

## A Systematic Review of Psychosocial Resilience Interventions for Children and Adolescents in the COVID-19 Pandemic Period

Tatiani Gkatsa<sup>1\*</sup> 

### Abstract

Many integrated interventions for the psychosocial recovery and empowerment of children and adolescents were implemented during the period of COVID-19. This article aims to present the results of a systematic review of psychosocial, and psychological resilience interventions for children and adolescents implemented during the COVID-19 pandemic in the school and community context. The review includes published articles from December 2019 to February 2022. The databases, which were used for the search, were: Google-Scholar, Psych info, Web of Science and PubMed and Scopus. The following words were used in the search: child, adolescents, intervention, school, psychosocial, resilience, pandemic COVID-19. The corresponding articles were checked manually. Articles that did not agree with the inclusion criterion as the school context as well as the interventions related to the health measures to limit the pandemic were not considered. The final selection of articles included 10 studies. The final studies yielded information that was categorized according to their area of application (school, community), the period of application (crisis, lockdown, unlock), goal, method, results, and evaluation. The conclusions drawn from the pandemic, the lockdown and the unlocking confirm the need to apply the already known crisis intervention methods and practices, and other new, innovative practices and methods such as re-entry interventions, alternative methods and the use of new digital techniques and remote psychosocial support.

**Keywords:** Psychosocial resilience, interventions, trauma, children, adolescents, pandemic COVID-19

### Introduction

The application of psychosocial crisis interventions is a necessity to deal with psychosocial difficulties in emergency situations of natural disasters, such as the Wenchuan earthquake (Cohen et al., 2009; Zhang et al., 2012), typhoons, cyclones, cold, fires (Ascencao, 2022) and respiratory epidemics, such as the type A influenza outbreak (Fang et al., 2012). There is little experience in applied interventions to deal with psychosocial difficulties and mental health issues during epidemics in the general population, let alone children and adolescents (Douglas et al., 2009; Taylor, 2022).

At the onset of severe acute respiratory syndrome (SARS), new methods of psychological and counselling support were implemented through telephone lines and digital media. In the period of the Coronavirus 2019 (COVID-19) pandemic, the aforementioned methods soon emerged as the most important mental health support mechanism. However, many problems which concern the organization and management of psychosocial intervention activities during the period of the COVID-19 pandemic became apparent, such as the effectiveness and suitability of methods in the individual phases of the pandemic, infection and quarantine (Duan & Zhu, 2020; Grolnick et al., 2018).

The science of psychological resilience is applied and developed in the conditions of disasters and pandemics (Masten & Motti-Stefanidi, 2020). In the context of the COVID-19 pandemic, psychological resilience intervention programs or strength-based interventions aimed at increasing the individual's ability to cope with adversity and facilitate psychosocial adaptation have been implemented in various contexts (Arslan, 2022; Çağış & Yıldırım, 2023; Masten & Motti-Stefanidi, 2020; Parry et al., 2022; Yıldırım & Ashraf, 2023). This systematic review comes to fill this gap by highlighting evaluated methods of psychosocial, and psychological resilience intervention in children and adolescents, which were applied to the COVID-19 pandemic, in the different phases of the pandemic.

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<sup>1</sup>Department of Primary School, University of Ioannina

The COVID-19 pandemic caused negative effects on the physical (Liu et al., 2020), and psychosocial health and well-being of children and adolescents (Arslan et al., 2022; Avci, 2023; Gifford-Smith & Brownell, 2003; Majercakova Albertova & Bolekova, 2022; Panda et al., 2021; Ravens-Sieberer et al., 2021; Xie et al., 2020; Zhou et al., 2020b). Many international studies confirm the burden of children and adolescents, throughout the COVID-19 pandemic, with anxiety, depression and post-traumatic stress (Kar & Bastia 2006; Ma et al., 2021; Stavridou et al., 2020; Yıldırım & Çiçek, 2022). Anxiety in conditions of natural disasters, war, and epidemics for a prolonged period of time is a source of stress, and fear and causes pathological symptoms with long-term ominous effects on the development of individuals (Aziz & Yıldırım, 2020; Hambrick et al., 2019; Herringa et al., 2013; Larsen & Luna, 2018).

### **Trauma and pandemic COVID-19**

Children and adolescents can be traumatized by a variety of individual and systemic events such as natural disasters and pandemics (Edwards et al., 2003; Felliti et al., 1998). Scholars recognize that the COVID-19 pandemic constitutes a new type of trauma. The loss, the fear/threat of death, the disease, the suppression of social needs and growth drives, the isolation, and the loneliness are recognized as traumatic stressors in the COVID-19 pandemic (Chen et al., 2021; Kira et al., 2021b). Also, stress factors-secondary traumatic events in the COVID-19 pandemic could be including parental unemployment/financial problems, emotional and mental difficulties of parents and caregivers, domestic violence, and child abuse (Cohen et al., 2009; Geçer & Yıldırım, 2023; Kira et al., 2021a).

Additionally, pandemic conditions can activate a previous trauma caused by loss, death, and abuse (Grolnick et al., 2018). Trauma increases the likelihood of burdening physical and mental health (anxiety, depression, suicide, suicidal ideation, hallucinations, sleep problems), (Gkatsa, 2021b; Xie et al., 2020; Zhou et al., 2020b). Scientists point out that trauma causes neurodevelopmental damage and alterations in the brain, which are probably connected with many different health manifestations: cognitive, emotional, social, sensorimotor, and physical (Kira et al., 2021a; Perry, 2007).

### **Post-traumatic stress disorders and pandemic**

From an investigation of the previous experience of pandemic conditions, it is confirmed that 30% of quarantined children and 25% of children whose parents were quarantined experienced PTSD symptoms in H1N1 and SARS-Cov conditions (Sprang & Silman, 2013). In the period of the COVID-19 pandemic, children and adolescents tend to manifest post-traumatic distress and post-traumatic anxiety, after the traumatic event due to unclear traumatic circumstances in the family or school (Zhou, 2020c). Unfortunately, school closures in many school districts amid the pandemic have been a blow to overall mental health, as for many children school is the only source of trauma care, support, and information (Phelps & Sperry, 2020).

Psychological resilience comes to respond to the need to deal with stressful and traumatic events, as it provides the ability for the individual to withstand the stress, recover, adapt and return to continue the developmental trajectory of growth (Masten & Barnes, 2018; Gkatsa, 2021b). Psychological resilience is developed in children and adolescents as an individual process through multi-level systems such as school, family, and community, which are interconnected and work together to reduce the multi-level risks of the pandemic (Masten & Motti-Stefanidi, 2020).

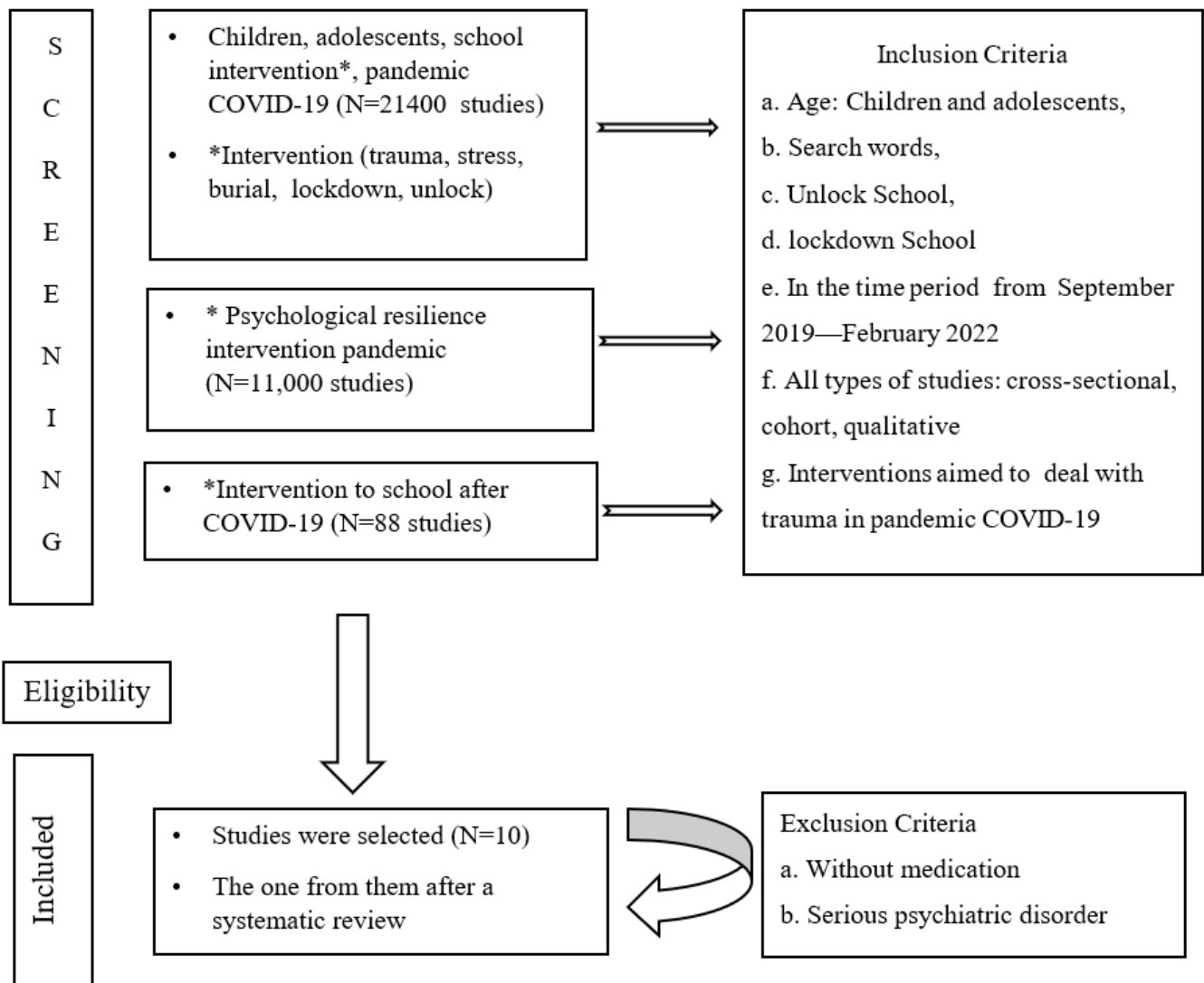
This systematic review of psychosocial and psychological resilience interventions in school-age children and adolescents aims to highlight evaluated multilevel intervention methods and innovations that have been implemented throughout the pandemic. This article aims to present the results of a systematic review of psychosocial, and psychological resilience interventions for children and adolescents implemented during the COVID-19 pandemic in the school and community context.

## **Method**

### **Inclusion criteria**

The review includes published articles from December 2019 to February 2022. The databases used for the search were: Google-Scholar, Psych info, Web of Science and PubMed and Scopus. According to the procedure followed, all of the following words were used in the search: children, adolescents, trauma, intervention, psychosocial, school, psychological resilience, and pandemic COVID-19. In the first search step, the keywords "children, adolescents,

school, intervention\*, pandemic COVID-19 were used with the specialization of the interventions in the following \*Intervention and (\*Trauma or \*stress or \*burial or \*lockdown or \*unlock) and 20400 studies were found. In the second step, the search was specialized in " Psychological resilience Intervention Pandemic" and 11000 studies were identified. In the third step, the search was made with the words "\*Intervention in school after Covid" and 88 studies were found, of which none were included, because they had not been evaluated. The systematic review included cross-sectional, longitudinal, quantitative and qualitative studies that met the inclusion criteria (see Figure 1).



**Figure 1.** Systematic review flowchart

### Procedure

Corresponding articles were manually checked. A multi-level selection process was followed. In the first stage, the selection was made from the title and abstract. In the second stage, the check was done after studying the entire text of the article. Finally, ten articles were selected that a) meet the search criteria exactly as described in the search words -psychosocial, psychological resilience intervention, interventions aimed to deal with trauma in pandemic covid-19 (Table 1), b) meet the inclusion criteria such as students, children and teenagers, in all phases of the pandemic (Unlock School, lockdown School), in the specific period (September 2019-February 2022) and which have been evaluated. All types of studies: cross-sectional, cohort and qualitative were accepted (Table 1). In contrast, articles from studies reporting interventions related to the health measures to limit the pandemic, children and adolescents with severe psychiatric disorders, who were on medication, unrelated to the school setting or the student's status in the community Also, interventions to school after COVID-19 were not included because they do not meet the evaluation criteria.

**Table 1.** Characteristic of interventions in Pandemic COVID-19

The first authors' studies	Aims/Sample & characteristics	Methods	Measures	Period of Pandemic			Country	School	Community	Valuation
				In crisis	Lock Down	Un Lock Down				
1. Giboney Wall, (2022)	-Support students of elementary school and their families	-Trauma-informed practices -Qualitative study -Digital pedagogy	1. Content analysis 2. Trauma-informed 3. Measures to reduce isolation, build community, and strengthen resilience	V	V	V	California	V	-Trauma-informed practices can effectively (socioemotional and pedagogy) support students and families	
2. Yuan, (2021)	-Resilience -N=all = 180 (adolescents and children): N=90- Experimental group & N=45 students- group control	Mindfulness training: 15 min of a mindfulness training recording every day for 6 months	1. Resilience Scale Connor & Davidson's (2003) 2. Emotional Intelligence Scale (E), b. e Emotional Intelligence Scale by Schutte et al. (1998, 2001) 3. Spence's Social Skills Questionnaire – Parent (SSQ-P) and Teacher (SSQ-T) versions (1995) 2. Emotion Regulation and Social Skills Questionnaire – Parent (ERSSQ-Parent)	V	V	V	China	middle	-Trauma-informed practices can effectively (socioemotional and pedagogy) support students and families -fairly small sample size. Mindfulness training increased: resilience, emotional intelligence	
3. MacEvilly, (2020)	-Socio-Emotional Skills -N=18 Children, Adolescents (Autism Anxiety, ADHD) and their families	Teletherapy Videoconferencing -Adaptation of Program -Cognitive Behavioral Therapy -Online therapeutic triads	1. Spence's Social Skills Questionnaire – Parent (SSQ-P) and Teacher (SSQ-T) versions (1995) 2. Emotion Regulation and Social Skills Questionnaire – Parent (ERSSQ-Parent)	V	V	V	Australia	-	V	Outcomes similar to face-to-face therapy sessions: -emotional regulation, -parental confidence -social communication -manage anger anxiety.

4. Capurso, (2021)	Education and development- processing emotions and lockdown experiences in their classrooms: Primary- N=269 Middle- N=255 Kindergarten	School-Re-Entry Intervention: Activities	P) and Teacher (ERSSQ-T) versions 1. The STAIC— State-Trait Anxiety Inventory for Children (Spielberger & Edwards, 1973) 2. The Positive Affect and Negative Affect Schedule-Child State form (PANAS-C; Watson et al., 1988). 3. Careful rehearsals, structured conversations, and materials 1973	V	V	VI	USA Australia Canada	Interaction school and home	V	A school re-entry program can play an important role in fostering resilience and development during a crisis  Greater benefits: young children who have been making progress since the age of thirty Without or less progress: depend on from the access to the telehealth platform and sociocultural factors
5. Ameis, (2020)	-Resilience Mental Health, Wellbeing -Autistic people -USA- N=8000 etc. in many countries	Telehealth platforms		V	V	VI	USA Australia Canada	Interaction school and home	V	Greater benefits: young children who have been making progress since the age of thirty Without or less progress: depend on from the access to the telehealth platform and sociocultural factors

6. Malboeuf et al., (2021)	-Well-being and reduce psychological distress -Elementary schools N=22 children,	Online mindfulness- art therapy -6 week	Behavior Assessment Scale for Children-3rd edition (BASC III)	V	V	V	Quebec, Canada	V	-	Both interventions online and remotely, mandala and free design through a videoconference platform, is feasible and adequate in school-based settings.
7. Cataldi, (2021)	-Physical well-being -mental attitude, -emotional self-efficacy -N=30 healthy Adolescents	8-week fitness-CrossFit intervention program	Regulatory Emotional Self-Efficacy scale (RESE)	V		V	Italy	V	-	Positively affect (well-being, affect, body awareness, and self-esteem) in circumstances of social distancing in the pandemic This method will be usefulness basis - psychological crisis intervention as a response for urgent social & psychological problems
8. Zgueb, (2020)	Centralized psychological support system for all of Tunisia including those Without access to Internet	-Helpline and a technical platform. -Worked: Psychiatrist psychology, therapists etc. - throughout the country	1. Protocol Methods 2. Recruitment of therapists- volunteer 3. Coordination of the Tunisian Medical Student's 4. Modeling of the process of the contact 5. The beginning of the activity	V	V	V	Tunisia	-	V	

9. Brunzell, (2021)	Teacher Wellbeing N=18	Trauma-Informed Positive Education -TIPE – for teachers' wellbeing	1.literatures supporting trauma-informed positive education (TIPE) 2. Evaluation phenomenologic al analysis and reflecting from the teachers	V		Melbourne	V	-Increasing teacher wellbeing has yet to be comprehensively explored -limited possibility of generalization and conclusions
10. Zheng, (2021)	-Physical activity to reduce anxiety and digital eye strain Children from 7 middle school	Physical exercise of online classes in the time of school closure	1.Spence Children's Anxiety Scale (SCAS) 2.Self-reported Computer Vision Syndrome Questionnaire (CVS-Q), etc.		homeschooling	Southern China	V	This digital behavior change intervention reduced children's anxiety and eye strain during COVID-19– associated online schooling

## Results

Ten studies that met the inclusion criteria were retained in the final selection. All studies were comprehensive and peer-reviewed. The goal of all interventions described in the studies is the psychosocial well-being and psychological resilience of children and adolescents (see Table 1). Seven out of ten studies refer to interventions aimed at children and adolescents, in the general population and three studies refer to children and adolescents with special needs (autism, attention deficit hyperactivity disorder and emotional difficulties).

Specifically, the intervention trauma-informed focused on a school where families faced financial difficulties was included. The intervention aims to cultivate relationships, joint action, collectivity, self-regulation and social-emotional learning. Thanks to this intervention, the school that ran the program took steps to reduce isolation, build community and strengthen psychological resilience (Giboney Wall, 2022). The Intervention mindfulness training increased students' psychological resilience and emotional intelligence. Implemented in middle school Mindfulness training for 15 minutes every day for 6 months (Yuan, 2021). Also, the Intervention Cognitive-Behavioral Therapy for Children Adolescents Mental Health Students (CAMHS), aimed to promote the mental health of children and adolescents with moderate or severe mental health problems, such as anxiety, depression, and autism spectrum disorders. It is a remote psychological intervention, which replaced in-person psychological intervention conducted in regular, one-on-one sessions. The intervention aimed to regulate emotions, and social skills and prevent regression. Parents were also trained to act as facilitators with a mediating role. The study was included because the sample refers to children and adolescents with moderate mental health problems. It is noted that a new method of personalized teletherapy is recorded and involves children, parents, and experts (MacEvelly & Brosnan, 2020).

The 8-week fitness intervention in adolescents was implemented during the pandemic to deal with social isolation and as an antidote to the repressive measures of any social event during the pandemic period (Cataldi et al., 2021). The intervention re-entry to school was implemented after the initial lockdown in primary, middle school, and kindergarten. It relied on training activities in order for students to train to improve their feelings and experiences from the Initial Covid19 Lockdown (Capurso et al., 2021).

Intervention with the use of digital technology and digital media such as digital platforms and video calls aims to develop resilience, empowerment, and well-being and prevent the deterioration of the mental health of autistic children, and parents during the pandemic (Ameis et al., 2020). The intervention method free plan and the mandala plan have an emotional base and promote mental health in students during the pandemic. The remote intervention with a video camera and the life intervention through a plan helped the students as well as the students with attention deficit hyperactivity disorder (Malboeuf-Hurtubise et al., 2021).

Psychological intervention during the pandemic was implemented in Tunisia it is aimed at children, teenagers, and the whole population. The method combines services and exploits possibilities. It has the possibility of a digital platform, helpline, services, mental health professionals, volunteers, and medical students being used to provide psychological support and refer to appropriate therapists in the relevant services, in order to meet mental health needs. (Zgueb et al., 2020). Similarly, the intervention in digital classrooms during the quarantine-education from home, which has as its main method the activity to reduce anxiety and digital eye strain (Zheng, 2020), was also included.

Finally, the intervention for teachers with the Trauma-informed Positive Education (TIPE) method, was included. The study focused on supporting teachers with training in positive psychology, aiming to improve their mental well-being. The study was chosen after much thought and reflection. It was decided to include it because, although the intervention is not directly aimed at students, the role and effect of teachers on the mental health of students are very important, as teachers are the important and competent persons in the school context to recognize and respond to the student trauma (Brunzell et al., 2021). They are additionally burdened with a high level of stress due to a lack of practice in applying trauma information to students (Brown et al., 2022). From the present study emerged a collection of psychosocial, and psychological resilience interventions and methods for children and adolescents applied in the three periods of the pandemic (see Table 2).

Future studies could focus overall on psychosocial, and psychological resilience intervention strategies and methods that have been evaluated and structure a comprehensive psychosocial prevention and intervention plan for respiratory-type pandemics.

**Table 2.** Psychosocial and psychological resilience Interventions in the three phases of the COVID-19 pandemic

In crisis	Lockdown	Unlock
<ul style="list-style-type: none"> <li>• Trauma-informed practices (Giboney Wall, 2022) relationship, self-regulation, social-emotional learning</li> <li>• Measures to reduce isolation (Giboney Wall, 2022)</li> <li>• Mindfulness training (Resilience, EI) (Yuan, 2021)</li> <li>• Cognitive Behavioral therapy with videoconference (MacEvilly, 2020)</li> <li>• Telehealth platforms (Autistic/Resilience, Mental Health), (Ameis, 2020)</li> <li>• Online mindfulness - art therapy (ADHD) (Malboeuf, 2021)</li> <li>• Cross-fit-Physical well-being - mental attitude, emotional self-efficacy (Cataldi, 2021)</li> <li>• Trauma-Informed Positive Education (TIPE) for teachers' well-being (Brunzell, 2021)</li> <li>• Homeschooling-Physical exercise of online classes in the time of school closure (Zheng, 2021)</li> <li>• Helpline and a technical platform for all (Zgueb, 2020)</li> </ul>	<ul style="list-style-type: none"> <li>• Homeschooling-Physical exercise of online classes in the time of school closure (Zheng, 2021)</li> <li>• Online mindfulness - art therapy (ADHD) (Malboeuf, 2021)</li> <li>• Cognitive Behavioral therapy with videoconference (MacEvilly, 2020)</li> <li>• Telehealth platforms (Autistic/Resilience, Mental Health) (Ameis, 2020)</li> <li>• Helpline and a technical platform for all (Zgueb, 2020)</li> <li>• Trauma-informed practices (Giboney, 2022) -relationship, self-regulation, social-emotional learning</li> <li>• Measures to reduce isolation (Giboney, 2022)</li> <li>• Mindfulness training (Resilience, EI) (Yuan, 2021)</li> </ul>	<ul style="list-style-type: none"> <li>• School-Re-Entry Intervention: Activities</li> </ul>
<p>*Intervention delivery modes:            - Face-to-face, online, or telehealth-based            - Individual, group, and population-based</p>	<p>* Intervention delivery modes:            - Online, or smartphone-based            - Individual, group, and population-based</p>	<p>*Intervention delivery modes:            - Face-to-face,            - Individual, group</p>

## Discussion

What strategies and methods emerged from the systematic review of psychosocial, psychological resilience interventions for children and adolescents in the COVID-19 pandemic? The question is analytically answered through the individual categorization of the findings according to the intervention model, the traditional or alternative type of intervention, the periods of COVID-19 implemented, the place of implementation, and the typical development or special characteristics of children and adolescents.

In terms of methods that emerged from evaluated psychosocial interventions for children and adolescents during the pandemic COVID-19 are Trauma-informed (Giboney Wall, 2022), Trauma-informed Positive Education for teacher's well-being (Brunzell, 2021), Mindfulness- Resilience- Emotional Intelligent-Social Emotional Learning (Yan, 2021), Emotional regulation and Emotional-Social Skills with Cognitive Behavior Therapy (CBT) through Teletherapy/ Videoconferencing, (MacEvilly & Brosnan, 2020), Re-entry activities in school for the reduction anxiety and negative emotions (Capurso et al., 2021).

Also, new, alternative methods of promoting mental health were implemented such as teletherapy for autism (Ameis et al., 2020), a Digital platform & Helpline for psychological Consulting & Support (Zgueb et al., 2020), Physical activity in digital classes with classmates (Zheng et al., 2021), Fitness & Self-Regulation Efficacy, in digital classes (Cataldi et al., 2021), Online Art-therapy (free design and *mandala*), (Malboeuf-Hurtubise et al., 2021). Regarding the use of teletherapy for autism, children and adolescents on the autistic spectrum are given the opportunity to develop effective communication and develop social skills, not only in a pandemic but also in any other period when social restrictions are lifted (Mootz et al., 2022).

For each individual period of the pandemic, special methods emerged. In the period of crisis, Trauma-informed (Giboney Wall, 2022), and Teaching the teachers (Brunzell, 2021) were implemented. During the quarantine period - homeschooling and physical activity with classmates (Cataldi et al., 2021) was implemented. In the Re-entry to school -Activities in class (Capurso et al., 2021) were implemented, out of quarantine and crisis-Crossfit in school (Cataldi et al., 2021). Throughout the pandemic - Informed Trauma, Resilience, Mindfulness, Social Emotional Learning, Digital-platform, videoconferences, Art therapy, and Physical activities.

Methods applied for the psychosocial support of children and adolescents with difficulties were singled out. In particular, for children and teenagers with autism, anxiety, and depression applied Teletherapy, Tele-therapy with adapting program Social Behavior Therapy (MacEvelly & Brosnan, 2020; Ameis et al., 2020) and On-line Art Therapy (Malboeuf-Hurtubise et al., 2021), which last method was more effective for students with inattention and hyperactivity.

Eight out of ten studies describe intervention methods with online, digital methods. A study describes a face-to-face intervention method with classroom activities during the re-entry to school period (Capurso et al., 2021). One study presents a mixed method of face-to-face and online, remote intervention with a physical exercise program (Cataldi et al., 2021). It is clear that the COVID-19 pandemic has highlighted the possibility and benefit of developing telehealth. The provision of mental health services can extend beyond the consultation room (Mootz, et al., 2022). Alternative forms of psychosocial intervention such as art therapy are also documented by other studies during the period of the pandemic for children in early childhood (López-Manrique, 2021) but also students in late adolescence (Hoferichter & Steinberg, 2022). Art therapy combined with communication planning benefits communication, especially important in pandemic conditions of social isolation (Liu et al., 2021).

In addition, the article discusses physical exercise as an alternative method of psychosocial intervention in the pandemic period. Physical exercise is protective against social stress (Acosta et al., 2021). In particular, adolescents' moderate physical activity for twelve weeks was shown to be associated with psychosomatic well-being (De Candia et al., 2021). Scholars recognize as mediating mechanisms the meaning of life and the development of self-efficacy as well as the acquisition of strategies, such as controlling external factors, controlling food and weight, and accepting self-image (Zhou & Huo, 2022a).

The COVID-19 pandemic has created conditions for abuse, family violence, neglect, and racial discrimination that necessitate care for psychological, and mental well-being and the recognition of trauma. The school could be well prepared for the unexpected crisis to help students in any way it can and of course against the development of emotional and social difficulties caused by the pandemic (Arslan, 2021; Capurso, 2022) and respond to the needs of children, adolescents and to their quick recovery. Psychological crises, trauma, and secondary traumatic events could be the focus of planned interventions (Ascencao, 2022). The review confirms the basic principle of psychological resilience that the individual can develop through interconnected, social systems when they work in coordination and co-evolve (Masten & Motti-Stefanidi, 2020).

## **Conclusion**

From the descriptive elements of the systematic review, useful, informative material emerges for methods and practices of psychosocial interventions for children and adolescents during the period of the COVID-19 pandemic. The already known, new, innovative practices and methods such as re-entry interventions, alternative methods (art therapy, physical exercise) the use of new digital techniques, and remote psychosocial support that emerged from the pandemic conditions could enrich the design of an intervention model in all phases of a respiratory type pandemic. The psychological resilience of children and adolescents is developed through individual caring relationships and organized multisystemic networks that function in a complementary and coordinated manner in individual development.

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## Compliance with Ethical Standards

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### ORCID

Tatiani Gkatsa  <https://orcid.org/0000-0002-2060-7171>

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