

## CHILDREN WITH PSYCHOPATHOLOGY AND THEIR PARENTS FACING THE COVID-19 PANDEMIC: A CASE-CONTROL STUDY

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## Abstract

**Objective:** This case-control study aimed to explore the effects of the COVID-19 outbreak on the mental well-being of pediatric psychiatric outpatients and their families, comparing them with children/adolescents and their parents from the general population.

**Method:** The case group consisted of 168 subjects: 56 patients (6-18 years old) with psychiatric disorders, and their 112 parents. The healthy control group included 189 subjects: 63 children and adolescents with no psychopathologies, and their 126 parents. Both groups were assessed during the first COVID-19 lockdown in Italy (T0) and 4 months later (T1), by administering the CBCL6-18 and DASS-21.

**Results:** Patients showed a good adaptation to the pandemic situation, while the children/adolescents in the healthy sample showed a greater variation in their general habits and a higher prevalence of stress symptoms during the lockdown. The patients' parents likewise had fewer stress-related symptoms than caregivers in the healthy control group, both during the lockdown and 4 months later. At T0, patients' mothers reported higher anxiety levels than mothers in the healthy group, while at T1 fathers of healthy children scored higher on the DASS-21 anxiety and stress scales than patients' fathers. As concerns changes over time (T0-T1) in the parents' psychological well-being, a general improvement was detected in both groups.

**Conclusions:** The pandemic and quarantine measures were confirmed as significant stressors for all children and adolescents, and negatively affected their parents' adaptation. The findings of this study point to the need for preventive interventions to support the mental health of all parents and their children in uncertain and stressful times.

**Citation:** Iannattone, S., Raffagnato, A., Zanato, S., Traverso, A., Tascini, B., Del Col, L., Miscioscia, M., Gatta, M., (2021). Children with Psychopathology and Their Parents Facing the COVID-19 Pandemic: A Case-Control Study. *Clinical Neuropsychiatry*, 18(6), 324-333.

doi.org/10.36131/cnforiteditore20210606

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**Funding:** None.

**Competing interests:** None.

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**Key words:** adolescents, COVID-19 pandemic, children, mental health disorders, parenting, psychiatric outpatients, stress

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## 1. Introduction

Italy and the rest of the world have been dealing with the SARS-CoV-2 pandemic since the early months of 2020. Along with its dangerous and potentially deadly effects on physical health, the virus has significantly affected people's lifestyle. Social distancing, working from home, the closure of services and schools, and travel restrictions were among the main measures imposed by governments everywhere in an effort to contain the infection. As well as the changes and limitations of lockdowns, fear and uncertainty have negatively affected the whole population's quality of

life (e.g., Wang et al., 2020). Few studies are available as yet on the long-term effects of the pandemic, but those conducted so far consistently identify a worsening perceived well-being and mental health (Brooks et al., 2020; Rohde et al., 2020; Vindegaard & Benros, 2020; World Health Organization [WHO], 2020). For instance, when Varma et al. (2021) examined the impact of the COVID-19 pandemic on overall psychological distress in a sample of adolescents and adults from 63 countries, they found that 77% of participants experienced moderate-to-severe levels of stress, 60% reported anxiety, and 35% had significant depressive symptoms.

Children and adolescents are among the most susceptible to the detrimental effects of the situation prompted by the pandemic. The lack of opportunities to socialize, and changes in their daily routines carry a significant risk of prompting the onset of psychological suffering in young people, even more than in adults. In fact, several studies found a pandemic-related increase in behavioral problems, sleep disturbances, and separation anxiety in children, and rising levels of depression, anxiety, post-traumatic symptoms, self-harming behaviors, and eating disorders in adolescents (Bacaro et al., 2021; Cao et al., 2022; Cellini et al., 2021; Cielo et al., 2021; Di Giorgio et al., 2021; Liang et al., 2020; Minozzi et al., 2021). The more limited resources due to the pandemic also necessitated new forms of adaptation, and carried a risk of interfering with developmental trajectories and having serious psychological implications (Fioretti et al., 2020). The term 'resources' is used here to describe those planned actions (e.g., going to school or having a set daily routine) and reference people (e.g., parents, coaches, teachers, educators) that usually sustain young people's psychological adjustment. Children and adolescents have spent a lot of time indoors under lockdown, feeling lonely and socially isolated, a pandemic-induced situation that has been found associated with the risk of them developing psychological problems, like anxiety and depression (Magson et al., 2021). Another relevant issue concerns the increasing use of social networks and smartphones, which have become the only source of information, entertainment, and education for many children (Panda et al., 2021). It has also emerged that a greater exposure to media reports on COVID-19 was associated with significantly higher levels of anxiety and depression, and lower levels of satisfaction in general.

In this scenario, it is important to consider those children and adolescents already suffering from psychiatric problems as they have vulnerabilities that could make it even harder for them to deal with such adverse circumstances (Golberstein et al., 2020; World Health Organization [WHO], 2020). Severe stress, changes in daily habits, and loneliness could contribute to making their clinical condition more severe (Guessoum et al., 2020; Liu et al., 2020). For young people already suffering from mental disorders, the health emergency brought on by the pandemic, and the consequent restrictive measures have added significantly to their burden, posing a risk of negative psychological sequelae, such as post-traumatic stress symptoms (Società Italiana di Neuropsichiatria dell'Infanzia e dell'Adolescenza [SINPIA], 2020). In-depth research has shown that children and adolescents with psychopathologies experience specific emotional difficulties, such as alexithymia, impulsiveness, self-harming, and substance abuse (e.g., Cerutti et al., 2018; Gatta, Dal Santo, et al., 2016; Iannattone et al., 2021; Parolin et al., 2018). It is easy to imagine that such pre-existing emotional problems could exacerbate the affective symptoms of children/adolescents with mental health issues faced with unpredictable events, thus it harder for them to cope with the pandemic. Changes to healthcare services due to the COVID-19 outbreak have also strongly limited the provision of psychiatric care, raising the risk of patients relapsing and their mental health deteriorating (Pan et al., 2021). To give an example, a longitudinal study conducted in northern Europe found that people with more severe or chronic mental health disorders reported a greater impact of the pandemic on their mental health, a greater fear of COVID-19, and less positive coping mechanisms (Pan

et al., 2021).

Adults have been hit hard by the COVID-19 pandemic as well (e.g., Huang & Zhao, 2020). As concerns parents in particular, lockdowns have placed enormous demands on them, as they have had to strike a balance between changes in their own daily routines - including working remotely or becoming unemployed - and caring for their children and helping them with distance learning (DL). Such a situation has heightened the risk of adverse psychological sequelae in parents (Spinelli et al., 2020), and added to families' relational tensions, thus also reducing the parents' ability to respond to the emotional needs of their children (Cusinato et al., 2020). The role of intrafamilial relationships in children's emotional regulation is well known (Gatta, Sisti, et al., 2016; Gioia et al., 2021; Morris et al., 2017). Parental stress can strongly affect children's psychological well-being, becoming a risk factor for the onset of internalizing and externalizing disorders (Gatta, Balottin, et al., 2016; Holly et al., 2019). Parents have a crucial role in supporting their children's psychological adjustment and helping them to cope successfully with stressors. To better understand how children/adolescents react to unexpected events (such as the SARS-CoV-2 health emergency), we therefore need to consider the whole family environment, and that means the parents' psychological well-being too. It is particularly important to focus on the parents of children and adolescents with psychiatric problems, as they may be at greater risk of experiencing personal distress and psychological maladjustment. For example, studies conducted before the COVID-19 pandemic showed that the parents of children with psychiatric disorders suffer more from stress than other parents in the general population (Craig et al., 2016; Gatta, Balottin, et al., 2016; Puff & Renk, 2014). The pandemic could feasibly have further increased the levels of stress in the mothers and fathers of these young patients. Confinement at home and the suspension of mental health services due to the pandemic could have exacerbated such parents' sense of loneliness and helplessness in the face of their children's psychopathologies, with negative effects on their mental health (D. Marchetti et al., 2020).

Since the COVID-19 emergency is not yet over, and its sequelae - especially as regards mental health - need to be considered in the long term, it is crucial to identify those children/adolescents with neuropsychiatric disorders and parents who are at risk of a decline in their mental health, and to provide them with timely care. Taking this perspective, the present study aimed to investigate the correlates of the psychological suffering experienced by young psychiatric patients and their parents in relation to the COVID-19 pandemic (F. Marchetti, 2021; Singh et al., 2020).

### *1.1 Study aims and hypotheses*

The scientific literature on the COVID-19 pandemic is relatively limited as regards the mental well-being of vulnerable population groups, such as children and adolescents with psychiatric diagnoses. The present study investigates the impact of the lockdown prompted by the outbreak of SARS-CoV-2 on the mental health of Italian children/adolescents with psychiatric disorders and their parents, comparing them with children/adolescents from the general population, and their parents. This study had two main objectives:

- to examine the emotional-behavioral state of young outpatients with psychiatric disorders (clinical group) under lockdown due to the COVID-19 pandemic

(T0) and 4 months later (T1). A clinical group was compared with a healthy control group (of children and adolescents with no psychopathologies) to seek differences as regards any changes in their general habits, biological functions, and stress symptoms. It was assumed that patients would be more severely affected by the measures to contain the virus than controls, consequently developing more stress-related symptoms, and perceiving more changes in their routines, at both T0 and T1;

- to assess the psycho-behavioral status of the parents of children with neuropsychiatric disorders during the COVID-19 lockdown (T0) and 4 months afterwards (T1). The patients' parents were compared with those of the healthy controls to identify any differences in the family setting. It was assumed that the psychiatric patients' parents would experience more stress, anxiety and depression than the control group's parents at both T0 and T1 (D Marchetti et al., 2020). Changes in the two groups of parents' psychological well-being were also monitored over time (T0 to T1). An improvement in the symptoms of parents in both groups (cases and controls) was expected following the easing of the COVID-19 containment measures.

## 2. Materials and Methods

### 2.1 Participants

The clinical cases and healthy controls were recruited by the study researchers, the controls by word of mouth (relying on a cascade method), and the clinical group from among the children/adolescents being treated at an outpatient service of the neuropsychiatry unit at a university hospital in Veneto (northern Italy), and their respective parents.

The inclusion criteria for the children and adolescents were:

- age between 6 and 18 years;
- a psychiatric disorder diagnosed according to ICD-10 (World Health Organization [WHO], 1993) criteria;
- undergoing a psycho-diagnostic assessment or receiving psychiatric/psychological treatment (pharmacotherapy, psychotherapy, neuropsychiatric monitoring) in March 2020;
- parents' informed consent to their child's and their own participation in the study.

The following exclusion criteria were considered:

- personal or contextual factors that could jeopardize the correct interpretation and completion of the survey (e.g., severe intellectual disability or language barriers);
- acute psychiatric situations and severely decompensated disease at the time of recruitment;
- lack of informed consent form signed by parents.

Of the 73 patients potentially recruitable, 17 (9 males and 8 females) were excluded from the study on the grounds of the above criteria. The clinical sample thus consisted, at T0, of 56 patients of which 38 (67.9%) were girls and 18 (32.1%) boys, with an average age of 13.4 years (SD = 2.77). These patients' ICD-10 diagnoses, as established at the Neuropsychiatric Unit, were grouped into three broad diagnostic categories:

- 1) Category 1 included "emotional-affective disorders" - i.e. affective syndromes with F30-F39 codes (bi-

polar disorder, depressive disorder) and phobic syndromes, stress-related and somatoform syndromes with codes F40-F48 - 38 patients (67.9%) suffered from these disorders;

- 2) Category 2 related to "disorders of behavior and personality" - i.e. disorders of personality and behavior with F60-F69 codes, and behavioral and emotional disorders with onset usually occurring in childhood and adolescence with F90-F98 codes (such as attention deficit hyperactivity disorder-ADHD, conduct disorder, and oppositional disorder) - 7 patients (12.5%) had a diagnosis in this category;
- 3) Category 3 related to "neurodevelopmental disorders and psychosis" - i.e. non-mood psychotic disorders with F20-F29 codes, and disorders of psychological development (specific learning disorders and autism spectrum disorders) with F80-F89 ICD 10 codes - 11 patients (19.6%) suffered from these problems.

The clinical sample was also divided into two main categories. An internalizing category included emotional problems with few behavioral implications, such as anxious-depressive, phobic, and somatoform syndromes. Most of the clinical sample - 38 patients (68%) - had internalizing disorders. The other, behavioral category included disorders associated mainly with behavioral issues, often represented by attention deficit hyperactivity disorder, conduct disorders, intermittent explosive disorder, autism spectrum disorders. The behavioral category also included mixed forms, in which emotional-affective problems were associated with behavioral issues. There were 18 patients (32%) in the behavioral category.

Fifteen families did not return for the second phase of the study (T1). This was probably partly due to the pandemic and the associated restrictive measures. Moreover, two families dropped out because their children had been transferred to a residential psychiatric facility. At T1, the clinical sample thus included 39 children with an average age of 13.3 years (SD = 2.84) and their parents.

As for the healthy control group, the inclusion criteria for the children and adolescents were:

- age between 6 and 18 years;
- no psychiatric issues or organic diseases;
- parents' informed consent to their child's and their own participation in the study.

The exclusion criteria were:

- personal or contextual factors that could jeopardize the correct interpretation and completion of the survey (e.g., severe intellectual disability or language barriers);
- lack of informed consent form signed by parents.

At the beginning of the study (T0), the healthy sample consisted of 63 subjects with an average age of 12.4 years (SD = 3.49), and their parents. At T1, there were 40 children with an average age of 11.73 years (SD = 3.57), and their parents.

### 2.2 Procedures

The study was approved by the Ethics Committee at Padua University Hospital (ref. Protocol 0031095, CESC n.25 of 22/04/2021) and conducted in accordance with the Declaration of Helsinki. It was conducted starting in March 2020 at the Padua University Hospital's Neuropsychiatry Unit. Informed consent was obtained for all subjects involved in the study.



This work represents the completion of a previously-published study on the effects of the COVID-19 pandemic on the psychological health of Italian children/adolescents with psychiatric disorders (Raffagnato et al., 2021). While said earlier report only considered a clinical group, the present study also included a control group to compare with the clinical group, and thus provide a more complete picture of this important issue.

Data for the present longitudinal study were collected at two different time-points:

- at T0, subjects were recruited and assessed during the first lockdown in Italy, when strict social distancing and quarantining measures were in place nationwide (March-April 2020). During this first study phase, the survey was conducted remotely with both parents and their children (i.e., via email or phone call);
- at T1, participants were retested 4 months after their previous assessment, when national measures to combat the spread of the virus were gradually being relaxed (August 2020). This second survey was administered remotely if necessary, or in person if possible.

### 2.3 Measures

**Data collection sheet:** this was an ad hoc questionnaire developed to collect participants' personal and COVID-related variables. It was answered by parents and children in both groups. It contained socio-demographic information, details about any changes in body weight and biological functions, general habits, stress-related symptoms, and past traumatic life events. To be more specific:

- socio-demographic information included age, sex, marital/parental status (for parents only) and socio-economic status (for parents only) based on the SES index (Hollingshead, 1975), which scores families on one of five socio-economic levels (low, medium-low, medium, medium-high, high) based on the parents' education level and profession;
- changes in body weight (before and after February 2020), biological functions (sleeping-waking rhythm, diet), and general habits (e.g., exposure to screen-based media, physical activities);
- stress-related symptoms, including physical symptoms (headache, stomach ache, difficulty breathing, tachycardia, sweaty palms, hypertension, agitation, sleeping difficulties, fatigue, vertigo, loss of appetite, skin rash, sexual problems, tinnitus), behavioral problems (teeth grinding, compulsive eating, frequent alcohol drinking, critical attitude to others, bullying, professional errors, difficulty completing tasks), emotional symptoms (tension, anger, fidgeting, irritability, anxiety, ill humor, tearfulness, sadness, sense of powerlessness, demotivation, tendency to become agitated and feel distraught) and cognitive symptoms (difficulty thinking clearly, problems with making decisions, distraction/inattention, constant worry, loss of sense of humor, pessimism, confusion and mental turbulence, difficulty establishing priorities, lack of creative spirit);
- experience and description of any prior trauma.

**Child Behavior Checklist (CBCL 6-18)** (Achenbach & Rescorla, 2001; Frigerio et al., 2004): this is a parent-report instrument assessing the presence of psycho-behavioral difficulties in children. The tool

includes 112 items, yielding two profiles: one relating to competences, i.e., the child's level of personal autonomy and social skills, and performance in sports, hobbies, and at school; the other relating to behavioral and emotional problems. For both profiles, a child can be described as "normal", "borderline" or "clinical" on eight specific syndrome scales. These specific scales are then grouped into three scales concerning: internalizing problems (anxiety, depression, withdrawal, somatization); externalizing problems (aggressive and rule-breaking behavior) and other problems (social problems, thought problems, attention problems). A total score can also be computed from the sum of the scores on each subscale. In this study, the CBCL was only administered to parents of patients and the resulting data were used to describe the features of the group of cases in terms of internalizing and externalizing symptoms, and global clinical status (see sections 3.1 and 3.5.1). The variables considered for this purpose were the subscales concerning internalizing problems, externalizing problems, and total problems.

**Depression Anxiety Stress Scale-21 (DASS-21)** (Bottesi et al., 2015; Lovibond & Lovibond, 1995): this was completed by parents in both groups to measure their levels of stress, anxiety, and depression. It is a self-report tool with 21 items scored on a four-point Likert scale from 0 to 3 (0 = never; 1 = sometimes; 2 = often; 3 = always). The original version has Cronbach alpha values between 0.82 and 0.93. The Italian version (Bottesi et al., 2015) shows excellent psychometric properties, with Cronbach alpha values ranging from 0.74 to 0.85. To score the questionnaires, we used the online software of the Viterbo Association of Psychological Counseling and Research (Associazione di Consulenza e Ricerca Psicologica [ASCRIP], n.d.).

### 2.4 Data analysis

Descriptive analyses and frequency tables were used to outline the socio-demographic and clinical characteristics of the samples. These analyses were run for the children/adolescents and their parents in each of the two groups at T0, while at T1 the patients' characteristics were examined in more detail.

Then, a comparison was drawn between the two groups of children/adolescents, at both T0 and T1. The t-test for independent samples and the chi-square ( $\chi^2$ ) test for categorical variables were used to see if the groups were comparable in terms of age and gender, respectively. The chi-square test was then used to check for any significant associations between the groups (cases vs. controls) and changes in sleeping-waking rhythms, nutrition, weight, exposure to screen-based media, general habits, and number of stress-related symptoms (0; 1-5; 6-10; >10).

As concerns the family environment, the two groups of parents (of patients and children/adolescents from the general population) were compared at both T0 and T1. First, the association between group and number of stress-related symptoms was tested using the chi-square test for categorical variables. Then t-tests on independent samples were used to investigate differences between the two groups of parents in terms of their levels of stress, anxiety, and depression, inputting the scores on the DASS-21 scale as dependent variables and group (cases vs controls) as the independent variable. A 2 (Group: cases vs controls) x 2 (Time: T0 vs T1) repeated-measures ANOVA was performed to examine changes over time in parents' stress, anxiety and depression symptoms, as measured

with the DASS-21. Post-hoc tests with Bonferroni's correction were conducted for significant effects.

All the above-mentioned analyses were carried out with the Jamovi statistical software version 1.6 (The Jamovi Project, 2021), and statistical significance was set at  $p < 0.05$ .

### 3. Results

#### 3.1 Socio-demographic and clinical characteristics of children and adolescents at T0

In our group of children/adolescents with psychopathologies (cases), there was only one patient testing positive for the SARS-CoV-2 virus, and none of the children/adolescents were hospitalized. There was only one case of family members having to quarantine during the lockdown in 2020. As for their clinical variables, 14 children/adolescents (25%) with a neuropsychiatric disorder had a history of trauma. This involved: parents' conflictual separation in 42.9% of cases; a death or serious disease in the family in 21.4%; inability to adapt to living in a new place in 28.8%; and frequent episodes of prolonged hospitalization in 7.1%.

Families reported an exacerbation of some problem behavior in children under lockdown at home. For instance, 25% of parents mentioned more frequent and intense episodes of noncollaboration, indifference, physical/verbal aggression, poorly-targeted/organized play, screaming/crying, social isolation, provocative attitudes to others, attempts to escape, and self-cutting ideation. As for changes in their daily routines and biological functions during lockdown, the children's general habits remained much the same in 44.6% of cases. An altered sleeping-waking rhythm was reported in 21.4%, changes in diet in 12%, changes in the use of screen-based media in 12.5%, and weight gain in 10.7%.

The total number of the patients' physical, behavioral, emotional, and cognitive stress-related symptoms was investigated, grouped into 4 ranges: 53.6% of patients experienced no such symptoms (range 0); 23.2% of patients experienced 1 to 5 symptoms (range 1); 17.9% of patients experienced 6 to 10 symptoms (range 2); and 5.4% of patients experienced more than 10 symptoms (range 3). In short, more than half of the clinical sample showed no stress-related symptoms.

**Table 1** shows the clinical group's scores on the main CBCL scales at T0.

**Table 1.** Descriptive statistics (mean and standard deviation) of the scores on the main Child Behavior Checklist (CBCL) scales at T0

CBCL scale	Mother	Father
	Mean (SD)	Mean (SD)
Total Problems Scale	63.0 (9.3)	60.1 (10.7)
Externalizing Problems Scale	58.3 (9.8)	54.8 (10.2)
Internalizing Problems Scale	66.9 (10.5)	62.3 (11.6)

The healthy control group consisted of 63 children/adolescents: 27 males (42.9%) and 36 females (57.1%), aged 6 to 18 (average age = 12.4 years, SD = 3.49).

During the lockdown, none of these control children/adolescents tested positive for the SARS-CoV-2 virus, and none were hospitalized. There were 6 cases of

family members having to quarantine. As for the other clinical variables considered, 93.7% of the healthy children/adolescents reported no previous trauma, while one described suffering from anxiety about school attendance, two mentioned a grandmother with cancer, and one reported that a cohabiting family member had been hospitalized and undergone emergency surgery.

This sample's general habits varied under lockdown for almost all the children and adolescents concerned (95.2%), whereas most of them reported no changes in the other variables investigated. In particular, 66.8% judged their use of screen-based media to have remained the same, 82.5% experienced no changes in their sleeping-waking rhythms, 77.8% found their appetite unchanged, and 88.9% reported no changes in their weight. As for any stress-related symptoms: 31.7% of these control children/adolescents experienced no symptoms (range 0); 57.1% of them experienced 1 to 5 symptoms (range 1); 11.1% reported 6 to 10 symptoms (range 2); and none had more than 10 symptoms of stress (range 3).

#### 3.2 Socio-demographic and clinical characteristics of parents at T0

**Table 2** shows the main socio-demographic characteristics of the parents in the clinical group (56 mothers and 56 fathers) and healthy group (63 mothers and 63 fathers), referring to the period of lockdown.

When stress-related symptoms were investigated in the parents of the patients, 34 mothers (61%) and 42 fathers (75%) reported no such symptoms; 17 mothers (30%) and 13 fathers (23%) reported 1 to 5 symptoms; 3 mothers (5%) and 1 father (2%) reported 6 to 10 symptoms; and only 2 mothers (4%) reported more than 10. As for parents of the healthy controls, 18 mothers (28%) and 22 fathers (37%) reported no stress-related symptoms; 32 mothers (51%) and 27 fathers (45%) reported 1 to 5 such symptoms; 11 mothers (17%) and 9 fathers (15%) reported 6 to 10; and 2 mothers (3%) and 2 fathers (3%) reported more than 10.

#### 3.3 Comparison study regarding children and adolescents at T0

The groups of cases and controls were comparable in terms of age ( $t_{117} = 1.74$ ,  $p = 0.085$ ), and gender ( $\chi^2(1) = 1.45$ ,  $p = 0.23$ ). The chi-square test revealed statistically significant associations between group and changes in general habits ( $\chi^2(1) = 26.2$ ,  $p < 0.001$ ), and the use of screen-based media ( $\chi^2(1) = 7.15$ ,  $p = 0.07$ ). These changes were more likely in the controls than in the cases: 95% of controls reported changes in their general habits (as opposed to 55.4% of cases); and 33.3% reported changes in their use of screen-based media (as opposed to 12.5% of cases).

On the matter of stress-related symptoms, a significant association emerged with group ( $\chi^2(3) = 16.0$ ,  $p = 0.01$ ), with such symptoms significantly more likely in the healthy control group: 68.2% of the healthy children/adolescents had at least one symptom attributable to stress, as opposed to 46.5% of patients. In fact, more than half of the cases in the clinical group reported no stress-related symptoms. Overall, the comparison between the two groups revealed more changes in general habits and biological functions, and more stress-related symptoms in the healthy sample.

**Table 2.** Socio-demographic characteristics of parents of the case and healthy groups at T0

Case Group			
Socio-demographic characteristics	Mother	Father	
SES	Low (%)	27.3	2.3
	Medium-low (%)	13.6	20.5
	Medium (%)	13.6	31.8
	Medium-high (%)	34.1	36.4
	High (%)	11.4	9.1
Marital status	Conjugated (%)	82.1	82.1
	Separated/divorced (%)	17.9	17.9
Working modalities	As usual (%)	37.3	41.2
	Working remotely (%)	23.5	31.4
	Interrupted (%)	39.2	27.5
Healthy Group			
Socio-demographic characteristics	Mother	Father	
SES	Low (%)	5.6	5.6
	Medium-low (%)	5.6	33.3
	Medium (%)	-	-
	Medium-high (%)	77.8	55.6
	High (%)	11.1	5.6
Marital Status	Conjugated (%)	100	100
	Separated/divorced (%)	-	-
Working modalities	As usual (%)	30.1	33.3
	Working remotely (%)	60.3	57.1
	Interrupted (%)	9.5	9.5

Notes: SES = Socio-Economic Status Index

### 3.4 Comparison study regarding parents at T0

Another goal of the present study was to investigate the psychological well-being of the parents of the children/adolescents in our groups of psychiatric cases and healthy controls, to reveal strengths or weaknesses in the family environment. The chi-square test showed a statistically significant association between the range of stress-related symptoms reported by parents and group, for both mothers ( $\chi^2(3) = 13.7, p < 0.003$ ) and fathers ( $\chi^2(3) = 19.4, p < 0.001$ ). Parents of healthy controls were more likely to report from 1 to 5 symptoms (this applied to 50.8% of mothers and 45% of fathers in the control group as opposed to 30.4% of mothers and 23.2% of fathers in the group of cases). Conversely, more than half of the parents in the group of cases reported no such symptoms (60.7% of mothers and 75% of fathers), while this was only true of 28.6% of the mothers and 36.7% of the fathers of the healthy controls.

When t-tests on independent samples were used to compare the scores obtained by parents in the two groups on the DASS-21 scales, the only statistically significant difference that emerged concerned the mothers' anxiety ( $t_{108} = 2.51, p = 0.001$ ), with higher scores for the group of cases ( $M_{cases} = 49.4, SE = 1.97$ ;  $M_{healthy} = 44.4, SE = 0.92$ ).

### 3.5 Follow-up

The follow-up assessment of the clinical status

of the children/adolescents in our two groups was conducted 4 months after their first evaluation, when the lockdown measures began to be lifted.

#### 3.5.1 Sociodemographic and clinical characteristics of patients at T1

Thirty-nine children/adolescents with a mental disorder and their parents participated in this T1 phase: 25 females (64.1%) and 14 males (35.9%), with an average age of 13.3 years ( $SD=2.84$ ). Twenty-five of these cases (64.1%) involved internalizing disorders (mood disorders, anxiety, stress-related, and somatoform syndromes), and 14 (35.9%) involved behavioral disorders. As for their stress-related symptoms, 44.4% reported no symptoms, 32.4% between 1 and 5, 14.7% between 6 and 10, and 8.8% more than 10 symptoms.

Table 3 shows the scores obtained on the main CBCL scales at T1.

#### 3.5.2 Comparison study regarding children and adolescents at T1

The chi-square test revealed statistically significant associations between group and changes in both general habits ( $\chi^2(1) = 14.2, p < 0.001$ ) and exposure to screen-based media ( $\chi^2(1) = 13.5, p < 0.001$ ) at T1. Children and adolescents in the healthy control group were more likely to report changes in their daily habits and use of screen-based media (smartphones, computers, tablets): 95% of controls reported changes in their general habits (as opposed to 58.8% of patients); and 75% mentioned



**Table 3.** Descriptive statistics (mean and standard deviation) of the scores on the main Child Behavior Checklist (CBCL) scales at T1

CBCL scale	Mother	Father
	Mean (SD)	Mean (SD)
Total Problems	61.3 (9.3)	57.7 (10.3)
Externalizing Problems	56.1 (8.9)	53.9 (9.5)
Internalizing Problems	64.4 (10.1)	60.7 (11.4)

changes in their use of screen-based media (versus 32% of cases). There were no significant differences between the two groups at T1 in terms of the other biological functions considered, or the stress-related symptoms the children/adolescents reported.

### 3.5.3 Comparison study about parents at T1

When the association between parents' stress symptoms and group was examined using the chi-square test, there was a statistically significant association between group and number of stress-related symptoms for both mothers ( $\chi^2(3) = 9.78, p = 0.021$ ) and fathers ( $\chi^2(3) = 11.9, p = 0.008$ ). Most parents of children/adolescents in the clinical group (47.1% of mothers and 70.6% of fathers) reported no symptoms, while this was true of 30% of mothers and 39.5% of fathers of healthy controls. Most of the latter parents of healthy control children/adolescents (60% of mothers and 42.1% of fathers) reported between 1 and 5 stress-related symptoms (as opposed to 26.5% of mothers and 20.6% of fathers of patients in the group of cases).

When the two groups were compared at T1 as regards the parents' scores on the DASS-21 scale, t-tests for independent samples showed statistically significant differences for fathers' anxiety ( $t_{72} = -2.59, p = 0.015$ ) and stress scales ( $t_{72} = -2.02, p = 0.047$ ), with higher scores in the control group ( $M_{\text{anxiety}} = 42.1, SE = 0.68; M_{\text{stress}} = 46.1, SE = 1.32$  for cases versus  $M_{\text{anxiety}} = 45.3, SE = 1.02; M_{\text{stress}} = 49.2, SE = 0.89$  for controls).

When repeated-measures ANOVAs were computed to identify changes over time in the DASS-21 scores by group, no significant Group x Time interactions came to light. An overall significant effect of Time did emerge on the anxiety and stress scales of both mothers and fathers, however (mothers' anxiety:  $F(1,69) = 6.54, p = 0.013$ ; mothers' stress:  $F(1,69) = 10.3, p = 0.002$ ; fathers' anxiety:  $F(1,69) = 4.13, p = 0.046$ ; fathers' stress:  $F(1,69) = 4.62, p = 0.035$ ). Post-hoc test with Bonferroni's correction showed a significant difference between T0 and T1 on the scales for both parents, with scores significantly lower at T1 (mothers' anxiety:  $t_{69} = 2.56, p_{\text{Bonferroni}} = 0.013; M_{T0} = 46.6, SE = 0.87; M_{T1} = 43.9, SE = 0.87$ ; mothers' stress:  $t_{69} = 3.20, p_{\text{Bonferroni}} = 0.002; M_{T0} = 50.6, SE = 1.01; M_{T1} = 47.2, SE = 1.01$ ; fathers' anxiety:  $t_{69} = 2.03, p_{\text{Bonferroni}} = 0.046; M_{T0} = 44.8, SE = 0.72; M_{T1} = 43.6, SE = 0.72$ ; fathers' stress:  $t_{69} = 2.15, p_{\text{Bonferroni}} = 0.035; M_{T0} = 48.4, SE = 0.81, M_{T1} = 47, SE = 0.69$ ).

In short, the comparison between the two groups of parents at T1 pointed out that mothers and fathers of the healthy children/adolescents reported more stress-related symptoms than those of the patients. In particular, fathers of healthy controls scored significantly higher on the anxiety and stress scales of the DASS-21 than fathers in the group of cases. As for changes over time, the parents' stress-related symptoms generally improved, regardless of group.

## 4. Discussion

This case-control study explored the immediate (T0) and short-term (T1) effects of the COVID-19 outbreak and consequent lockdown on the psychological well-being of Italian pediatric outpatients with psychiatric disorders and their families, also comparing them with healthy children/adolescents from the general population and their parents.

We first compared the two groups of patients (cases) and healthy children/adolescents (controls) on their stress-related symptoms and any changes induced by lockdown in their general habits, daily routines, and biological functions. Our results showed no changes at either T0 or T1 (compared with the previous period) in the biological functions, body weight, and daily exposure to screen-based media in the vast majority of patients. More than half of the clinical group also reported experiencing no symptoms of stress. A greater variation in general habits and a higher prevalence of stress-related symptoms unexpectedly emerged in the healthy sample, with 95% of controls reporting changes in their general habits under lockdown (whereas this only applied to 44.7% of the cases in the clinical group). The clinical group would consequently seem to have a greater tolerance of uncertain and changeable situations than children/adolescents from the general population. These data should be interpreted in relation to the COVID-19 pandemic and the measures to restrict people's freedom of movement, which can be seen as important stressors for the mental health of the general pediatric population. A fear of disease, instability, and a sense of insecurity resulting from the constantly changing situation are elements that are bound to negatively affect all children. These particular aspects of the pandemic period may have mitigated the disparities deriving from the presence of a psychopathology, thereby also reversing certain trends in how people perceive and respond to stressful triggers. It could be that our patients are more accustomed to difficult psychological and contextual conditions, and consequently better prepared when faced with adversities (Raffagnato et al., 2021). This would explain why children/adolescents from the general population reported experiencing more symptoms of stress and greater changes in their general habits as a result of the pandemic. As Conti et al. (2020) mentioned, children and adolescents with psychiatric disorders may also have experienced less of the stress normally deriving from competition with peers and difficulties at school, for instance, during the lockdown, and this would have reduced their externalizing and affective problems. Our results should also be interpreted bearing the composition of the clinical sample in mind, however. It consisted mainly of patients with internalizing disorders, who have psychological issues relating to social and performance anxiety, a tendency for isolation, and avoidance that lockdown normalized to some degree. Children/adolescents with disorders in the emotional-affective sphere may therefore have temporarily felt less different from their mentally healthy peers.

We also examined the psychological well-being of the parents of children/adolescents with and without psychopathologies, both during the first lockdown and 4 months later to identify any changes occurring over time. The role of family structure on children's psychological well-being has become even more important than usual during the COVID-19 pandemic (Courtney et al., 2020). Parents are fundamentally important when it comes to helping children cope with stress, and manage negative experiences, so it is essential to consider the

characteristics of their parenting to better understand the effects of such a difficult and unpredictable period on children's mental health.

Some studies (conducted before the COVID-19 pandemic) reported higher levels of stress in parents of children/adolescents with psychopathologies than in those of children/adolescents without such problems (Craig et al., 2016; Gatta, Balottin, et al., 2016; Puff & Renk, 2014). Our findings only partially support such previous research. Consistently with the literature (D. Marchetti et al., 2020), our analyses showed higher levels of anxiety in the mothers of the clinical sample during lockdown, while no significant differences emerged in the fathers. Both parents of the children/adolescents with psychiatric issues reported significantly fewer stress-related symptoms than parents of the healthy controls, however, both during lockdown and after 4 months. At T1, the healthy children's fathers also reported experiencing significantly higher levels of stress and anxiety than the fathers of patients. Our results indicate that some differences in the way our cases and controls tended to perceive and respond to stressors may have been reduced or reversed in the setting of the COVID-19 pandemic. Like their offspring (as mentioned earlier), the parents of children/adolescents with psychiatric issues may have a stronger resistance to stress and/or the challenges of life, which would make them better able to face and adapt to stressful events.

The mothers and fathers of both groups showed a good adaptability over time, however, regardless of group. This is consistent with our initial hypothesis that there would be a general decrease in the parents' symptoms of anxiety, stress and depression with the easing of the COVID-19 containment measures.

Notwithstanding the interesting findings of the present study, some shortcomings need to be mentioned, such as the limited sample size, the prevalence of patients with internalizing disorders (mainly girls), the lack of a baseline assessment, and the involvement of participants from only one Italian region.

In conclusion, although our data are preliminary and further investigations are warranted, they confirm that the SARS-CoV-2 emergency and related lockdowns are significant sources of stress for all children and adolescents. How their parents have adjusted to the pandemic does not strikingly differentiate between families of children with and without psychopathologies. Our findings indicate that the sense of vulnerability, and insecurity associated with the COVID-19 pandemic inevitably affect everyone – children, adolescents, and their families – thereby reducing the differences usually seen between the general population and individuals with psychological issues. Taken together, our results shed light on the need for preventive action to sustain mental health, focusing specifically on managing stressful situations in order to foster the psychological well-being of children and their parents in times of uncertainty.

## References

Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA School-Age Forms & Profiles: An Integrated System of Multi-Informant Assessment*. University of Vermont Research Center for Children, Youth, & Families. Associazione Di Consulenza e Ricerca Psicologica [ASCRIP]. (n.d.). *Test DASS 21*. Retrieved March 27, 2021, from [http://www.ascrip.it/test/dass21/dass211\\_web.htm](http://www.ascrip.it/test/dass21/dass211_web.htm)

Bacaro, V., Chiabudini, M., Buonanno, C., De Bartolo, P.,

Riemann, D., Mancini, F., & Baglioni, C. (2021). Sleep characteristics in Italian children during home confinement due to COVID-19 outbreak. *Clinical Neuropsychiatry*, 18(1).

Bottesi, G., Ghisi, M., Altoè, G., Conforti, E., Melli, G., & Sica, C. (2015). The Italian version of the Depression Anxiety Stress Scales-21: Factor structure and psychometric properties on community and clinical samples. *Comprehensive Psychiatry*, 60, 170–181. <https://doi.org/10.1016/j.comppsy.2015.04.005>

Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *The Lancet*, 395(10227), 912–920. [https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8)

Cao, C., Wang, L., Fang, R., Liu, P., Bi, Y., Luo, S., Grace, E., & Olf, M. (2022). Anxiety, depression, and PTSD symptoms among high school students in China in response to the COVID-19 pandemic and lockdown. *Journal of Affective Disorders*, 296, 126–129. <https://doi.org/10.1016/j.jad.2021.09.052>

Cellini, N., Di Giorgio, E., Mioni, G., & Di Riso, D. (2021). Sleep and Psychological Difficulties in Italian School-Age Children During COVID-19 Lockdown. *Journal of Pediatric Psychology*, 46(2), 153–167. <https://doi.org/10.1093/jpepsy/jsab003>

Cerutti, R., Zuffianò, A., & Spensieri, V. (2018). The Role of Difficulty in Identifying and Describing Feelings in Non-Suicidal Self-Injury Behavior (NSSI): Associations With Perceived Attachment Quality, Stressful Life Events, and Suicidal Ideation. *Frontiers in Psychology*, 9, 318. <https://doi.org/10.3389/fpsyg.2018.00318>

Cielo, F., Ulberg, R., & Di Giacomo, D. (2021). Psychological Impact of the COVID-19 Outbreak on Mental Health Outcomes among Youth: A Rapid Narrative Review. *International Journal of Environmental Research and Public Health*, 18(11), 6067. <https://doi.org/10.3390/ijerph18116067>

Conti, E., Sgandurra, G., De Nicola, G., Biagioni, T., Boldrini, S., Bonaventura, E., Buchignani, B., Della Vecchia, S., Falcone, F., Fedi, C., Gazzillo, M., Marinella, G., Mazzullo, C., Micomonaco, J., Pantalone, G., Salvati, A., Sesso, G., Simonelli, V., Tolomei, G., ... Battini, R. (2020). Behavioural and Emotional Changes during COVID-19 Lockdown in an Italian Paediatric Population with Neurologic and Psychiatric Disorders. *Brain Sciences*, 10(12), 918. <https://doi.org/10.3390/brainsci10120918>

Courtney, D., Watson, P., Battaglia, M., Mulsant, B. H., & Szatmari, P. (2020). COVID-19 Impacts on Child and Youth Anxiety and Depression: Challenges and Opportunities. *The Canadian Journal of Psychiatry*, 65(10), 688–691. <https://doi.org/10.1177/0706743720935646>

Craig, F., Operto, F. F., De Giacomo, A., Margari, L., Frolli, A., Conson, M., Ivagnes, S., Monaco, M., & Margari, F. (2016). Parenting stress among parents of children with Neurodevelopmental Disorders. *Psychiatry Research*, 242, 121–129. <https://doi.org/10.1016/j.psychres.2016.05.016>

Cusinato, M., Iannattone, S., Spoto, A., Poli, M., Moretti, C., Gatta, M., & Miscioscia, M. (2020). Stress, Resilience, and Well-Being in Italian Children and Their Parents during the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health*, 17(22), 8297. <https://doi.org/10.3390/ijerph17228297>

Di Giorgio, E., Di Riso, D., Mioni, G., & Cellini, N. (2021). The interplay between mothers' and children behavioral and psychological factors during COVID-19: An Italian study. *European Child & Adolescent Psychiatry*, 30(9), 1401–1412. <https://doi.org/10.1007/s00787-020-01631-3>

Fioretti, C., Palladino, B. E., Nocentini, A., & Menesini, E. (2020). Positive and Negative Experiences of Living in COVID-19 Pandemic: Analysis of Italian Adolescents' Narratives. *Frontiers in Psychology*, 11, 599531. <https://doi.org/10.3389/fpsyg.2020.599531>



- doi.org/10.3389/fpsyg.2020.599531
- Frigerio, A., Cattaneo, C., Cataldo, M., Schiatti, A., Massimo, M., & Battaglia, M. (2004). Behavioral and Emotional Problems Among Italian Children Aged 4 to 18 years as Reported by Parents and Teachers. *European Journal of Psychological Assessment, 20*, 124–133. <https://doi.org/10.1027/1015-5759.20.2.124>.
- Gatta, M., Balottin, L., Mannarini, S., Birocchi, V., Del Col, L., & Battistella, P. A. (2016). Parental Stress and psychopathological traits in children and adolescents. A controlled study. *Rivista di psichiatria, 51*(6), 251–259. <https://doi.org/10.1708/2596.26726>
- Gatta, M., Dal Santo, F., Rago, A., Spoto, A., & Battistella, P. A. (2016). Alexithymia, impulsiveness, and psychopathology in nonsuicidal self-injured adolescents. *Neuropsychiatric Disease and Treatment, 12*. <https://doi.org/10.2147/NDT.S106433>
- Gatta, M., Sisti, M., Sudati, L., Miscioscia, M., & Simonelli, A. (2016). The Lausanne Trilogue Play within the outcome evaluation in infant mental health: A preliminary report. *Research in Psychotherapy: Psychopathology, Process and Outcome, 19*(1). <https://doi.org/10.4081/ripppo.2016.198>
- Gioia, F., Rega, V., & Boursier, V. (2021). Problematic internet use and emotional dysregulation among young people: a literature review. *Clinical Neuropsychiatry, 18*(1).
- Golberstein, E., Wen, H., & Miller, B. F. (2020). Coronavirus Disease 2019 (COVID-19) and Mental Health for Children and Adolescents. *JAMA Pediatrics, 174*(9), 819. <https://doi.org/10.1001/jamapediatrics.2020.1456>
- Guessoum, S. B., Lachal, J., Radjack, R., Carretier, E., Minassian, S., Benoit, L., & Moro, M. R. (2020). Adolescent psychiatric disorders during the COVID-19 pandemic and lockdown. *Psychiatry Research, 291*, 113264. <https://doi.org/10.1016/j.psychres.2020.113264>
- Hollingshead, A. B. (1975). *Four Factor Index of Social Status*. Department of Sociology, Yale University.
- Holly, L. E., Fenley, A. R., Kritikos, T. K., Merson, R. A., Abidin, R. R., & Langer, D. A. (2019). Evidence-Based Update for Parenting Stress Measures in Clinical Samples. *Journal of Clinical Child & Adolescent Psychology, 48*(5), 685–705. <https://doi.org/10.1080/15374416.2019.1639515>
- Huang, Y., & Zhao, N. (2020). Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: A web-based cross-sectional survey. *Psychiatry Research, 288*, 112954. <https://doi.org/10.1016/j.psychres.2020.112954>
- Iannattone, S., Miscioscia, M., Raffagnato, A., & Gatta, M. (2021). The Role of Alexithymia in Social Withdrawal during Adolescence: A Case-Control Study. *Children, 8*(2), 165. <https://doi.org/10.3390/children8020165>
- Liang, L., Ren, H., Cao, R., Hu, Y., Qin, Z., Li, C., & Mei, S. (2020). The Effect of COVID-19 on Youth Mental Health. *Psychiatric Quarterly, 91*(3), 841–852. <https://doi.org/10.1007/s1126-020-09744-3>
- Liu, J. J., Bao, Y., Huang, X., Shi, J., & Lu, L. (2020). Mental health considerations for children quarantined because of COVID-19. *The Lancet Child & Adolescent Health, 4*(5), 347–349. [https://doi.org/10.1016/S2352-4642\(20\)30096-1](https://doi.org/10.1016/S2352-4642(20)30096-1)
- Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales* (2nd ed.). Psychology Foundation.
- Magson, N. R., Freeman, J. Y. A., Rapee, R. M., Richardson, C. E., Oar, E. L., & Fardouly, J. (2021). Risk and Protective Factors for Prospective Changes in Adolescent Mental Health during the COVID-19 Pandemic. *Journal of Youth and Adolescence, 50*(1), 44–57. <https://doi.org/10.1007/s10964-020-01332-9>
- Marchetti, D., Fontanesi, L., Mazza, C., Di Giandomenico, S., Roma, P., & Verrocchio, M. C. (2020). Parenting-Related Exhaustion During the Italian COVID-19 Lockdown. *Journal of Pediatric Psychology, 45*(10), 1114–1123. <https://doi.org/10.1093/jpepsy/jsaa093>
- Marchetti, F. (2021). La voce dei “minori” durante e dopo la pandemia. *Recenti progressi in medicina, 5*(112), 331–334. <https://doi.org/10.1701/3608.35868>
- Minozzi, S., Saulle, R., Amato, L., & Davoli, M. (2021). Impatto del distanziamento sociale per covid-19 sui giovani: Tipologia e qualità degli studi reperiti attraverso una revisione sistematica della letteratura. *Recenti progressi in medicina, 112*, e51–e67.
- Morris, A. S., Criss, M. M., Silk, J. S., & Houtberg, B. J. (2017). The Impact of Parenting on Emotion Regulation During Childhood and Adolescence. *Child Development Perspectives, 11*(4), 233–238. <https://doi.org/10.1111/cdep.12238>
- Pan, K.-Y., Kok, A. A. L., Eikelenboom, M., Horsfall, M., Jörg, F., Luteijn, R. A., Rhebergen, D., Oppen, P. van, Giltay, E. J., & Penninx, B. W. J. H. (2021). The mental health impact of the COVID-19 pandemic on people with and without depressive, anxiety, or obsessive-compulsive disorders: A longitudinal study of three Dutch case-control cohorts. *The Lancet Psychiatry, 8*(2), 121–129. [https://doi.org/10.1016/S2215-0366\(20\)30491-0](https://doi.org/10.1016/S2215-0366(20)30491-0)
- Panda, P. K., Gupta, J., Chowdhury, S. R., Kumar, R., Meena, A. K., Madaan, P., Sharawat, I. K., & Gulati, S. (2021). Psychological and Behavioral Impact of Lockdown and Quarantine Measures for COVID-19 Pandemic on Children, Adolescents and Caregivers: A Systematic Review and Meta-Analysis. *Journal of Tropical Pediatrics, 67*(1), fmaa122. <https://doi.org/10.1093/tropej/fmaa122>
- Parolin, M., Miscioscia, M., De Carli, P., Cristofalo, P., Gatta, M., & Simonelli, A. (2018). Alexithymia in Young Adults With Substance Use Disorders: Critical Issues About Specificity and Treatment Predictivity. *Frontiers in Psychology, 9*, 645. <https://doi.org/10.3389/fpsyg.2018.00645>
- Puff, J., & Renk, K. (2014). Relationships Among Parents’ Economic Stress, Parenting, and Young Children’s Behavior Problems. *Child Psychiatry & Human Development, 45*(6), 712–727. <https://doi.org/10.1007/s10578-014-0440-z>
- Raffagnato, A., Iannattone, S., Tascini, B., Venchiarutti, M., Broggio, A., Zanato, S., Traverso, A., Mascoli, C., Manganiello, A., Miscioscia, M., & Gatta, M. (2021). The COVID-19 Pandemic: A Longitudinal Study on the Emotional-Behavioral Sequelae for Children and Adolescents with Neuropsychiatric Disorders and Their Families. *International Journal of Environmental Research and Public Health, 18*(18), 9880. <https://doi.org/10.3390/ijerph18189880>
- Rohde, C., Jepsen, O. H., Nørremark, B., Danielsen, A. A., & Østergaard, S. D. (2020). Psychiatric symptoms related to the COVID-19 pandemic. *Acta Neuropsychiatrica, 32*(5), 274–276. <https://doi.org/10.1017/neu.2020.24>
- Singh, S., Roy, D., Sinha, K., Parveen, S., Sharma, G., & Joshi, G. (2020). Impact of COVID-19 and lockdown on mental health of children and adolescents: A narrative review with recommendations. *Psychiatry Research, 293*, 113429. <https://doi.org/10.1016/j.psychres.2020.113429>
- Società Italiana di Neuropsichiatria dell’Infanzia e dell’Adolescenza (SINPIA). (2020). *Attività Clinico-Assistenziali Durante L'emergenza COVID: Indicazioni Operative per i Servizi di Neuropsichiatria Dell'infanzia e Dell'adolescenza e per i Servizi di Riabilitazione Dell'età Evolutiva*. Retrieved from <https://www.sinpia.eu/wp-content/uploads/2020/03/COVID-indicazioni-operative-per-i-servizi-NPIA.pdf>
- Spinelli, M., Lionetti, F., Pastore, M., & Fasolo, M. (2020). Parents’ Stress and Children’s Psychological Problems in Families Facing the COVID-19 Outbreak in Italy. *Frontiers in Psychology, 11*, 1713. <https://doi.org/10.3389/fpsyg.2020.01713>
- The Jamovi Project. (2021). *Jamovi (Version 1.6) [Computer Software]*. <https://www.jamovi.org>

- Varma, P., Junge, M., Meaklim, H., & Jackson, M. L. (2021). Younger people are more vulnerable to stress, anxiety and depression during COVID-19 pandemic: A global cross-sectional survey. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, *109*, 110236. <https://doi.org/10.1016/j.pnpbp.2020.110236>
- Vindegard, N., & Benros, M. E. (2020). COVID-19 pandemic and mental health consequences: Systematic review of the current evidence. *Brain, Behavior, and Immunity*, *89*, 531–542. <https://doi.org/10.1016/j.bbi.2020.05.048>
- Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., McIntyre, R. S., Choo, F. N., Tran, B., Ho, R., Sharma, V. K., & Ho, C. (2020). A longitudinal study on the mental health of general population during the COVID-19 epidemic in China. *Brain, Behavior, and Immunity*, *87*, 40–48. <https://doi.org/10.1016/j.bbi.2020.04.028>
- World Health Organization [WHO]. (1993). *The ICD-10 Classification of Mental and Behavioural Disorders: Diagnostic Criteria for Research*.
- World Health Organization [WHO]. (2020). *Substantial investment needed to avert mental health crisis*. <https://www.who.int/news/item/14-05-2020-substantial-investment-needed-to-avert-mental-health-crisis>