3). This clear difference in the numbers of adolescents of different genders confirms the validity of controlling for this variable in the comparisons. When gender significantly differentiated the correlation between the level of crisis and a given psychosocial factor, this was reported each time in the description of the results, indicating the nature of the relationship.

Students with different responses to the crisis situation rated their relationship with peers differently in all the examined dimensions (differences significant

at the  $p < 0.001$  level except in the first area, where  $p = 0.003$ ; Table 4). Students in the positive adaptation group have more positive experiences. They are more often invited by classmates to spend time together (the answer *majority or almost all* was indicated by 37.6% of students in this group, which is significantly higher than 22.9% in the other group). The response about being invited to birthdays and other parties is reported in a similar way (28% in group one to 13.3% in group two). Being consoled and helped is also experienced predominantly by students who are doing well (30.2% to 16.8% reported being helped

Table 4. Quality of peer relationships as perceived by the students surveyed

My peers:		Students with positive adaptation to crisis	Students with high intensity of symptoms	Comparison	
		%	%	$\chi^2$	p
lend me the things I need, e.g. notebooks, books, pens	there is no such person	4.8	1.4	13.857	0.003
	one person	11.3	7.2		
	minority	30.9	30.6		
	majority or almost all	53.0	60.7		
invite me when they do something together during breaks/after school	there is no such person	9.1	9.3	22.666	<0.001
	one person	12.5	15.2		
	minority	40.8	52.6		
	majority or almost all	37.6	22.9		
invite me to birthdays and other parties	there is no such person	19.2	21.7	28.438	<0.001
	one person	14.1	18.5		
	minority	38.6	46.5		
	majority or almost all	28.1	13.3		
help me/console me when I have problems	there is no such person	14.6	18.9	22.078	<0.001
	one person	17.7	22.9		
	minority	37.4	41.4		
	majority or almost all	30.2	16.8		
are happy when we achieve something together	there is no such person	13.9	15.2	18.979	<0.001
	one person	14.4	14.5		
	minority	40.0	51.2		
	majority or almost all	31.7	19.2		

Table 5. Quality of the relationship with the tutor as perceived by the students surveyed

My tutor:		Students with positive adaptation to crisis	Students with high intensity of symptoms	Comparison	
		%	%	$\chi^2$	p
encourages and reassures me when I need it	not at all	16.1	21.0	38.827	<0.001
	rather not	12.7	16.8		
	slightly yes. slightly no	23.3	32.5		
	rather yes	24.2	20.1		
	yes. completely	23.7	9.6		
is concerned about me	not at all	13.9	16.4	32.120	<0.001
	rather not	13.2	16.8		
	slightly yes. slightly no	24.7	34.3		
	rather yes	24.2	22.0		
	yes. completely	24.0	10.5		
provides useful information and advice when I need it	not at all	11.3	15.4	26.332	<0.001
	rather not	11.3	10.7		
	slightly yes. slightly no	22.8	31.8		
	rather yes	27.1	27.6		
	yes. completely	27.6	14.5		
is willing to listen and talk about the things that are important to me	not at all	12.2	18.2	29.702	<0.001
	rather not	12.9	15.7		
	slightly yes. slightly no	21.3	28.0		
	rather yes	25.2	23.8		
	yes. completely	28.3	14.3		
says things to encourage my confidence	not at all	15.3	26.2	41.242	<0.001
	rather not	12.5	15.7		
	slightly yes. slightly no	24.2	29.9		
	rather yes	24.2	17.5		
	yes. completely	23.7	10.7		

by majority or almost all their peers), as is shared happiness when successes are achieved (31.7% to 19.2% in the severe crisis group). The only area of peer relations where the described relationships are reversed is in peers lending the students things that they need. In this case, the statistically significant difference is mainly due to the different value in the response *there is no such person*, which was chosen by 4.8% of the students in the first group and only 1.4% of those in the second group. Gender does not influence the evaluation of the quality of peer relationships (Table 4).

Being supported by the tutor is also a differentiating experience for the students surveyed (Table 5). This relates to the tutor’s encouragement and reassurance provided when needed (the differentiating response is *yes, completely* is 23.7% in the group with positive adaptation and 9.6% in the group with severe symptoms), concern on the part of the tutor (24% to 10.5% respectively), providing information and advice (27.6% to 14.5%).

The efficient coping during the pandemic period was also fostered by the tutor’s willingness to listen and talk (such activity was fully perceived by 28.3%

Table 6. Quality of the relationship with teachers as perceived by the students surveyed

Most teachers:		Students with positive adaptation to crisis	Students with high intensity of symptoms	Comparison	
		%	%	$\chi^2$	p
give more attention to good students	not at all	13.2	6.3	20.967	<0.001
	rather not	23.5	18.7		
	slightly yes. slightly no	29.0	37.4		
	rather yes	22.3	28.0		
	yes. completely	12.0	9.6		
treat students with higher grades better	not at all	15.1	7.2	17.415	0.002
	rather not	28.1	26.4		
	slightly yes. slightly no	24.9	26.6		
	rather yes	19.9	27.6		
are mostly concerned with grades	not at all	11.0	4.7	14.808	0.005
	rather not	21.1	27.1		
	slightly yes. slightly no	34.8	34.8		
	rather yes	22.8	24.5		
make sure that students understand the material taught	not at all	8.9	3.5	23.155	<0.001
	rather not	10.1	14.7		
	slightly yes. slightly no	28.1	32.5		
	rather yes	36.0	39.3		
believe that everyone can learn the material efficiently	not at all	7.0	4.0	19.303	<0.001
	rather not	11.3	14.0		
	slightly yes. slightly no	26.9	30.1		
	rather yes	33.8	40.2		
believe that mistakes are the basis for learning	not at all	9.8	5.8	22.206	<0.001
	rather not	10.3	10.5		
	slightly yes. slightly no	28.8	36.7		
	rather yes	33.3	38.1		
	yes. completely	17.7	8.9		

of the students in the first group and 14.3% of those in the severe crisis group) and by saying things to encourage confidence (in this case, the significant result is due the differences in the responses *not at all*–15.3% to 26.2% and *yes, completely*–23.7% to

10.7%). Among students in crisis, girls experience a greater lack of encouragement and reassurance from the teacher (a response indicating a complete lack of such behaviour from the teacher is reported by 25.8% of girls with severe crisis symptoms and 7.9% of boys).

Table 7. Evaluation of the school atmosphere by the students surveyed

Student opinion:		Students with positive adaptation to crisis	Students with high intensity of symptoms	Comparison	
		%	%	$\chi^2$	p
I like my class	completely false	7.4%	7.5%	25.853	<0.001
	rather not true	7.0%	11.7%		
	neither true, nor false	24.5%	32.0%		
	rather true	31.4%	32.5%		
	completely true	29.7%	16.4%		
I like most of the teacher that teach me this year	completely false	7.4%	7.5%	11.590	0.021
	rather not true	11.3%	15.9%		
	neither true, nor false	24.2%	29.7%		
	rather true	37.2%	33.4%		
	completely true	19.9%	13.6%		
I like my school	completely false	14.4%	16.1%	36.921	<0.001
	rather not true	7.9%	14.7%		
	neither true, nor false	20.4%	27.6%		
	rather true	30.2%	29.2%		
	completely true	27.1%	12.4%		

The interaction between gender, crisis and this factor is statistically significant ( $\chi^2 = 11.183$ ;  $p = 0.025$ ). A similar type of gender difference relates to the teacher’s saying things to encourage confidence ( $\chi^2 = 10.697$ ;  $p = 0.03$ ), with 30.6% of girls and 14% of boys experiencing a crisis never noticing such actions from the teacher at all.

The quality of relationships with other teachers is generally rated higher by students with positive adaptation (Table 6). These students are less likely to experience a teacher’s bias in giving more attention to good students (the answer *not at all* is chosen by 13.2% in this group and 6.3% in the second group) or treating students with higher grades better (15.1% to 7.2%). The positive adaptation is also accompanied by a rejection of the statement that teachers are mostly concerned with students’ grades (11% fully disagree with this opinion in the first group, while in the second group it is 4.7%). It is also important that teachers make sure that students understand the material taught (such behaviour is fully recognised by 17% of students in the first group and 10% in the second group). Belief that everyone can learn the

material efficiently (21.1% in the first group believe that teachers fully hold this position, 11.7% in the second group) and that mistakes made are the basis for learning (17.7% to 8.9% respectively) are the last two factors that differentiate the respondents. Gender does not make a difference in the assessment of the quality of relationships with teacher.

Positive attitudes towards the class, teachers and school are more frequently observed in adolescents who have adapted to the crisis (Table 7). The statement *I like my class* is fully agreed with by 29.7% of those in this group and 16.4% of students with strong crisis symptoms. The evaluation of teachers differentiates students to a lesser extent, with 19.9% of those in the first group and 13.6% of those in the second group expressing full agreement. With regard to opinions about the school as a whole, the differences are mainly limited to two statements: *rather not true* selected more often by students in crisis (14.7%) and *completely true* selected by 27.1% of those with very low symptom intensity. It is noteworthy that the differences in the evaluation of the statement *I like most teachers*, apply only to girls ( $\chi^2 = 15.031$ ;

Table 8. Evaluation of the relationship with parents by the students surveyed

Students' relationship with parents:		Students with positive adaptation to crisis	Students with high intensity of symptoms	Comparison	
		%	%	$\chi^2$	p
We spend time away from home together	never	5.8	6.6	78.116	<0.001
	several times a year	17.5	38.2		
	several times a month	36.0	39.1		
	several times a week	40.8	16.2		
We talk about school and my grades	never	4.1	4.2	1.015	0.798
	several times a year	9.8	8.0		
	several times a month	22.1	23.4		
	several times a week	64.0	64.4		
We talk about my other problems	never	8.6	14.3	9.963	0.019
	several times a year	14.1	17.6		
	several times a month	34.1	31.1		
	several times a week	43.2	37.0		
We play sport and engage in other favourite activities together	never	29.0	37.5	44.800	<0.001
	several times a year	22.5	32.6		
	several times a month	27.3	23.2		
	several times a week	21.1	6.8		
I am involved in household decisions that my parents make	never	12.2	17.6	14.966	0.002
	several times a year	22.3	29.3		
	several times a month	35.3	31.6		
	several times a week	30.2	21.5		
I help my parents in important domestic matters	never	5.3	6.1	13.272	0.004
	several times a year	7.2	10.3		
	several times a month	24.2	32.6		
	several times a week	63.3	51.1		

p=0.005). Girls in severe crisis are more likely to express disagreement with the this statement than girls with positive adaptation to the crisis.

Although the contact with parents is mostly rated differently by the student groups surveyed, this is not the case for conversations about school

Table 9. Degree of parental control as perceived by the students surveyed

Your parents:		Students with positive adaptation to crisis	Students with high intensity of symptoms	Comparison	
		%	%	$\chi^2$	p
Ask who you go out with	never	9.6	4.4	22.973	<0.001
	rarely	10.1	7.7		
	sometimes	18.9	12.2		
	often	29.3	32.6		
	always	32.1	43.1		
Ask/check what you spend money on	never	16.1	16.6	2.843	0.584
	rarely	24.5	26.7		
	sometimes	27.1	25.5		
	often	19.7	21.5		
	always	12.7	9.6		
Ask what plans you and your friends have	never	13.7	9.6	11.449	0.022
	rarely	18.7	15.2		
	sometimes	28.8	25.5		
	often	24.2	29.0		
	always	14.6	20.6		
Ask where you go out	never	5.0	3.7	18.810	<0.001
	rarely	9.6	5.6		
	sometimes	14.9	12.2		
	often	32.4	26.0		
	always	38.1	52.5		
Ask what you do and where you spend time after school	never	13.2	11.9	9.661	0.047
	rarely	17.3	14.1		
	sometimes	26.9	21.1		
	often	21.8	25.3		
	always	20.9	27.6		

and grades (Table 8). The majority of students have such conversations several times a week (rounding the result, this answer is indicated by 64% of students in both groups). Differences include spending time away from home together with parents. It is experienced several times a week by 40.8% of students with positive adaptation. Students in crisis spend time with their parents several times a year (38.2%) or a month (39.1%).

Students in crisis are less likely to have conversations about things other than school (the most significant difference being the answer *never*

chosen by 8.6% of those in the first group and 14.3% of those in the second group). Sports or other favourite activities shared with parents are mainly experienced by students in the first group (21.1% choose the answer *several times a week* to 6.8% in the second group). They are also more often involved in household decisions (30.2% and 21.5% respectively at a frequency of several times a week) and help their parents (63.3% to 51.1% declaring helping several times a week). In the relationships described, there are no gender-based differences among the respondents.

The last area described is the degree of parental control as perceived by the students surveyed (Table 9). More control is perceived by students with severe mental health crisis symptoms. They feel that their parents often ask them who they are going out with (the answer *always* selected by 43.1% of those in the severe crisis group and 32.1 of those in group one), what plans they have with their friends (the answer *always* indicated by 20.6% of students in crisis and 14.6% of those in the first group), where they go out (52.5% of students in the second group are always asked about this) and what they do after school (27.6% of those in the second group). The interaction between gender, intensity of crisis and the components of parental control is not statistically significant.

## Conclusions

The aim of this article was to determine the intensity of psychological crisis symptoms in adolescents as a result of the Covid-19 pandemic and to describe differences in psychosocial factors that support coping with its consequences. These differences were tested in two groups of students—those with positive adaptation to crisis and those with high intensity of symptoms—while controlling for the effect of gender.

Study results lead to the following conclusions:

1. After the pandemic crisis, a significant group of young people (about one third) have deteriorated in their psycho-physical state. Adolescents have experienced an increased state of sadness, anxiety, worry and nervousness. There have also been negative symptoms in terms of self-motivation, expressed in the form of discouragement, boredom, but also problems with concentration. Psychosomatic reactions such as headaches or stomach aches have also appeared amongst the observed symptoms. It should also be noted that there is a relatively large group of adolescents (about a quarter) who used the crisis for their development and came out of it in a better shape. Both the developmental passage of the crisis and the developmental changes may have played a role here.
2. The mental condition of young people is reflected in the Polish Police Headquarters' figures, which reveal of a twofold increase in suicide attempts among girls. There has also been an increase in suicide attempts among boys, though not as spectacular.
3. The presence and support of peers, tutors and teachers is important for students in coping with the crisis. Adolescents with severe symptoms are more likely to lack support, empathy or interaction with classmates. The presence of a tutor who shows concern, interest and boosts students' self-confidence is helpful. Teachers who create a good atmosphere in the classroom and the conditions conducive to learning play an important role. In general, students who are happy with their class, school and teachers' activities have adapted better to the crisis.
4. According to the students, conversations with their parents are often related to their progress at school and the grades they receive. However, spending time with parents plays an important role in adapting to the environmental crisis. Adolescents who talk about their problems, spend time with their parents and participate in home life more often have coped better during the assessed period of Covid-19 pandemic. This group of adolescents is also less likely to perceive the controlling actions of their parents (checking what they spend money on, who they go out with etc.). In the group of students with severe psychological crisis, a decreased sense of bonding with parents is accompanied by a greater focus on controlling behaviour on the part of caregivers.
5. Students' gender modifies the strength of the correlations between psychosocial factors described above and the intensity of crisis symptoms. The lack of supportive relationships with the tutor is particularly impactful for girls. They are more oriented towards relationships with significant others and, with low quality of these relationships, are more likely to experience severe symptoms as a result of the pandemic crisis.

These patterns are consistent with the studies referred to above. Similar conclusions regarding the role of peers and conversations with parents were obtained by Grzelak (2020). Protective factors such as supportive peer relationships and relationships with teachers were observed in studies and publications by Pyżalski (2021) as well as Pyżalski and Poleszak (2020c) and Shoshani & Kor (2021).

However, it is worth observing that according to research, it is not the Covid-19 pandemic that is the main cause of the deterioration of the mental condition of the Polish adolescents. The pandemic was just a trigger that started breaking weak links in a chain. These weak links are peer relations, diffi-

culties in managing emotions and the deteriorating emotional atmosphere at school (cf. Pyżalski and Poleszak, 2020).

In addition to their scientific nature, the conclusions of the study also have a practical value. They confirm the need for activities to reintegrate class groups after a period of remote learning during the pandemic. As part of such activities, building a supportive student environment, strengthening voluntary peer support or peer programmes is of particular importance. Involving students in these activities is largely up to teachers, although it should be remembered that, in light of research (Stunża, et al., 2020), they themselves experienced high levels of overload during the pandemic crisis.

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