IO1 – SURVEY RESEARCH HANDBOOK FOR STUDYING THE IMPACT OF CRISIS STRESS ON THE CURRENT MENTAL STATE OF SECONDARY SCHOOL STUDENTS

'Well-Be project'
(Supporting Students Emotional Health, Well-being and Resilience in Times of Global Crisis)

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SURVEY RESEARCH HANDBOOK FOR STUDYING THE IMPACT OF CRISIS STRESS ON THE CURRENT MENTAL STATE OF SECONDARY SCHOOL STUDENTS

This publication was prepared in the framework of the project

'Well-Be'

Supporting Students Emotional Health, Well-being and Resilience

in Times of Global Crisis

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FOREWORD

This product presents a methodology for studying stress and its effects on adolescents' sense of subjective well-being, motivation to learn, and development in a pandemic situation. It describes the instrument construction procedure and the results of statistical analyses to validate the instrument by determining its factor structure and psychometric properties.

The research approach combines quantitative (questionnaires) and qualitative (interview) metrics. Three survey forms were developed - for students aged 14-19, for parents and for teachers of children of the same age in 4 language versions - Bulgarian, English, Spanish and Italian, as well as three templates for a standardised interview with representatives of these three groups.

The construction of the methodology goes through several stages, which are described in detail in this manual. Testing of the forms was conducted on-line (via KwikSurveys platform) between May and November 2021 among a sample of 1562 participants from Bulgaria, the UK, Spain and Italy.

The summary results of the survey provide information on the overall impact of the pandemic, sources of stress and coping strategies for children experiencing stress, and resources for children to adapt and maintain well-being in the project countries. Based on this, risks and vulnerabilities among students, and adolescents' learning and support needs in the pandemic and post-pandemic situation were identified. These were the starting point for the development of Well-Be project output 2 – the Well-Be Teacher's Guide.

The study is being conducted with the financial support of the EU Erasmus+ programme under the project "Supporting Students Emotional Health, Well-being and Resilience in Times of Global Crisis – Well-Be", Ref No 2020-1-UK01-KA201-079148, conducted by partners from Bulgaria, Italy, Spain, and the UK. All data from the consortium is published on the project website: https://www.wellbeproject.eu

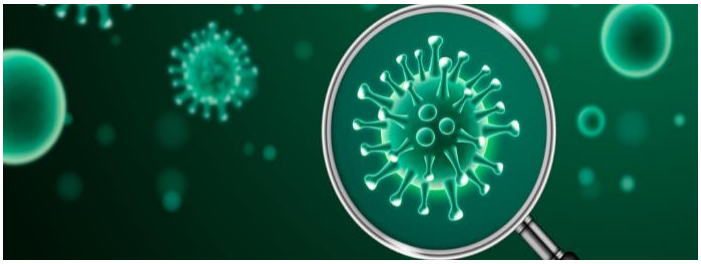
Yuliyana Dobreva

On behalf of research coordinators

1. Analysis of the current pandemic situation in the countries involved (November – December 2021)

1.1. Introduction

The COVID-19 epidemic began in late 2019 and very quickly grew into a pandemic that hit the entire world hard and shook the education sector at all levels. In order to control the spread of the pandemic, many schools and colleges were forced to remain closed and switched to e-learning. A number of physical distance measures were introduced which severely restricted social activity.



Two years later, it is difficult to predict when this crisis will end and what its effects will be on all aspects of life.

1.2. Bulgaria

The first confirmed case of the disease in Bulgaria is from 8 March 2020. On 13 March 2020, the government introduced a state of emergency (lockdown) across the country for a period of one month, and an epidemic emergency was declared from 14 May, which has now been extended to February 2022. During this period, the country has experienced four waves of the epidemic. According to the European Centre for Disease Prevention and Control (ECDC) for the first half of October 2021, Bulgaria has the highest coronavirus death rate in Europe. According to public sources, the main risks to pandemic control are related to low vaccination coverage in the country and the emergence of new more virulent and more lethal variants to which immunity acquired from previous illness may not provide sufficient protection. As of 21 October 2021, a decision of the Council of Ministers introduced a requirement to present a "green certificate" when attending public events and places, with the exception of groceries, pharmacies and hospitals. At the same time, by November 2021, all European countries were experiencing an increase in incidence with partial or full lockdowns are being introduced, even in countries with high vaccination rates.

The COVID-19 pandemic and related emergency measures to limit the spread of the virus in Bulgaria lead to the suspension of all school classes from 13 March 2020. The learning process was reorganised and conducted in an electronic distance learning environment almost until the end of the 2019/2020 school year.

Schools and teachers were given a significant degree of freedom to determine the models, forms, methods and tools for organising teaching and learning processes according to the specific school context and the needs of the students. The 2020/2021 school year was held predominantly in distance form but ended in person for all students. The 2021/2022 school year also began in person, but due to increasing numbers of cases, the teaching quickly moved back to an electronic environment. Since mid-November 2021, some schools have introduced twice-weekly testing of primary school students and face-to-face teaching with a negative result. There has also been an opportunity for parents to choose in what form their children's education should take place. Secondary education students continue to study in the distance form. Returning to school upon possession of a 'green certificate' is discussed.

At the request of the Ministry of Education and Science, the Institute for Research in Education conducted a study showing that the Covid-19 epidemic created the biggest crisis in education and learning in the last century, affected education in an unprecedented way, and the negative impact on human capital will be long-term.

1.3. The UK

The following text is taken from a desk-based research exercise undertaken in March 2021 and forms part of the UK contribution to the Well-Be project.

Since then, the world has seen dynamic changes in the behaviour of the virus and how international and national agencies have responded to those changes: the emergence of new variants (Delta, Omicron) and medical interventions (vaccines) are the most obvious examples of those behaviours and responses.

Consequently, the report below is reflective of the time it was written in. The landscape has continued to change, and our understanding of the pandemic is also constantly developing.

Since March 2020 when schools closed at the start of the first national lockdown, more families have fallen into poverty and all the major risk factors to children – domestic violence, poor parental mental health, and alcohol/substance abuse – have heightened. Children have been out of school for most of the year, less likely to attend health services, and are less able to access informal support like children's centres, many of which closed or moved online throughout the year. Many local authorities anticipated a spike in social care referrals in September with the school return. However, this spike did not occur. In November 2020, referrals were 9% lower than usual – despite schools being open at this time, and

better able to identify vulnerable children. The current national lockdown and school closures risks even more at-risk children going undetected and not getting help.

Measures taken to the tackle the crisis have depended on many factors: geography, infection rates and ever-changing government policy. On 8 March 2021, operational guidance from the government was that all pupils should attend school (use of face coverings in classrooms for secondary age pupils and staff). Secondary pupils would be offered testing from 8 March. All schools had to follow the system of controls to minimise the risk of infection, including planning for asymptomatic testing and have to communicate any changes in the processes to parents.

Gemma Moss, Director of the International Literacy Centre at UCL Institute of Education considers whether COVID-19 can act as a catalyst for change in education, leading to different policy choices and a more stable education system.

A myriad of responses has been generated by many agencies concerned with the health and well-being of young people. A selection of some of those responses offer a wide range of strategies to dealing with the following themes:

- Health and wellbeing
- Things for children to do and lessons at home
- Things for adults to do, reading, activities and courses
- Coronavirus (Covid-19) information

The Department for Education (DfE) have produced a remote learning framework for all schools and FE colleges. Whilst not concentrating on specific curricula or subjects, it offers guidance on good practice on remote learning.

The systematic review of the literatures on learning loss and learning disruption, concluded that the literature on learning disruption after unplanned events such as natural disasters is more helpful in planning for school resilience post-COVID in the UK than the research on learning 'lost' over the annual summer holidays. Planning should be guided by an eye to the longer term, and not thought of as a quick fix.

Our data show teachers, head teachers and system leaders have not felt listened to by the DfE. Our respondents have expressed little confidence in decisions taken by government or the ways in which these have been communicated. The very different priorities that have emerged during the crisis for government and for teachers have set an agenda for change. We need more durable, more deliberative, and more transparent ways of connecting all

those involved in managing the many different aspects of education across a fragmented system. Stronger, locally responsive networks would allow policy decisions and national guidance to develop from a much fuller awareness of what the every-day realities of school life are. Such networks would also help schools collaborate on finding local solutions to novel dilemmas posed by the crisis.

In May 2020, the British Science Association (BSA) released survey results revealing almost nine in ten young people (14-to-18-year-olds) do not think scientists (89%) or politicians (92%) are talking to them when discussing COVID-19. The BSA warned the ongoing lockdown in the UK could have serious ramifications if young people feel left out or frustrated by the government's failure to engage them in its guidance. The research, conducted in collaboration with One Poll, using a nationally representative sample of 2,000 adults and 1,000 14 to 18-year old across the UK, revealed young people are putting their faith in their parents to provide them with accurate COVID-19 information. According to the data, young people trust their family (36%) more than they do scientists and over one in five (22%) want to hear more from their family about the virus.

The Mental Health Foundation researched the impacts of lockdown on the mental health of children and young people. As a result, it is recommended that policymakers and those working with children and young people develop and support multidisciplinary and multisectoral responses that ease the anxieties and worries of this group more broadly, but also identify and support those for whom lockdown will have been most challenging.

In January 2021 The Lancet, the foremost medical journal published Child mental health in England before and during the COVID-19 lockdown by Newlove-Delgado et al. The results highlight how social protection systems must respond to the socioeconomic challenges facing families. Children who were more likely to experience mental health problems were more than twice as likely to live in households who had recently fallen behind with their bills, rent, or mortgage payments compared with those whose families were able to pay their bills.

One in ten children and younger people reported that during the pandemic their family did not have enough to eat or had increased reliance on foodbanks compared with before the pandemic. These stark conditions matter more when schools close, highlighting the unequal effect of lockdown on learning. 12·0% of children had no reliable internet access at home, 19·1% no quiet space to work, and 26·9% did not have a desk at which they could study. Such socioeconomic information provides crucial context for schools planning pupils' home-based learning, and emphasises the need, where possible, to prioritise schools remaining open.

1.4. Spain

The coronavirus disease 2019 (COVID-19) pandemic has affected the world radically since 2020. Spain was one of the European countries with the highest incidence during the first wave.

By January 2021, Spain had suffered six waves with the sixth wave of the coronavirus pandemic gaining pace just ahead of the Christmas holidays. Over just one weekend, the 14-day incidence of cases jumped nearly 100 points to reach 609 infections per 100,000 inhabitants, according to the latest data released by the central Health Ministry. That's a 60% rise on the previous week and a level not seen since the start of August. 791,063 cases have been reported in the last 14 days (30 December 2021).

An important effect of the lockdown which is a vital point for this report is the one related with the educational systems. The closure of educational centres and universities was one of the first measures that were implemented. In this context, the learning and development of girls, boys and adolescents was interrupted and the socioeconomic circumstances of families were more relevant to give continuity to the education that was reoriented to the online education. Not all families have the correct resources for making real and in a good conditions the online education and the most vulnerable cases, dropout rate could be increased, aggravating inequality between children.

Which effects have had these measures? In relation to confinement measures, Spain has been one of the most restrictive countries, concerning permission for minors to leave their houses. From 14 March to 26 April 2020 minors in Spain were not allowed to do this. This meant they were in lockdown at home for six continuous weeks`; the adverse psychological effects on children and teenagers are yet to be determined.

Pizarro, R (2020), researched 788 minors, 440 of whom were between 8 and 12 years old and 348 between 13 and 18 years old, and the results, (although the long-term effects are not yet known), have been:

"It appears that the consequences of confinement on children are mostly in the affective area, this also being reflected at the behavioural level. They show problems of rebellious behaviour (dz=0.75), rage control (dz=0.61) and emotional regulation (dz=0.27) to a greater extent. As opposed to adults, children do not clearly identify these altered conditions in themselves, and it is frequent that symptoms like irritability or aggression appear as a warning signal of more chronic disorders for this age group. We have also discovered that during confinement they showed higher levels of anxiety (dz=0.14), depression (dz=18), and less integration and social competence (dz=16), although with lower effect sizes. However, it should be pointed out that such high percentages as 33.2% and

22.8% of the children in confinement score higher than the clinical sample of SENA on anxiety and depression respectively"

But, what has been the impact of the pandemic on child and adolescent mental health in Spain?

According to the Save the Children report1 analysing mental health and suicide among Spain's children and adolescents, children living in low-income households are four times more likely to suffer from mental and/or behavioural disorders than those in high-income households.

The pandemic has brought new worries, fears, and unhappiness to the lives of children and adolescents, and has highlighted the magnitude of the mental health problems suffered by children in our country.

In their recommendations for the Mental Health Strategy to become a reality, the school plays a key role in prevention and early detection. For this reason, they propose, among other proposals, an investment of specialised training of teaching staff, accompanied by of actions for fathers and mothers.

1.5. Italy

Two years have passed since the start of the Covid-19 pandemic. In 12 months, the consequences on the education of children and adolescents are clearly visible: worldwide, they have lost an average of 74 days of schooling each, more than a third of the global average school year of 190 days.

A survey shows that students in Italy have found themselves attending their schools for much less than half of the days theoretically planned.

During the school year 2020/2021, from September 2020 to the end of February 2021, attendance varies from region to region. For example, in Calabria, high school students were able to attend lessons in person for 35.5 days as opposed to 97 on the calendar, their peers in Florence went to school 75.1 days out of 106.

The analysis of some cities shows an Italy at different speeds: the trend of contagion risks and different administrative choices have created differences between Italian cities. (Save the Children).

During the second Covid wave the situation of school attendance in Italy is strongly unequal, revealing how some of the regions particularly affected by

[1] https://www.savethechildren.es/sites/default/files/2021-12/Informe_Crecer_saludablemente_DIC_2021.pdf?utm_source=NotaPrensa&utm_medium=referral&utm_campaign=SaludMental,

school drop-out even before the pandemic are those in which the least amount of school time in attendance for children and young people has been ensured. The risk is therefore that of a further widening of educational inequalities".

The pandemic, which forced students to abruptly stop attending school three months before the end of the school year 2019/2020, has also severely affected their ability to attend classrooms in 2020/21.

School closures began in February 2020, the pandemic was declared on 11 March, pushing 91% of the world's students out of classrooms in the middle of the school year.

It is estimated that, if no action is taken, there will be a learning loss equivalent to 0.6 years of schooling and a 25% increase in the share of boys and girls in lower secondary school below the minimum skill level. These losses will be greater for students from less educated families, confirming concerns about the inequity of the pandemic's consequences.

It is therefore necessary for a clear picture of the situation to be available in Italy as well, in order to be able to intervene as soon as possible to reach the students most in difficulty, with an individualised plan for didactic support, both distance and non-distance, and the recovery of learning.

1.6. Summary

The comparative analysis of information on the evolution of the Covid-19 crisis in the participating countries shows a high similarity in the dynamics of the pandemic and the nature of the counter-epidemic measures that have been adopted. The difference is that in Bulgaria the lockdowns were shorter and less widespread than in the UK, Spain and Italy, as well as the low vaccination coverage in the population.

Everywhere, since the beginning of the crisis, distance education has been introduced for large numbers of students for varying lengths of time, forcing children into isolation and putting them in greater inequality. Health experts warn that this results in increased risks to their mental health and development. In particular, distance learning negatively affects their stress levels and emotional state, the quality of their education, and their communication skills.

Overcoming the crisis requires a series of measures beyond the restoration of face-to-face learning. The conviction that in order to be managed, any process must be well known shapes the need to explore the different aspects of the phenomena taking place and the accompanying experiences of all parties involved.

2. Aim of the IO1

The purpose of this output is to describe the overall process of creating and procedure for implementing a reliable instrument to study the impact of a pandemic crisis on the current mental state of secondary school students.

The assumption is that in the context of a pandemic and its concurrent restrictive measures, students are under intense stress. Their use of resources and coping strategies is reduced and underperforms in the new context, negatively affecting their experience of well-being and posing risks regarding the development of their adaptive capacities in the long term.

The pandemic situation with the spread of Covid-19 is unprecedented in nature, making it necessary to develop tools to explore its impact on different target groups and in different aspects of life.

The need for such a product is also suggested by the key requirement in management for regular measurement of processes in order to know them well and manage them effectively.

IO1 presents a complex methodology for studying the dynamics of the researched phenomena in each of the partner countries, which provides a basis for comparative analyses and forecasts for the development of the processes in a European perspective.

3. Target group

The direct target group of the project is secondary school students (14-19 years). This is the period of middle and late adolescence, which is characterised by an increased drive for independence and

more radical behavioural and emotional expressions. This is when more concrete ideas and plans for future education and careers take shape. In the context of the Covid-19 pandemic, the lifestyles and habits of adolescents are changing dramatically, which is linked to e-learning and physical distance measures that cause social isolation. Prospects regarding future training and professional development for young people are becoming vague and unclear.

Parents and teachers, who are presumably closest to the children and have first-hand impressions and involvement in their education and upbringing, are included to study the overall picture. They are a stakeholder in the adolescent development process, and their observations of children are therefore significant for assessing impact.

4. Methodology

Tool development integrates research, development and analytical activities. The methodology is developed in the context of stress and resilience theory, mental well-being and motivational dispositions.

4.1. Theoretical background

Stress as a construct is defined in various theoretical approaches as a stimulus, as the result of a cognitive appraisal, or as a physiological response. In cognitive transactional theory, on which the present analysis is based, stress is viewed as a product of the interaction between the individual and the environment, refracted through the evaluations that the individual makes of himself and the environment (Lazarus, 1993). The measurement of stress as a result of cognitive appraisal implies the integration of different instruments to reflect most aspects in the individual-environment interaction, i.e. the preconditions, symptoms and effects of the experience, as well as coping and adaptive responses and supportive resources. The coping behaviours undertaken by the individual are most often oriented in two aspects: towards solving/avoiding the problem and towards managing the emotions provoked by the situation. Depending on this orientation, they have been defined as problem-focused coping and emotion-focused coping (Folkman & Lazarus, 1980). Coping strategies can be implemented through active or passive behaviours and their effect influences the duration and intensity of the experience of stress, respectively the processes of adaptation to the changes taking place. A criterion for distinguishing types of coping strategies may also be the direction in which an individual invests his or her efforts to cope with stress - toward approaching, accepting, and engaging

with what is happening and its consequences, or toward distancing and avoiding the events and their threat (Carver & Connor-Smith, 2010). There is also "meaning-focused coping" (Folkman, S., Park, C., 1997), in which efforts to cope with the experience of stress are focused inward, toward better understanding and finding connections between what is happening and personally valuable things, toward finding likely benefits in the context of values and beliefs.

In psychology, "well-being" is seen as a multidimensional phenomenon, the result of subjective experience and evaluation, which brings it closer in essence to the construct of stress. Subjective well-being is "the quality of life in terms of the presence and frequency of positive and negative emotions and one's general satisfaction with life" (Diener at al., 1985). According to researchers in the field of the hedonistic perspective, engaging in activities that elicit positive emotional experiences and achieving desire satisfaction are important for leading a well-being life. In a pandemic context, it is assumed that opportunities for this are reduced, and coping mechanisms for adolescents to deal with stress and adapt to the situation are still being constructed.

4.2. Statistical procedures

All statistical data from the questionnaires were processed using IBM SPSS 26 Statistical software and the following analyses were performed:

Descriptive statistics – to provide a summary of the results, displaying clearly the mean for all variables, their mean, median and standard deviations (measures of how the sample's answers vary), the minimal and maximal data points and more. Together with that analyses of frequency and normality of frequency are conducted, so as to understand whether answers are normally distributed or there is something unusual in the way the sample has answered as this has to be kept in mind in interpretations.

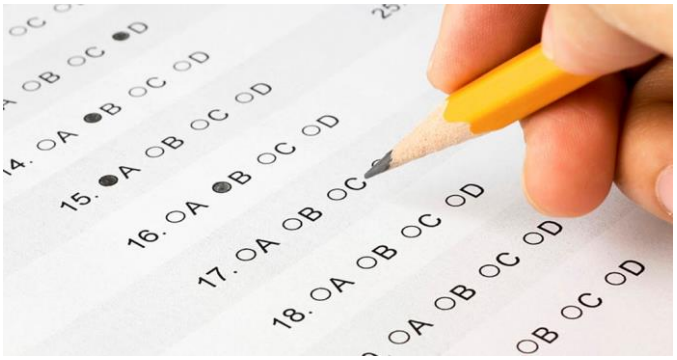
Factor analyses – represent the grouping of the items into factors that are equivalent to the measured variables.

ANOVA analyses/T-tests (Group Comparisons) – comparison of results for different variables/factors and different groups of respondents. This determines whether the difference in results between two or more groups is statistically significant or a result of random chance.

Correlation analyses – to find the interrelations among the variables.

Demographic analyses – these include group comparisons with groups based on demographic features.

4.3. Method



The research approach integrates quantitative (questionnaires) and qualitative (interview) measurement methods. They are developed in three forms for the study of three separate groups - students (aged 14-19), parents with children of the same age and teachers who teach this age group. The construction of the methodology goes through several stages, including:

- theoretical preparation and systematization of information,
- compiling an initial version of the tools,
- testing it through focus groups and making adjustments,
- translation into English - both direct and reverse,
- discussion with colleagues from project partner organisations and adjustments,
- translation into the languages of the partners - direct and reverse;
- conducting the actual survey with the target groups,
- statistical processing and data analysis,
- finalisation of a reliable and valid methodology.

In their original version, the questionnaires contained the following:

- for students - 122 items and 9 socio-demographic questions,
- for parents - 121 items and 12 socio-demographic questions,
- for teachers - 86 items and 9 socio-demographic questions.

Following a test of the questionnaires among focus groups of 9 students, 10 parents and 11 teachers and a discussion on the understanding and wording of the questionnaires and the instructions for completion, the final version was compiled. Thus, the form for students has 118 items and 8 socio-demographic questions, the form for parents has 118 items and 12 socio-demographic questions, and the form for teachers has 68 items and 8 socio-demographic questions.

The forms for parents and students are almost identical, except that students complete using the self-assessment method and parents are instructed to assess their own child at this age. Some of the teacher items are similar to those of student and parent forms.

In the final version of the survey, there are 7 scales for students and parents to complete, which can be used as separate instruments, and 6 similarly separate scales for teachers to complete. Additionally, there are four single markers to explore the overall impact of the pandemic, stressful events, and students' physical and mental health in the student and parent forms, and separate questions on the impact of distance learning on students and engaging topics during the pandemic in the teacher form.

Three interview forms were developed for each of the target groups. They contain a series of open questions for self-assessment and evaluation of the impact of the pandemic and changes in children's lifestyle, mood and self-esteem and their needs, as well as a section for participant demographics and contact information. Questions for teachers focused primarily on the impact of distance learning on the children they were observing and their own experiences as participants in this process.

The three question forms and interview templates were subjected to direct and reverse translation into English by certified translators for linguistic validation. The English versions were provided to the partners to translate them into Italian and Spanish respectively.

4.4. Structure of the questionnaires

Each of the survey questions with more than one item – namely, questions 4- 10 in the Student and Parent Form and questions 1-6 from the Teacher Form – are named domains, as they aim to assess certain broad areas (or variables). The items of these questions, however, concern various aspects of the total domain which can be grouped together based on their semantics. How they are grouped can only be assessed after responses to the questionnaires are gathered – this grouping is based on the answers of our subjects as they show how people understand the items, among other things. Analysis of the Factors then show how the items of each question are grouped together.

Before a factor analysis can be done, two additional tests are run to determine whether the data and sample are appropriate for factor exploration. These are the Kaiser-Meyer-Olkin and Bartlett's test. The higher the value of Kaiser-Meyer-Olkin (KMO), the better – it needs to be more than 0,600. The lower the value of Bartlett's p, the better – it needs to be less than 0,05.

The results of the factor analysis give the groupings of items which contribute to the measurement of one variable. Naming a factor turns it into a scale.

The last step of these analyses which determine the structure of the questionnaire are the Reliability analyses. Internal Consistency analyses shows if a scale is reliable through a coefficient of Cronbach's Alpha. When the items of one scale are too different – Cronbach's Alpha is less than 0,600 – it means this scale is not measuring one and the same thing but a few different variables and cannot be used in its totality.

4.4.1. Structure of forms for students and parents

Overall impact of the pandemic on the family - rating the overall impact of the pandemic on a 5-point Likert scale with responses "very negative", "rather negative", "neither negative nor positive", "rather positive", "very positive".

Stressful events during the pandemic - participants indicate negative events that have happened in their family (*Covid cases, serious illness, loss of a relative, loss of a job in the family, reduction of income, separation, change of residence, serious conflicts*), with the option to indicate something else outside the list.

Physical and mental health - two overall physical and mental health scores on a 5-point Likert scale with grades of "poor", "fair", "good", "very good" and "excellent".

Symptoms of stress - a 21-item scale describing physical, emotional, intellectual and behavioural manifestations that may result from stress. The instruction is framed as a question, "*Since the beginning of the pandemic, how often have you observed each of the following in yourself/your child?*" Sample items are "*Forgetfulness*", "*Fear of going out*", "*Fatigue*", and these are rated on a 5-point Likert scale with grades of "never", "seldom", "sometimes", "often", "always".

Restrictions – an 8-item scale assessing the impact of pandemic restrictions on students. The instruction is framed as a question, "*How do the RESTRICTIONS on the following affect you/your child during the pandemic?*" Sample items are, "*Meeting with friends*", "*Clear vision of the future*", rated on a 5-point Likert scale

with responses "entirely negative", "rather negative", "doesn't affect me/us in any way", "rather positive", "entirely positive".

Lifestyle changes - a scale with 9 items describing sources of stress during the pandemic. The instruction is framed as a question, "How *do the following things that the pandemic has imposed on us/your child/ affect you?"* Sample items are, *"Limited privacy at home"*, "*Adult fears and insecurities*", the impact of which participants rate on a 5-point Likert scale with grades of "entirely negative", "rather negative", "doesn't affect me/us in any way", "rather positive", "entirely positive".

Coping Strategies - a scale consisting of 24 items that represent different strategies students might use to cope with stress. The instruction was formed as a question, *"Which of the following do you/your child prefer to do in their free time in a pandemic situation?"* Sample items are, "*Reading books*"," Participating *in training courses and seminars online*", "*Shopping online",* and participants rate their frequency of use on a 5-point Likert scale with grades of "never", "seldom", "sometimes", "often", and "always".

Adaptation resources - a scale of 21 items describing resources for adaptation and maintaining well-being. Instruction is framed as the question *"To what extent do the following help you/your child/to cope in a pandemic situation?"* Sample items are, *"My sense of humour"*, *"Pursuing a clear goal and plan for the future"*, and *"Connecting with my friends"*, with participants rating the extent to which each is applicable on a 4-point Likert scale with responses of "not at all", "a little", "mostly", "fully", and an option corresponding to 0 – "does not apply to me/my child".

Personality potentials - a scale of 15 items assessing the extent to which a personality trait is inherent in the student. The instruction is framed as the question *"To what extent do the statements below characterize you/your child as a PERSONALITY and apply to you/her in general?"* Sample items are *"Overall I (they) feel that what I (they) do makes sense", "Have(s) clear plans for his/her future"', "Have(s) a vivid/rich imagination"*, and are rated on a 5-point Likert scale with grades of "not at all", "to a small extent", "moderately", "to a great extent", and "completely".

Subjective well-being - a scale of 6 items that assess a student's level of subjective well-being by relating it to signs of well-being. The instruction is framed as the question *"To what extent do the following statements apply to you/your child during the pandemic?"* Sample items are *"Feels cheerful and in good mood"*, *"Gets the important things he/she wants"*, rated on a 5-point Likert scale with responses "not at all", "to a small extent", "moderately", "to a great extent", and "completely".

4.4.2. Structure of the teachers form

Overall impact of the pandemic on students - a 9-item scale assessing the impact of the pandemic on various emotional and behavioural aspects of students' lives on a 5-point Likert scale with responses "very negative", "rather negative", "neither negative nor positive", "rather positive", "very positive".

Stress from online learning - a scale with 13 items that represent a direct consequence of distance learning; teachers rate the extent to which this outcome is a source of stress for students. Instruction was framed as the question *"To what extent are the following sources of stress for students in an e-learning environment?"* Sample items are *"Teachers' digital competencies"*, *"Online exams"*; these are rated on a 5-point Likert scale with responses "not at all", "to a small extent", "to some extent", "significantly", "extremely".

Restrictions - an 8-item scale assessing the impact of restrictions during the pandemic on students. Instruction is framed as the question *"How do the following RESTRICTIONS affect your students during the pandemic?"* Sample items are *"Meeting with friends"*, *"Freedom of action"*, which are rated on a 5-point Likert scale with responses "entirely negative", "rather negative", "no impressions", "rather positive", "entirely positive".

Changes in lifestyle - a 6-item scale describing sources of stress during the pandemic, the impact of which participants rated on a 5-point Likert scale with grades of "entirely negative", "rather negative", "no impressions", "rather positive", "entirely positive". The instruction is framed as the question *"How do the following things that the pandemic has imposed on us affect your students?"* Sample items are *"The constant presence of parents"*, *"Keeping physical distance"*.

Engaging topics - a scale with 12 items representing different topics that can engage students' attention and stimulate their active participation in discussions during the pandemic; assessments are given on a 5-point Likert scale with responses of "not at all", "to a low extent", "moderately", "to a high extent" and "completely". Example items are *"Sports"*, *"Art"*, *"Social problems"*.

Adaptation Resources - a scale of 19 items describing resources for adaptation and maintaining well-being. Instruction is framed as the question *"To what extent do the following help students cope in a pandemic situation?"* Sample items are *"Physical activities"*, *"Participation in training courses and group activities"*, *"Understanding and support in the family"*, and teachers rate the extent to which these are used by students on a 4-point Likert scale with responses "not at all", "little", "mostly", "fully" and an option corresponding to 0 "I cannot specify.

4.5. Structure of the standardized interview

The purpose of the interviews is to extend and deepen the information gained from the quantitative research with the questionnaires, so the questions follow their logic. The choice and formulation of the questions takes into account that both parents and teachers suffer the effects of the crisis, or have their own experiences that reflect the mental state and motivation of the children. Of course, the interviewers can ask additional questions, but for the analyses to be correct, the questions must be identical for all respondents.

At the end of the interview, respondents are encouraged to share anything else they would like to share (What else would you like to share?).

4.5.1. Interview form for students

The questions in the form for students are for self-assessment of the studied phenomena on the factors of the questionnaire. Only the question on stress manifestations is formulated for the evaluation of their peers in order to minimise socially desirable responses.

Overall impact of the pandemic on the family: How has the pandemic changed your life and the life of your family? What non-pandemic related changes have occurred in your family during this period?

Symptoms of stress: How has isolation affected your classmates and/or friends?

Coping strategies: How did you organize your time during the pandemic and your stay at home? What was your routine?

Sources of stress: What is it that you missed the most during this period? Why?

Coping resources: What is it that helped you cope and maintain psychological comfort? How? What could have been helpful to you? Who could have helped you? (min. 3 answers)

Needs: What do you need most now? What do you want to remember from this period? What would you like to forget?

4.5.2. Interview form for parents

Overall impact of the pandemic on the family: How has the pandemic changed the life of your family and your teenager? What non-pandemic-related changes have occurred in your family since the crisis began? What is your opinion about distance learning?

Symptoms of stress: How has isolation affected your son/daughter?

Coping strategies: How did your child organise his/her time during the pandemic and the stay at home? What was the regimen like? What did he/she usually fill his/her time with?

Sources of stress: What was it that he missed the most during this period? Why?

Coping resources: What was it that helped him/her cope and maintain his/her psychological comfort? How? What could have been helpful to him/her? Who could have helped him/her?

Children's needs: What do they need most now?

Parents' needs: What do you need most to develop his or her resilience to stress?

4.5.3. Interview form for teachers

Overall impact of the pandemic: How has the pandemic changed the lives of your students? What are the most significant impacts of the crisis on students? What is your opinion on distance learning? List min. 2 positive and 2 negative aspects of distance learning?

Sources of stress: How has isolation affected your students? How has distance learning affected your students? What was it that the adolescents missed most during this period? Why?

Coping resources: What was it that helped them cope and maintain their psychological comfort? How? What could have been helpful to them? Who could have helped them? What needs to be changed in the education system to deal with crises of this scope and duration?

Students' needs: what do they need most now? (min. 3 answers)

Teachers' needs: What do you need most to help them overcome the damage?

4.6. Procedure of the actual survey

The survey was conducted online, via the KwikSurveys platform (https://kwiksurveys.com). A link to the relevant form was sent to students, parents and teachers along with informed consent before the actual survey began.

The survey was conducted between May and November 2021 as follows:

- Bulgaria - May-June 2021. This period coincides with the end of the school year 2020/2021, when, given the weakening of the third epidemic wave, schools were open. This makes it suitable for collecting normative statistics on the impact of the pandemic as a whole.
- UK - October-November 2021. This period coincides with the beginning of the school year 2021/2022, when UK was in national lockdown and schools were closed.
- Spain - October-November 2021. This period coincides with the beginning of the school year 2021/2022, when the epidemic wave was not so strong in Spain and schools were open.
- Italy - August-October 2021. This period coincides with the end of the school vacation and the beginning of the school year 2021/2022.

This wide time range sets some limitations on the comparative analysis to be considered in terms of the evolution of the pandemic, respectively the different response it may elicit in the individuals' respondents.

5. Results of the statistical analyses of the questionnaires by country

5.1. Description of the sample

A total of 1562 participants took part in the questionnaire survey, of whom 854 were students, 330 were parents and 378 were teachers, distributed as follows:

- Bulgaria
  - Student respondents were grouped by age into three groups: 14-15 (N = 55), 16-17 (N = 135), and 18-19 (N = 71). Their gender distribution was: girls- (N = 194) 77%, boys- (N = 67) 23%. Of these, 75% live with two parents and there is more than 1 child in the family.
  - In the group of parents, the average age is 44, 87% are women and 13% are men.
  - For teachers, the average age was 48, 83% female and 17% male.
  - According to place of residence, those from Sofia prevail (N = 413) 83%, those from the countryside are 17% (N=72).

- UK
  - Student respondents are grouped by age into three groups: 14-15 years (N = 125), 16-17 years (N = 126), and 18-19 years (N = 8). Their gender distribution was: girls 71% (N = 184), boys 9.7% (N = 25), Other 15.1% (N= 39). Of these, 66% live with two parents.
  - In the group of parents – 60 respondents, the average age is 46 years, 75% were women and 25% were men.
  - For teachers – 192 respondents, the average age is 44 years, 69% female and 30% male; 1% opted not to answer.
  - Analysis of the place of residence of all persons surveyed is shown by English region below: London – (N39) - 16%; East Midlands (N = 31) 13%; East (N = 30) 12%; North West (N = 29) 12%; South West (N = 28) 12%; Yorkshire (N = 24) 10%; South East (N = 23) 9%; West Midlands (N = 22) 9%; South (N = 17) 7%.

- Spain
  - Student respondents are grouped by age into three groups: 14-15 years (N = 80), 16-17 years (N = 51), and 18-19 years (N = 45). Their gender distribution was: girls 57% (N = 100), boys 41% (N = 72). Of these, 79,5 % live with two parents.
  - In the group of parents – 46 respondents, the average age is 50 years, 64% (N = 34) were women and 36% (N = 12) were men.
  - For teachers – 49 respondents, the average age is 43 years, 75% (N = 41) female and 20% (N = 11) male; 1 subject chose option "Other" and 1 opted not to answer. 1 value is missing.
  - Analysis of the place of residence of all persons surveyed is shown that all subjects live in cities of more of 45.000 citizens.

- Italy
  - Student respondents are grouped by age into three groups: 14-15 years (N = 14), 16-17 years (N = 106), and 18-19 years (N = 17). Their gender distribution was: girls 66% (N = 97), boys 32% (N = 47). 3 preferred not to answer (2%). Of these, 74 % live with two parents.
  - In the group of parents – 55 respondents, the average age is 48.51 years, 69% (N = 38) were women and 27% (N = 15) were men.
  - For teachers – 70 respondents, the average age is 43 years, 84.3% (N = 59) female and 11.4% (N = 8) male; 1 subject chose option "Other" and 1 opted not to answer.

101 interviews were conducted: 42 students, 30 parents, 29 teachers. A content analysis was done on the interviews data.

Table 1. Sample distribution by group, country and gender.

Countries / Respondents	**Bulgaria**		**UK**		**Spain**		**Italy**		**Σ**	
Students	261		270		176		147		854	
	M 23%	F 77%	M 10%	F 71%	M 41%	F 57%	M 32%	F 66%	M 27%	F 68%
Teachers	62		192		54		70		378	
	M 17%	F 83%	M 30%	F 69%	M 20%	F 74%	M 11%	F 84%	M 20%	F 78%
Parents	162		60		53		55		330	
	M 13%	F 87%	M 25%	F 75%	M 36%	F 64%	M 27%	F 69%	M 22%	F 74%
Total	**485**		**522**		**283**		**272**		1562	

The collected data were processed with IBM SPSS 26 statistical processing software, first removing incomplete or incorrect answers from the database.
The psychometric attributes of the three forms were examined separately for each of the 20 scales and for individual questions not included in a scale.

5.2. Results on methodology validation for Bulgaria

5.2.1. Form for students

Factor Structure: In 5 of the 7 individual scales of the student form, a Kaiser-Meyer-Olkin (KMO) test was first conducted to assess the adequacy of the collected sample, the results of which showed good to excellent values (coefficients ranging from 0.698 to 0.908). The results of Bartlett's tests of data sphericity also indicate that the data at each scale are appropriate for factor analysis. Exploratory factor analyses were then conducted using the Principal Component Analysis method, using Varimax rotation of the internal correlations at an interpretation criterion of factor weights >0.30. Considering the results of these, as well as the internal consistency results of the identified scales, two subscales were formed for the "Life Changes" scale, two subscales for the "Coping Strategies" scale and four subscales for the "Adaptation Resources" scale:

Table 2. Results of Varimax rotation of main components on scales *"Life changes", "Coping strategies"* and *"Adaptation resources"* in the form for students

Domain	Subscale	Percent variance explained
Life changes	Pressure from external coercion	17,29
	Relationships with adults	12,22
Coping strategies	Active constructive strategies	11,21
	Passive hedonistic strategies	9,67

Adaptation resources	Focus and organisation	12,71
	Values and interests	12,55
	Positivity and agility	12,14
	External help	10,82

Reliability: Cronbach's alpha coefficients were calculated as an indication of the internal consistency of all scales and subscales. Compared to the original results, seven items from the domain Coping Strategies were removed. The final internal consistency coefficients have good values.

Table 3. Cronbach's alpha coefficients for all scales and subscales of the form for students

Domain/Subscale	Cronbach's Alpha	Item number
Stress symptoms	0,922	21
Restrictions	0,789	8
➔ *Pressure from external coercion*	0,763	6
➔ *Relationships with adults*	0,724	3
➔ *Active constructive strategies*	0,698	9
➔ *Passive hedonistic strategies*	0,594	8
➔ *Focus and organisation*	0,752	7
➔ *Values and interests*	0,700	5
➔ *Positivity and agility*	0,693	6
➔ *External help*	0,761	3
Personality potentials	0,898	15
Subjective wellbeing	0,869	6

Thus, the form for students remains in its final version with 109 items comprising a total of 7 domains, included 12 subscales and 4 additional markers (total pandemic impact, stressful events and physical and mental health).

5.2.2. Form for parents

Factor structure: In 5 of the 7 individual scales of the parent form, a Kaiser-Meyer-Olkin (KMO) test was first conducted to assess the adequacy of the collected sample, the results of which showed good to excellent values (coefficients ranging from 0.707 to 0.901). The results of Bartlett's tests of data sphericity also indicate that the data at each scale are appropriate for factor analysis. Exploratory factor analyses were then conducted using the principal components method, again using Varimax rotation of the internal correlations at an interpretation criterion of factor weights >0.30. In view of these results, as well as the internal consistency results of the identified scales, two subscales were formed for the "Life changes" scale, two subscales for the "Coping strategies" scale and three subscales for the "Adaptation Resources" scale:

Table 4. Results of Varimax rotation of the main components of the scales *"Life changes"*, *"Coping strategies"* and *"Adaptation Resources"* in the form for parents

Domain	Subscale	Percent variance explained
Life changes	Pressure from external coercion	17,08
	Relationships with adults	11,96
Coping Strategies	Health and leisure strategies	12,60
	Avoiding passive strategies	11,13
Adaptation Resources	Focus and organisation	23,16
	Positivity and Agility	12,68
	External help	11,43

Reliability: Cronbach's alpha coefficients were calculated as an indication of the internal consistency of all scales and subscales. Compared to the original results, eight items were removed from the "Coping Strategies" scale. The final internal consistency coefficients have good values.

Table 5. Cronbach's alpha coefficients for all scales and subscales of the parental form

Domain/Subscale	Cronbach's Alpha	Item number
Stress symptoms	0,930	21
Restrictions	0,883	8
➔ *Pressure from external coercion*	0,775	6
➔ *Relationships with adults*	0,642	3
➔ *Health and leisure strategies*	0,700	7
➔ *Avoiding hedonistic strategies*	0,616	8
➔ *Focus and organisation*	0,866	13
➔ *Positivity and agility*	0,704	5
➔ *External help*	0,822	3
Personality potentials	0,909	17
Subjective wellbeing	0,856	6

Thus, the parent form remains in its final version with 107 items comprising a total of 7 domains, 11 subscales and 4 additional markers (total pandemic impact, stressful events and physical and mental health).

5.2.3. Form for teachers

Factor structure: Factor analysis was conducted on only one of the five scales measuring psychological variables in the teacher form "Adaptation Resources" as the others were composed of too few items. Factor analysis, however, identified only two factors, the second of which has a very low total factor weight, and the items in it correlate only weakly with each other. Consequently, no subscales are distinguished in the teacher form, but three of the scales – "Online Teaching Stress", "Restrictions", and "Life changes" - are combined into one, entitled "Stress sources".

Reliability: Cronbach's alpha coefficients were calculated as an indication of the internal consistency of all scales. Relative to the original results, one item was

removed from the "Life changes" scale (and therefore from the total questionnaire). The final internal consistency coefficients have good values.

Table 6. Cronbach's alpha coefficients for all scales and subscales of the teacher form

Domain/Subscale	Cronbach's Alpha	Item number
Overall influence of the pandemic	0,917	9
Online teaching stress	0,897	13
Restrictions	0,864	8
Life changes	0,752	6
Stress sources	0,783	27
Adaptation resources	0,920	19

This leaves the form for teachers with 66 items making up a total of 6 domains, 6 scales and 12 additional markers (engaging topics).

In their final versions, the three forms of the methodology provide an opportunity to compare the opinions of the three groups. As far as teachers and parents are concerned, the identical scales are "Overall influence of the pandemic on the family", "Stressful events", "General health assessment", "Stress symptoms", "Life changes", "Pressure from external coercion", "Relationships with adults", "Adaptation Resources", "External help" and "Subjective Wellbeing". All three groups can be compared on the "Restrictions" scale.

5.2.4. Final structure of the instruments

Table 7. Student form

Scale	Part of question #	Items from question included	Total number of items for the scale
Overall influence of the pandemic	1	1	1
Stressful events	2	all	9

Physical health	3	1	1
Mental health	3	1	1
Stress symptoms	4	all	21
Restrictions	5	all	8
Pressure from external coercion	6	1,2,6,7,8,9	6
Relationships with adults	6	3,4,5	3
Active constructive strategies	7	7,8,10,11,14,16,17,19,24	9
Passive avoiding strategies	7	4,6,9,12,13,20,21,22	8
Purposefulness and organisation	8	6,7,10,11,13,15,16	7
Positivity and agility	8	1,2,3,4,5,14	6
Values and Interests	8	8,9,12,20,21	5
External help	8	17,18,19	3
Personality potentials	9	all, except 14 and 16	15
Subjective wellbeing	10	all	6

Table 8. Parent form

Scale	Part of question #	Items from question included	Total number of items for the scale
Overall influence of the pandemic	1	1	1
Stressful events	2	all	9
Physical health	3	1	1
Mental health	3	1	1

Stress symptoms	4	all	21
Restrictions	5	all	8
Pressure from external coercion	6	1,2,6,7,8,9	6
Relationships with adults	6	3,4,5	3
Healthy hedonistic strategies	7	10,11,14,15,16,18,24	7
Passive avoiding strategies	7	4,6,9,12,13,20,21,22	8
Purposefulness and organisation	8	6,7,8,11,12	5
Positivity and agility	8	1,2,3,4,5,9,10,13,14,15, 16,20,21	13
External help	8	17,18,19	3
Personality potentials	9	all, except 14 and 16	15
Subjective wellbeing	10	all	6

Table 9. Teacher form

Scale	**Part of question #**	**Items from question included**	**Total number of items for the scale**
Overall influence of the pandemic	1	all	9
Online teaching stress	2	all	13
Restrictions	3	all	7
Life changes	4	all, except 1	6

Stress Sources	2,3,4	all (items from Question 2 are reversed)	28
Attention engaging topics	5	all	separate
Adaptation resources	6	all	19

5.3. Results on methodology validation for the UK

5.3.1. Form for students

Factor structure: Prior to undertaking structural analyses to determine the components of each question (domain), two tests were run with the gathered data. Firstly, the Kaiser-Meyer-Olkin (KMO) test for assessing the adequacy of the collected sample reports excellent coefficients – ranging from 0,707 to 0,802 - which shows that the sample is adequate and subject to factor analysis. The results of Bartlett's tests for data sphericity also show that the data are suitable for factor analysis with p = 0.000 in all cases.

Exploratory factor analyses were then conducted using the principal components method, again using Varimax rotation of the internal correlations at an interpretation criterion of factor weights >0.30.

Considering the results of these, as well as the internal consistency results of the identified scales, two subscales were formed for the "Life Changes" scale, two subscales for the "Coping Strategies" scale and four subscales for the "Adaptation Resources" scale:

Table 10. Results of Varimax rotation of the main components of the scales *"Life Changes"*, *"Coping Strategies"* and *"Adaptation Resources"* in the form for students

Domain	Subscale	Percent variance explained
Life Changes	Pressure from external coercion	26,54
	Relationships with adults	18,77
Coping Strategies	Active Constructive Strategies	13,05
	Passive Avoiding Strategies	8,43
Adaptation Resources	Positivity and Agility	14,64
	Hobbies and Interests	11,48
	Social Support	10,38
	External Help	8,73

Reliability: Cronbach's alpha coefficients were calculated as an indication of the internal consistency of all scales and subscales. Compared to the original results, eleven items from the domain Coping Strategies and one item from domain Adaptation Resources were removed. The final internal consistency coefficients have good values.

Table 11. Cronbach's alpha coefficients for all scales and subscales of the students form

Domain/Subscale	Cronbach's Alpha	Item number
Stress Symptoms	0,904	21
Restrictions	0,694	8
Life changes		
Pressure from external coercion	0,681	6
Relationships with adults	0,589	3
Coping strategies		
Active constructive strategies	0,701	9

Passive avoiding strategies	0,641	4
Adaptation resources		
Positivity and agility	0,744	8
Hobbies and interests	0,710	6
Social support	0,563	3
External help	0,726	3
Personality potentials	0,845	15
Subjective wellbeing	0,877	6

Thus, the students form remains in its final version with 104 items comprising a total of 7 domains, 12 subscales and 4 additional markers (total pandemic impact, stressful events and physical and mental health).

5.3.2. Form for parents

Factor structure: Prior to undertaking structural analyses to determine the components of each question (domain), two tests were run with the gathered data. Firstly, the Kaiser-Meyer-Olkin (KMO) test for assessing the adequacy of the collected sample reports excellent coefficients – ranging from 0,707 to 0,802 - which shows that the sample is adequate and subject to factor analysis. The results of Bartlett's tests for data sphericity also show that the data are suitable for factor analysis with p = 0.000 in all cases.

Exploratory factor analyses were then conducted using the principal components method, again using Varimax rotation of the internal correlations at an interpretation criterion of factor weights >0.30. Considering the results of these, as well as the internal consistency results of the identified scales, two subscales were formed for the "Life Changes" scale, three subscales for the "Coping Strategies" scale and three subscales for the "Adaptation Resources" scale:

Table 12. Results of Varimax rotation of the main components of the scales *"Life Changes", "Coping Strategies"* and *"Adaptation Resources"* in parents form

Domain	**Subscale**	**Percent variance explained**

Life changes	Physical distance & limitations	38,20
	Pressure from Online Schooling	18,46
Coping strategies	Active Constructive Strategies	20,89
	Avoiding & Isolating Strategies	12,42
	Hedonistic Strategies	8,65
Adaptation resources	Purposefulness	18,38
	Agility	18,26
	External Help	9,36

Reliability: Cronbach's alpha coefficients were calculated as an indication of the internal consistency of all scales and subscales. Compared to the original results, one item from the domain Coping Strategies, one item from the domain Life Changes and nine items from the domain Adaptation resources were removed. The final internal consistency coefficients have good values.

Table 13. Cronbach's alpha coefficients for all scales and subscales of the parents form

Domain/Subscale	**Cronbach's Alpha**	**Item number**
Stress symptoms	0,945	21
Restrictions	0,875	8
Life changes		
Physical distance & limitations	0,802	5
Pressure from online schooling	0,672	3
Coping strategies		
Active constructive strategies	0,863	12
Avoiding & isolating strategies	0,702	7
Hedonistic strategies	0,556	4

Adaptation resources		
Purposefulness	0,796	4
Agility	0,782	6
External Help	0,581	2
Personality potentials	0,900	15
Subjective wellbeing	0,922	6

Thus, the parents form remains in its final version with 104 items comprising a total of 7 domains, 12 subscales and 4 additional markers (total pandemic impact, stressful events and physical and mental health).

5.3.3. Form for teachers

Factor structure: given that the structure of the original instrument in Bulgarian does not include individual factor domains from the teacher questionnaire, factor analyses were not conducted for the English version of the instrument.

Reliability: Cronbach's alpha coefficients were calculated as an indication of the internal consistency of all scales. Relative to the original results, no one item was removed from the questionnaire. The final internal consistency coefficients have good values.

Table 14. Cronbach's alpha coefficients for all scales and subscales of the teacher form

Domain/Subscale	Cronbach's Alpha	Item number
Overall influence of the pandemic	0,847	9
Online teaching stress	0,904	13
Restrictions	0,893	7
Life changes	0,805	8
Stress sources	0,917	28
Adaptation resources	0,916	19

Thus, the teachers form remains in its final version with 68 items comprising a total of 6 domains, 6 subscales and 12 additional markers.

Results show that according to the corresponding contents of the scales, comparisons could be made between students and parents on the following scales: Overall influence of the pandemic on the family, Stressful events, Physical health, Mental health, Stress Symptoms, Restrictions, Subjective wellbeing. Teachers' score cannot be compared to those of other groups.

5.3.4. Final structure of the instruments

Table 15. Student form

Scale	Part of question #	Items from question included	Total number of items for the scale
Overall influence of the pandemic	1	1	1
Stressful events	2	all	9
Physical health	3	1	1
Mental health	3	1	1
Stress symptoms	4	all	21
Restrictions	5	all	8
Pressure from external coercion	6	1,2,6,7,8,9	6
Relationships with adults	6	3,4,5	3
Active constructive strategies	7	1,5,6,8,10,11,16,17,24	9
Passive avoiding strategies	7	20,21,22,23	4
Positivity and agility	8	1,3,4,5,6,7,20,21	8
Hobbies and interests	8	8,9,10,11,12,13	6
Social support	8	14,15,16	3

External help	8	17,18,19	3
Personality potentials	9	all, except 14 and 16	15
Subjective wellbeing	10	all	6

Table 16. Parent form

Scale	Part of question #	Items from question included	Total number of items for the scale
Overall influence of the pandemic	1	1	1
Stressful events	2	all	9
Physical health	3	1	1
Mental health	3	1	1
Stress symptoms	4	all	21
Restrictions	5	all	8
Physical distance & limitations	6	1,3,4,6,7	5
Pressure from online schooling	6	2,8,9	3
Active constructive strategies	7	1,7,8,10,11,14,15,16,17,18,19,24	12
Avoiding & isolating strategies	7	4,17,19(R),20,21,22,23	7
Hedonistic strategies	7	2,6,9,10	4
Purposefulness	8	9,10,12,13	4
Agility	8	1,2,3,4,5,10	6
External help	8	17,18	2
Personality potentials	9	all, except 14 and 16	15

Subjective wellbeing	10	all	6

Table 17. Teacher form

Scale	Part of question #	Items from question included	Total number of items for the scale
Overall influence of the pandemic	1	all	9
Online teaching stress	2	all	13
Restrictions	3	all	7
Life changes	4	all	8
Stress sources	2,3,4	all (items from Question 2 are reversed)	28
Attention engaging topics	5	all	separate
Adaptation resources	6	all	19

5.4. Results on methodology validation for Spain

5.4.1. Form for students

Factor structure: Prior to undertaking structural analyses to determine the components of each question (domain) sets of two tests were run with the gathered data. Firstly, the Kaiser-Meyer-Olkin (KMO) test for assessing the adequacy of the collected sample reports excellent coefficients – ranging from 0,814 to 0,903 - which shows that the sample is adequate and subject to factor analysis. The results of Bartlett's tests for data sphericity also show that the data are suitable for factor analysis with p = 0.000 in all cases.

Exploratory factor analyses were then conducted using the principal components method, again using Varimax rotation of the internal correlations at an interpretation criterion of factor weights >0.30. It was used the same number of components as the identified in the original Bulgarian questionnaire.

Considering the results of these, as well as the internal consistency results of the identified scales, two subscales were formed for the "Life Changes" scale, two subscales for the "Coping Strategies" scale and three subscales for the "Adaptation Resources" scale:

Table 18. Results of Varimax rotation of the main components of the scales *"Life Changes"*, *"Coping Strategies"*, *"Adaptation Resources"* in the form for students

Domain	Subscale	Percent variance explained
Life changes	Pressure from external coercion	45,64
	Relationships with adults	27,19
Coping strategies	Active Constructive Strategies	37,42
	Passive Hedonistic Strategies	14,11
Adaptation resources	Positivity and Agility	38,57
	Hobbies and Interests	19,27
	External Help	11,27

Reliability: Cronbach's alpha coefficients were calculated as an indication of the internal consistency of all scales. Relative to the original results, six items were removed from the domain Coping Strategies, five items from the domain Adaptation Resources and two items from the domain Personality Potentials. The final internal consistency coefficients have good values.

Table 19. Cronbach's alpha coefficients for all scales and subscales of the students form

Domain/Subscale	Cronbach's Alpha	Item number

Stress symptoms	0,980	21
Restrictions	0,945	8
Life changes		
Pressure from external coercion	0,908	5
Relationships with adults	0,787	3
Coping strategies		
Active constructive strategies	0,938	10
Passive hedonistic strategies	0,731	7
Adaptation resources		
Positivity and agility	0,987	8
Hobbies and interests	0,807	5
External help	0,809	3
Personality potentials	0,986	15
Subjective wellbeing	0,951	6

Thus, the students form remains in its final version with 109 items comprising a total of 7 domains, 11 scales and 4 additional markers (total pandemic impact, stressful events and physical and mental health).

5.4.2. Form for parents

Factor structure: Prior to undertaking structural analyses to determine the components of each question (domain) sets of two tests were run with the gathered data. Firstly, the Kaiser-Meyer-Olkin (KMO) tests for assessing the adequacy of the collected sample report excellent coefficients – ranging from 0,723 to 0,782 - which shows that the sample is adequate and subject to factor analysis. The results of Bartlett's tests for data sphericity also show that the data are suitable for factor analysis with p = 0.000 in all cases.

Exploratory factor analyses were then conducted using the principal components method, again using Varimax rotation of the internal correlations at an interpretation criterion of factor weights >0.30. Considering the results of these,

as well as the internal consistency results of the identified scales, one subscale was formed for the "Life Changes" scale, two subscales for the "Coping Strategies" scale and two subscales for the "Adaptation Resources" scale:

Table 20. Results of Varimax rotation of the main components of the scales *"Life Changes", "Coping Strategies"* and *"Adaptation Resources"* in the form for parents

Domain	Subscale	Percent variance explained
Life changes	Pressure from external coercion	39,24
Coping strategies	Active constructive strategies	29,46
	Passive avoiding strategies	14,98
Adaptation resources	Positivity and agility	35,78
	External help	9,76

Reliability: Cronbach's alpha coefficients were calculated as an indication of the internal consistency of all scales and subscales. Relative to the original results, one item from the domain Life Changes, three items from the domain Coping Strategies, ten items from the domain Adaptation Resources and two items from the domain Personality Potentials were removed. The final internal consistency coefficients have good values.

Table 21. Cronbach's alpha coefficients for all scales and subscales of the parents form

Domain/Subscale	Cronbach's Alpha	Item number
Stress Symptoms	0,954	21
Restrictions	0,942	8
Pressure from external coercion	0,875	6
Coping Strategies		
Active constructive strategies	0,901	13

Passive avoiding strategies	0,778	8
Adaptation resources		
Positivity and agility	0,875	8
External help	0,784	3
Personality potentials	0,968	15
Subjective wellbeing	0,929	6

Thus, the parents form remains in its final version with 100 items comprising a total of 7 domains, 9 scales and 4 additional markers (total pandemic impact, stressful events and physical and mental health).

5.4.3. Form for teachers

Factor structure: given that the structure of the original instrument in Bulgarian does not include individual factor domains from the teacher questionnaire, factor analyses were not conducted for the Spanish version of the instrument.

Reliability: Cronbach's alpha coefficients were calculated as an indication of the internal consistency of all scales. Relative to the original results, no one item was removed from the questionnaire. The final internal consistency coefficients have good values.

Table 22. Cronbach's alpha coefficients for all scales and subscales of the teachers form

Domain/Subscale	Cronbach's Alpha	Item number
Overall influence of the pandemic	0,950	9
Online teaching stress	0,849	13
Restrictions	0,924	7
Life changes	0,895	8
Stress sources	0,913	20
Adaptation resources	0,871	19

Thus, the teachers form remains in its final version with 68 items comprising a total of 6 domains, 6 scales and 12 additional markers.

Results show that according to the corresponding contents of the scales and subscales, comparisons could be made between students and parents on the following factors: Overall influence of the pandemic on the family, Stressful events, Physical health, Mental health , Stress Symptoms, Restrictions, Active Constructive Strategies, Positivity and Agility, External help, Personality potentials, Subjective wellbeing. Teachers' scores cannot be compared to those of other groups.

5.4.4. Final structure of the instruments

Table 23. Student form

Scale	Part of question #	Items from question included	Total number of items for the scale
Overall influence of the pandemic	1	1	1
Stressful events	2	all	9
Physical health	3	1	1
Mental health	3	1	1
Stress symptoms	4	all	21
Restrictions	5	all	8
Pressure from external coercion	6	1,2,6,7,8,9	6
Relationships with adults	6	3,4,5	3
Active constructive strategies	7	1,5,7,8,10,11,14,15,16,17,18,19,24	13
Passive hedonistic strategies	7	2,3,4,6,9	5
Positivity and agility	8	1,2,3,4,5,6,7,8	8
Hobbies and interests	8	9,10,11,12,13	5

External help	8	17,18,19	3
Personality potentials	9	all, except 14 and 16	15
Subjective wellbeing	10	all	6

Table 24. Parent form

Scale	Part of question #	Items from question included	Total number of items for the scale
Overall influence of the pandemic	1	1	1
Stressful events	2	all	9
Physical health	3	1	1
Mental health	3	1	1
Stress symptoms	4	all	21
Restrictions	5	all	8
Pressure from external coercion	6	1,2,4,6,7,9	6
Active constructive strategies	7	1,5,7,8,10,11,14,15,16,17,18,19,24	13
Passive avoiding strategies	7	4,6,9,12,13,21,22,23	8
Positivity and agility	8	1,2,3,4,5,6,7,8	8
External help	8	17,18,19	3
Personality potentials	9	all, except 14 and 16	15
Subjective wellbeing	10	all	6

Table 25. Teacher form

Scale	Part of question #	Items from question included	Total number of items for the scale
Overall influence of the pandemic	1	all	9
Online teaching stress	2	all	13
Restrictions	3	all	7
Life changes	4	all	8
Stress sources	2,3,4	items 1,2,3,4,8,9,10 and 12 from question №2 (reversed), all items from question №3 and items 1,3,6,7, and 8 from question №4	20
Attention engaging topics	5	all	separate
Adaptation resources	6	all	19

5.5. Results on methodology validation for Italy

5.5.1. Form for students

Factor structure: Prior to undertaking structural analyses to determine the components of each question (domain), two tests were run with the gathered data. Firstly, the Kaiser-Meyer-Olkin (KMO) test for assessing the adequacy of the collected sample reports excellent coefficients – ranging from 0,707 to 0,802 - which shows that the sample is adequate and subject to factor analysis. The results of Bartlett's tests for data sphericity also show that the data are suitable for factor analysis with p = 0.000 in all cases.

Exploratory factor analyses were then conducted using the principal components method, again using Varimax rotation of the internal correlations at an interpretation criterion of factor weights >0.30. It was used the same number of components as the identified in the original Bulgarian questionnaire.

Considering the results of these, as well as the internal consistency results of the identified scales, two subscales were formed for the "Life Changes" scale, two subscales for the "Coping Strategies" scale and four subscales for the "Adaptation Resources" scale:

Table 26. Results of Varimax rotation of the main components of the scales *"Life Changes", "Coping Strategies"* and *"Adaptation Resources"* in the form for students

Domain	Subscale	Percent variance explained
Life changes	Pressure from external coercion	24,17
	Relationships with adults	20,02
Coping strategies	Active constructive strategies	15,05
	Passive avoiding strategies	23,68
Adaptation resources	Positivity and agility	16,45
	Purposefulness	13,94
	Hobbies	12,62
	Social support	7,16

Reliability: Cronbach's alpha coefficients were calculated as an indication of the internal consistency of all scales and subscales. Relative to the original results, one item from the domain Life Changes, seven items from the domain Coping Strategies and two items from the domain Adaptation Resources were removed. The final internal consistency coefficients have good values.

Table 27. Cronbach's alpha coefficients for all scales and subscales of the students form

Domain/Subscale	Cronbach's Alpha	Item number

Stress symptoms	0,897	21
Restrictions	0,857	8
Life changes		
Pressure from external coercion	0,714	5
Relationships with adults	0,608	3
Coping strategies		
Active constructive strategies	0,683	10
Passive avoiding strategies	0,535	7
Adaptation resources		
Positivity and agility	0,807	8
Purposefulness	0,710	5
Hobbies	0,534	3
Social support	0,699	3
Personality potentials	0,854	15
Subjective wellbeing	0,892	6

Thus, the students form remains in its final version with 106 items comprising seven scales/domains, 12 subscales and 4 additional markers (total pandemic impact, stressful events and physical and mental health).

5.5.2. Form for parents

Factor structure: Prior to undertaking structural analyses to determine the components of each question (domain), two tests were run with the gathered data. Firstly, the Kaiser-Meyer-Olkin (KMO) test for assessing the adequacy of the collected sample reports excellent coefficients. With regards to questions 7 and 8 the KMO test showed that the collected sample is not adequate for conducting a factor analysis. Thus, a factor analysis was run only for the answers on question 6.

Exploratory factor analyses were then conducted using the principal components method, again using Varimax rotation of the internal correlations at

an interpretation criterion of factor weights >0.30. It was used the same number of components as the identified in the original Bulgarian questionnaire.

Considering the results of these, as well as the internal consistency results of the identified scales, two subscales were formed for the "Life Changes" scale:

Table 28. Results of Varimax rotation of the main components of the scales *"Life Changes"* in the form for parents

Domain	Subscale	Percent variance explained
Life changes	Pressure from imposed measures	37,65
	Home isolation	22,11

Reliability: Cronbach's alpha coefficients were calculated as an indication of the internal consistency of all scales and subscales. Relative to the original results, one item from the domain Life Changes, four items from the domain Adaptation Resources and two items from the domain Personality Potentials were removed. The final internal consistency coefficients have good values.

Table 29. Cronbach's alpha coefficients for all scales and subscales of the parents form

Domain/Subscale	Cronbach's Alpha	Item number
Stress symptoms	0,922	21
Restrictions	0,912	8
Life changes		
Pressure from imposed measures	0,774	4
Home isolation	0.772	3
Adaptation resources	0,874	17
Personality potentials	0,925	15
Subjective wellbeing	0,901	6

Thus, the parents form remains in its final version with 86 items comprising a total of 6 domains, 7 scales and 4 additional markers (total pandemic impact, stressful events and physical and mental health).

5.5.3 Form for teachers

Factor structure: given that the structure of the original instrument in Bulgarian does not include individual factor domains from the teacher questionnaire, factor analyses were not conducted for the Italian version of the instrument.

Reliability: Cronbach's alpha coefficients were calculated as an indication of the internal consistency of all scales/domains. Relative to the original results, two items from the domain Adaptation Resources and the whole domain Life Changes (because of the inconsistence with the measure scale) were removed. The final internal consistency coefficients have good values.

Table 30. Cronbach's alpha coefficients for all scales and subscales of the teachers form

Domain/Subscale	Cronbach's Alpha	Item number
Overall influence of the pandemic	0,862	19
Online teaching stress	0,848	13
Restrictions	0,858	7
Adaptation resources	0,838	17

Thus, the teachers form remains in its final version with 58 items comprising a total of 5 domains, 4 scales and 12 additional markers.

Results show that according to the corresponding contents of the scales, comparisons could be made between students and parents on the following factors: Overall influence of the pandemic on the family, Stressful events, Physical health, Mental health, Stress Symptoms, Restrictions, Personality Potentials, Subjective wellbeing.

Parents' and teachers' results can be compared on the scale Adaptation Resources.

5.5.4. Final structure of the instruments

Table 31. Student Form

Scale	Part of question #	Items from question included	Total number of items for the scale
Overall influence of the pandemic	1	1	1
Stressful events	2	all	9
Physical health	3	1	1
Mental health	3	1	1
Stress symptoms	4	all	21
Restrictions	5	all	8
Pressure from external coercion	6	1,2,6,7,9	5
Relationships with adults	6	3,4,5	3
Active constructive strategies	7	1,5,7,8,10,11,14,16, 17,24	10
Passive avoiding strategies	7	2,4,13,20,21,22,23	7
Positivity and agility	8	1,2,3,4,5,6,7,8	8
Purposefulness	8	6,11,13,16,20	5
Hobbies	8	9,10,12	3
Social support	8	14,15,16	3
Personality potentials	9	all, except 14 and 16	15
Subjective wellbeing	10	all	6

Table 32. Parent Form

Scale	Part of question #	Items from question included	Total number of items for the scale

Overall influence of the pandemic	1	1	1
Stressful events	2	all	9
Physical health	3	1	1
Mental health	3	1	1
Stress symptoms	4	all	21
Restrictions	5	all	8
Pressure from imposed measures	6	1,6,7,9	4
Home isolation	6	1,3,4	3
Adaptation resources	8	1,2,3,5,6,7,8,9,10,11,12,13,14,15,16,19 and 20	17
Personality potentials	9	all, except 14 and 16	15
Subjective wellbeing	10	all	6

Table 33. Teacher Form

Scale	Part of question #	Items from question included	Total number of items for the scale
Overall influence of the pandemic	1	all	9
Online teaching stress	2	all	13
Restrictions	3	all	7
Attention engaging topics	5	all	separate
Adaptation resources	6	all, except 11 and 17	17

5.6. Discussion

The construction of the Well-Be adolescent stress and well-being survey methodology in a pandemic environment proceeded in several stages: the compilation of a large database of emotional status items for young people (age 14-19) and associated factors during the pandemic, testing it with a focus group and obtaining feedback on the questions and instructions, applying an edited version to larger samples of respondents in Bulgaria, the UK, Spain and Italy, and conducting analyses to determine the factor structure and reliability of the instruments. These analyses show excellent internal consistency of the scales and subscales appearing in the final version of the forms. They provide detailed information from three sources about the overall impact of the pandemic on students, their physical and mental health assessments, sources and symptoms of stress, coping strategies, personal potentials, and resources for adaptation and maintenance of subjective well-being. The methodology may be useful in studies on this topic to diagnose, elicit adolescents' support needs, and outline guidelines in building their mental resilience.

6. Findings from the study on the impact of the pandemic on students - a summary comparative analysis for the consortium

About half of the students and parents rated the **impact of the pandemic on young people** as very negative or negative. This is also shared by teachers, who believe that the negative effects of the pandemic are manifested in a decline in motivation to learn, activity in the learning process and their general activity, coping with learning material and academic performance, communication and self-expression skills, sense of well-being, and mood fluctuations. On average, 1/4 of participants rated children's mental health as impaired.

In terms of adolescents' sense of **subjective well-being**, positive evaluations predominate.

The most pronounced **symptoms of stress**, according to students and parents, are in the emotional and intellectual spheres. Frequently or consistently, the respondents observed tension, distraction, laziness and reluctance to act, irritation, learning problems, and fatigue. Respondents from the UK and Spain also reported physiological symptoms related to sleep and appetite disturbances.

According to young people, the **most serious sources of stress** for them are:

- ✓ loss of living contacts with people and meetings with friends,
- ✓ entertainments and favourite food and drinks from restaurants outside,
- ✓ a clear vision of the future and freedom of action.

According to teachers, sources of stress for students during the pandemic period in mostly in an e-learning environment are as follows:

- ✓ monotony,
- ✓ social isolation,
- ✓ lack of physical activity,
- ✓ maintaining continuous/permanent concentration,
- ✓ the need for self-organisation and self-discipline,
- ✓ need for additional support for learning.

All participants agree that the **restrictions** imposed by the pandemic which affected students entirely negatively or rather negatively were:

- ✓ limitations on meeting friends,
- ✓ limited live contacts,
- ✓ limitations on sports activities,
- ✓ lack of freedom of action,
- ✓ not going to school.

According to all three groups of respondents, the following **lifestyle changes** have had a negative impact on children:

- ✓ time spent in front of a computer,
- ✓ pressure from prohibitions,
- ✓ physical distancing,
- ✓ wearing masks,
- ✓ home isolation,
- ✓ limited personal space at home,
- ✓ physical distance,
- ✓ fears and insecurities of adults,
- ✓ constant presence of parents.

Regarding **coping strategies** to deal with stress during the pandemic, students indicated that the following activities were consistently and frequently practiced: watching TV/movies/podcasts/TikTok, "chatting" with friends, surfing the Internet, listening to music.

Rarely or not practiced at all are the following: meditation, prayer, yoga, experimenting with forbidden things, joining training courses and seminars.

To deal with the pandemic situation **and resources for adapting** and maintaining well-being, the most valued by students and parents were those related to social support and the personal atitude: family support, the ability to find things that are interesting, own will/persistence and own sense of humor, learning and ambitions to develop, the pursuit of a clear goal and plan for the future, optimism and faith in the future, own ability to quickly get used to changes, own ability to quickly overcome a bad mood, insult, anger and hobbies.
The self-description of the students tells us that their **personal potential** is rather positive, being optimistic about the future. According to their self-assessments, the following characteristics fully and largely apply to them: diversity in life is important, I feel that what I do makes sense, I deal with the important problems I encounter, I feel confident that I will succeed in life and I work consistently to achieve my goals and believing that better things are coming soon.

This is shared by parents and teachers, but they feel that participation in courses and group activities that they choose, art activities and work on school projects, contacts with teachers, psychologists, doctors, Physical activities were resources that do not apply to their child.

Over 40% of teachers felt that the topics of environmental and economic issues, as well as art remained weak in engaging the interest and attention of students.

The data from the interviews conducted with students, parents and teachers also show great similarity between the participating countries and confirm the results of the questionnaire survey.
In the students'interviews, as a positive aspect, they highlight being more with the family as a positive factor shared by most of the students and as negative highlights the fact of seeing less friends/other relatives, boredom when not leaving the house and not doing their usual activities. Furthermore, all students mention the negative effects caused by isolation: not seeing each other with friends (an aspect that is repeated), distance classes are complicated and less physical exercise.

The negative effect of isolation is particularly evident on the emotional level and the ability to plan. Children describe themselves as more depressed, anxious and agitated than before the pandemic. Uncertainty and insecurity block any ability to imagine the future: attention is focused on the uncertainty of the present.
However, a remarkable idea refers to the fact that students, despite the bad moments they have experienced, want to remember everything positive that they have experienced: the good moments with the family, the free time to do what they wanted, etc. This shows that there is an intention to minimise the possible negative effects to focus on those which have been positive, always (as we have seen before) basing their experience on personal relationships with others.

In the interviews, in general, parents' comments are related to emotional/ personal changes that affected their children. The loss of personal relationships/social skills is one of the main ideas expressed. Parents say that children feel more alone and have missed their friends a lot/have lost social skills

and this is one of the most important children' needs expressed by parents: to recover social activities/see friends-relatives. We have to add to children' needs a psychological support/know how to manage stress/fear.

Secondly, although parents expressed some positive aspect of distance learning (they have to organise themselves better and learn to follow schedules, have gained autonomy/develop patience, have everything available in one click), we see that apart from the idea of slowing down the learning rhythm, the idea of not having direct contact between teachers and students/ worsening of personal relationships is repeated again.

A number of parents have highlighted the strong emotional distress felt by their children during those months, with a considerable increase in behaviours such as poor concentration, boredom, mood swings, frustration, dependency and need for help, melancholy and feelings of loneliness.

Although they agree that distance learning was an opportunity to implement technologies and increase their children's digital skills, unfavourable adjectives seem to predominate, seeing remote learning as an unpleasant, demotivating, useless, ineffective, and ultimately ugly experience.

As has happened with the students, most parents, despite all the negative experiences, focus on remembering the positive of it the pandemic situation: have learned to get the good out of the Covid-19 situation, have learned how important it is to appreciate everything in life and say every day I love you at least once. Confinement has helped us to realise how much we love each other.

The comments of the teachers from the interviews are more critical and pessimistic towards the other participants, which also applies to the scores on comparable variables, where there is a tendency for teachers to give more extreme values. Although mediated through the online environment, teachers monitor students' performance, involvement and coping in specific work tasks. They are explicit in their assessment of the pandemic's destructive effects on their social and emotional skills, on motivational attitudes and learning habits, and more generally on the existential and moral aspects of schooling and the education system. As a negative aspect, they also focus on parental passivity and lack of communication with them. The positives for all participants in the educational and educational process are clearly outlined in two directions - development of adaptability to changes and digital innovations and attention, care for health - one's own and other people's. In this sense, teachers' evaluations are more rational than emotional. Teachers' suggestions for necessary changes in the education system are concrete, constructive and targeted. Teachers' suggestions are focused on the educational system (organisation /regulations) and the emotional support (for students and teachers): motivation, participation,

communication, remove the residual fear, make a positive reading of the experience and re-establish personal relationships (although students have used videocalls and use digital learning, the personal contact is an important point for teachers).

Finally yet importantly, there was a lack of specialised figures, such as school psychologists, who could have supported students, teachers and school staff and families in general at such a critical time, as well as a lack of psychological preparation in teachers who felt they did not have adequate tools to help and support their students.

6.1. Overall impact of the pandemic

Table 34. Means of students on the scale *Overall Influence of the pandemic* based on their *country of origin* (N=846)

Country	Mean	SD
Bulgaria	2,67	0,773
Spain	2,46	0,721
UK	**2,39**	**0,692**
Italy	2,61	0,810

Bulgarian students evaluate the overall influence of the pandemic more positively than do students from Spain and the UK. Italian students evaluate this influence more positively than UK students. No other significant group differences are found.

Table 35. Means of students on the scale *Physical health* based on their *country of origin* (N=846)

Country	Mean	SD
Bulgaria	3,82	1,108
Spain	4,16	0,741
UK	2,88	1,052

Italy	3,52	1,002

Students from Spain rate their physical health most positively in comparison to the rest of the students. They are followed by Bulgarian students, then Italian students. Students from UK give the lowest evaluation of their physical health.

Table 36. Means of students on the scale *Mental health* based on their *country of origin* (N=846)

Country	Mean	SD
Bulgaria	2,98	1,290
Spain	3,96	0,929
UK	1,64	0,826
Italy	2,95	1,192

No significant difference is found only between Italian and Bulgarian students – their evaluation of their mental health is equal; it is also higher than UK students' evaluation and lower than the evaluation Spanish students give of their mental health.

6.2. Stress in children (symptoms of stress, sources, and strategies)

Table 37. Means of students on the scale *Stress symptoms* based on their *country of origin* (N=846)

Country	Mean	SD
Bulgaria	57,39	16,189
Spain	47,86	15,849
UK	66,87	13,908
Italy	58,51	14,002

Again, only Bulgarian and Italian students report experiencing the same amount of stress symptoms during the pandemic. Spanish students experience less stress

symptoms than all other students and UK students experience more stress symptoms than the other three samples.

Table 38. Means of students on the scale *Restrictions* based on their *country of origin* (N=846)

Country	Mean	SD
Bulgaria	21,40	7,313
Spain	15,08	3,890
UK	18,98	3,849
Italy	20,24	7,078

Bulgarian and Italian students evaluate the effect of restrictions more positively than do students from Spain and the UK. Spanish students also evaluate these effects more negatively than students from the UK.

Table 39. Means of students on the scale *Pressure from external coercion* based on their *country of origin* (N=691)

Country	Mean	SD
Bulgaria	13,92	4,180
Spain	12,12	3,192
UK	15,33	3,606

Students from the UK evaluate the effects of pressure from external coercion most positively in comparison to the rest of the students, followed by students from Bulgaria. Spanish students evaluate these effects most negatively. The scale does not exist in the Italian form of the questionnaire, so no comparison could be made with Italian students.

Table 40. Means of students on the scale *Relationships with adults* based on their *country of origin* (N=846)

Country	Mean	SD
Bulgaria	6,99	2,160
Spain	7,37	1,854
UK	6,54	1,753
Italy	7,88	2,400

Students in Italy and Spain evaluate the effects of their relationships with adults more positively than do students from Bulgaria and the UK.

These differences can be explained on the one hand by socio-psychological characteristics in the national cultures of the participating countries, but also by situational specificities in the periods of the study.

6.3. *Adaptation resources*

Table 41. Statistically significant differences between students' answers on *Positivity and agility* (N=326)

	Spain		Italy		t-value	p
	Mean	SD	Mean	SD		
Positivity and agility	24,08	3,956	19,20	6,325	8,256	0,000

The scale Positivity and Agility is identified only in the Spanish and Italian forms of the questionnaire, so a comparison is made only between these two countries. The T-test for independent sample show there is a significant difference – Spanish students report positivity and agility to have helped them more in comparison to Italian students.

Table 42. Statistically significant differences between students' answers on *Social support* (N=414)

	UK		Italy		t-value	p
	Mean	SD	Mean	SD		

Social Support	6,69	2,114	8,30	2,557	-6,917	0,000

The scale Social Support is identified only in the UK and Italian forms of the questionnaire, so a comparison is made only between these two countries. The T-test for independent sample show there is a significant difference – Italian students report social support to have helped them more in comparison to students from the UK.

Table 43. Means of students on the scale *External help* based on their *country of origin* (N=691)

Country	Mean	SD
Bulgaria	2,44	1,865
Spain	1,09	2,055
UK	2,75	2,195

Students from Spain report that external help has been less helpful for them in comparison to students from Bulgaria and the UK. The scale does not exist in the Italian form of the questionnaire, so no comparison could be made with Italian students.

Table 44. Means of students on the scale *Personality potentials* based on their *country of origin* (N=846)

Country	Mean	SD
Bulgaria	50,61	11,894
Spain	53,77	12,421
UK	41,12	9,322
Italy	48,47	10,344

Spanish students report having the most personality potentials in comparison to other countries, while UK students report the least. Bulgarian and Italian students score equally on this scale, placing them in the middle of all countries.

Table 45. Means of students on the scale *Subjective wellbeing* based on their *country of origin* (N=846)

Country	Mean	SD
Bulgaria	17,29	5,644
Spain	18,08	4,510
UK	13,10	4,806
Italy	15,89	5,652

Students from the UK report the lowest levels of subjective wellbeing, followed by somewhat higher scores among Italian students. Bulgarian and Spanish students have equal scores, higher than the rest of the students.

6.4. Vulnerable groups

The comparative analysis between the participating countries shows complete consistency regarding the identified vulnerable groups of young people, namely:

- **Girls** who report more symptoms of stress, poorer physical and mental health, lower sense of subjective well-being and use more passive coping strategies than boys.
- **Older students** (18-19 years old), who have a more negative assessment of the impact of the imposed restrictions, changes in lifestyle and the pressure of external coercion compared to younger ones.
- Children **living with one parent or without parents** who experience more symptoms of stress.
- Children with **siblings** who share a stronger negative effect of the pandemic than adolescents who are the only children in the family.

- Students who experienced a **decline in performance** reported poorer mental health, significantly more symptoms of stress, more unsatisfactory relationships with adults, a lower sense of mental well-being, and more difficulty tolerating restrictions and lifestyle changes, compared to students who increased their performance.

- Students who feel that they **did not improve their knowledge** during the pandemic, who report poorer physical and mental health, significantly more symptoms of stress and a lower level of subjective well-being compared to those who perceive their knowledge as improved.

- Students who have experienced **more stressful events** report more intense symptoms of stress and a more negative overall impact of the pandemic on their family, deteriorating their physical and mental health, and a lower sense of subjective well-being.

6.5. Guidelines on student support measures

Based on all the data and analyses, we came to the conclusion that support measures should integrate training, communication and administrative activities addressing the following stakeholders and actors:

I. Training activitites

To students

Training measures focusing on the development of:

- ✓ Self-knowledge in order to stimulate confidence in children's personal potential.
- ✓ Critical thinking, social engagement and self-discipline in adolescents in order to build a more active personal and civic position.
- ✓ Stress resilience - presenting the benefits of active, problem-solving and meaning-related coping strategies and relaxation techniques to encourage the application of a wider range of stress management strategies.
- ✓ Internal adaptation resources with priority on goal-setting skills, planning and organizing, positivity and flexibility, techniques to maintain concentration to increase confidence in them and their application.

- ✓ Communication skills to improve interactions both with each other and with older adults - parents and teachers; giving and receiving social support.
- ✓ Self-regulated learning skills in order to maintain motivation to learn and to cope autonomously with learning tasks.

To Parents:

Training measures focusing on the development of:

- ✓ Improving parents' skills for meaningful communication with children in isolation and for improving the home climate (school for parents or other socially engaging activities, training materials).
- ✓ Encouraging open communication between students and parents, as well as teachers and parents, so as to attract attention to experience of stress and anxiety and better explain behavioural concerns.
- ✓ Recognising the significance of independence and distancing of children during teenage years.
- ✓ Raise awareness among parents about children mental health and give them tools and resources to help them.

To Teachers

Training measures focusing on the development of:

- ✓ The degree of empathy that helps teachers to display professionally useful behaviours.
- ✓ Strengthening the basic emotional skills of students and emotional management as a vehicle for the prevention of emotional/mental problems.
- ✓ Learning to understand and communicate emotions in a face to face and digital context for teachers and students.
- ✓ Offer teachers resources and tools for transforming its training programs and its teaching profession itself.
- ✓ Enhancing teachers' digital communication skills in order to improve interaction with students in the context of on-line learning.

II. Communication measures:

- ✓ Applying a variety of approaches and channels to correctly and accurately inform students about the effects of the crisis - health, social, economic; the importance of prevention and healthy lifestyles in today's ongoing crisis. Careful consideration of the messages

conveyed by relevant adults in order to minimise uncertainty and flight into illusion.

- ✓ Expanding channels and forms of communication, redefining roles and responsibilities to improve interaction between parents and teachers.
- ✓ Enhancing communication between teachers, parents and stress prevention and crisis management professionals to raise awareness and sensitivity about children's risk factors and timely identification of the vulnerable among them.
- ✓ Promotion of the role of school psychologists with emphasis on proactive prevention.
- ✓ Promote multi-stakeholder dialogue between parents, educators and the children themselves.

III. Administrative changes in traditional educational approaches aimed at:

- ✓ Personalised learning - identifying the individual needs of students, their skills and interests in order to preserve and nurture their inner motivation for learning and development; Develop focused plans to ensure that adequate learning accompaniment is provided in more personalised systems.
- ✓ Application of flexible models of cooperative learning as a prerequisite for increasing student engagement, social interaction and shared learning.
- ✓ Encouraging work on school projects, participation in extracurricular activities, courses and interest groups, including arts and spiritual practices (such as yoga, mindfulness) in order to improve the attractiveness and quality of school life.
- ✓ Prevention of the processes of victimisation and medicalisation of adolescents (by activating the interaction with teachers and psychologists, setting and maintaining clear boundaries in relationships and principles of interaction; refining the messages of adults with a focus on children's strengths and positive attitudes to new challenges, stimulating the processes of self-reflection and understanding the benefits and harms of excessive protection and care of adolescents).
- ✓ Changes in the curricula in order to adapt them to the form of distance learning and the current needs of all stakeholders and participants in the learning process; planning synchronous learning in e-learning and hybrid learning as an alternative for periods of high pandemic risk.

- ✓ Support teachers with teaching training resources using digital tools, as well as encourage access and use of digital collaborative platforms that allow teachers to share their resources and give and receive feedback from their peers.
- ✓ Offer resources and tools to strengthen resilience and support to deal with psychological and social damage.
- ✓ Review the focus of the curriculum and prioritise learning objectives taking into account limitations, while ensuring a good balance between academic learning, social-emotional learning and psychological health.

7. Conclusions

The results of both parts of the research (quantitative and qualitative methods) in 4 countries involved confirm the initial hypothesis that the pandemic, the accompanying measures to limit it and the changes in lifestyle have an impact on the mental state of adolescents by intensifying the experience of stress and weakening the sense of well-being.

Students recognise the negative impact of the pandemic, but try to positivise it by highlighting the benefits of: saving effort and stress in connection with the usual daily engagement of traditional school life; the benefits they find in online testing; the pleasure of caring at home and meeting their household needs. This is in line with their dominant self-preservation attitudes, focus on entertainment, distancing themselves from important life topics and the preference for passive strategies to deal with stress and trouble, which poses a **risk for their adaptation in the long run.**

Parents and teachers are much more negative about the overall impact of the pandemic, restrictive measures and lifestyle changes, which is a prerequisite for the risk of **victimisation and/or medicalisation of children**, especially since they are negatively affected by fears and insecurities of adults. At the same time, probably as a defensive reaction, students show relatively low interest in the development of the pandemic, on current social, environmental and economic issues, which may lead to **unjustified underestimation of the current and long-term consequences of the global crisis**.

The presence of stress symptoms is observed in students and the most pronounced are the emotional, behavioural and cognitive symptoms of stress. Sources of stress for them are restrictions and changes in lifestyle, as well as relationships with adults. According to teachers, the most negative consequences of distance learning are home isolation and monotony. There are some discrepancies in the assessments of the three groups on these issues, which reflects **communication deficits** and is indicative of the need to improve communication between students, teachers and parents.

Passive coping strategies with an emphasis on comfort zone and satisfying hedonic needs are prioritized by students. In the short term, these types of

activities have the effect of emotional relief, distancing from problems and temporarily postponing their solution, but in the long term - **they question the ability to adapt quickly and adequately to changes**. On the other hand, the use of active constructive strategies positively influences adolescents' physical and mental health and sense of subjective well-being.

Higher assessments of students' subjective well-being and mental health also resonate with the active use of internal resources, determined in manifestations of purposefulness and organisation, positivity and flexibility, interesting and meaningful activities. Among the resources for adaptation, social support definitely dominates - relationships with friends and family. **The coping potential of external resources for adaptation has been neglected** - work on school projects, interaction with teachers and psychologists, participation in schools, courses and interest groups, spiritual practices.

The results of this analysis make it possible to identify the following risks in the development of adolescents:

- Deepening the experience of stress under the impact of the pandemic and in particular prolonged online learning.
- Disadaptation in the long term and/or remaining passive to the evolution of the pandemic situation and its global implications.
- Imbalance in resources used and efforts to adapt to constantly changing living conditions.
- Medicalisation of the young generation and modelling of unhealthy habits and lifestyles.
- Deepening social crisis, regression in social skills and development of personal potential.

Minimising these risks requires intervention in the broad spectrum of psychological and pedagogical support to develop adolescents' mental resilience and improve their social interaction, actively involving and synchronising the efforts of all stakeholders in the process.

The analyses described in this handbook and the results of the procedure to develop and validate an instrument to study the impact of a pandemic crisis on the current mental state of secondary school students attest to the existence of a new and reliable research instrument. It can be applied both in its full version for larger studies and as individual modules for targeted studies and analyses, according to the tasks and ideas of the specific researcher. In this sense, an added value of the presented tool is the possibility to use it in a broader context, beyond the specific pandemic situation, as a tool to investigate the mental state and experiences of students under unusual events and circumstances of trials of different nature.

8. Appendices

8.1. Questionnaire for students BG

8.2. Questionnaire for parents BG

8.3. Questionnaire for teachers BG

8.4. Questionnaire for students EN

8.5. Questionnaire for parents EN

8.6. Questionnaire for teachers EN

8.7. Questionnaire for students ES

8.8. Questionnaire for parents ES

8.9. Questionnaire for teachers ES

8.10. Questionnaire for students IT

8.11. Questionnaire for parents IT

8.12. Questionnaire for teachers IT

8.13. Student interview form EN

8.14. Parent interview form EN

8.15. Teacher interview form EN

8.16. Guide to organizing and conducting the study

9. Resources

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