

DOI: 10.1002/pits.22950

### RESEARCH ARTICLE

WILEY

# Socio-emotional, cognitive, affective disorders and substance use in a sample of students in first- and second-grade high school in Italy: A comparison among students', parents', and teachers' perceptions

Loredana Cena <a>D</a> | Alice Trainini <a>D</a> | Sara Zecca <a>D</a> | Sofia Bonetti Zappa <a>D</a> | Federica Cunegatti | Chiara Buizza <a>D</a>

Department of Clinical and Experimental Sciences (DSCS), Section of Neuroscience, University of Brescia, Brescia, Italy

#### Correspondence

Loredana Cena, Department of Clinical and Experimental Sciences, Section of Neuroscience, University of Brescia, viale Europa 11, 25123 Brescia, Italy. Email: loredana.cena@unibs.it

Funding information Department of Clinical and Experimental Sciences, University of Brescia, Italy

### Abstract

The closure of schools, social hubs, and extracurricular activities due to lockdown measures imposed to curb the spread of SARS-CoV-2, has increased the risk factors for students' mental health. This cross-sectional study, conducted from March 2020 to March 2021, aimed to estimate socio-emotional, cognitive, and affective disorders and substance use in a sample of first- and second-grade high school students in Northern Italy. This study compared data from 284 Italian students' self-perceptions along with the perceptions of their parents and teachers through a web-based survey. The differences in the perceptions of the three groups (students, parents, and teachers) were analyzed using an analysis of variance test, applying a Bonferroni correction. The  $\chi^2$  test was used to assess the comparison between students, parents, and teachers in the substance use questions. The results showed statistically significant differences among the three groups. The most important outcomes were sociality, scholastic performance,

© 2023 The Authors. Psychology in the Schools Published by Wiley Periodicals LLC.

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

extracurricular activity, emotional symptoms, affective disorders (depression and anxiety), and substance use. These findings could be interesting for the promotion of mental health and prevention of psychopathological risks in students.

#### KEYWORDS

affective disorders, cognition, emotion, parents, sociality, students, substance use, teachers

### 1 | INTRODUCTION

WILEY

The COVID-19 pandemic is a traumatic event that disrupted the daily lives of young people (El Keshky et al., 2021; Imran et al., 2020; Jones et al., 2023), with the closure of schools due to the national lockdown, represented a big change (Viner et al., 2020) and had adverse effects, particularly evident in the underage population (Danese et al., 2020; Gabbrielli et al., 2022). School closures affected the normal academic routine of 1.5 billion learners (84% worldwide) across 169 countries (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2020). The education system was forced to make a rapid and unexpected change, with negative effects on students' cognitive and learning abilities (Sievertsen & Burgess, 2020; United Nations Children's Fund, 2020), presenting a reduction in their ability to concentrate and motivation to learn (Abudaga et al., 2021; Niemi & Kousa, 2020; Senft et al., 2022), and several academic gaps and difficulties (Krause et al., 2022; Panagouli et al., 2021). A systematic review detected a decline in their scholastic performance (Hammerstein et al., 2021), with a learning loss of approximately three percentile points or 0.08 standard deviations (SD), an effect equivalent to one-fifth of a school year, the same period when schools remained closed (Engzell et al., 2021). Prolonged interruption of education services, along with an increase in school attendance problems that caused refusals, truancy, withdrawal, and exclusion (Nathwani et al., 2021; Simoës-Perlant et al., 2022; Walters, 2023) therefore, negatively impacted children's and adolescents' learning experiences, which are necessary for their overall development (Buonsenso et al., 2021). Italy being one of the most affected countries in the world had one of the most restrictive home confinement rules (Orgilés et al., 2020), therefore leading to closure of schools, which resulted in negative effects on learning for students (Pellegrini & Maltinti, 2020; Tosi & Campi, 2021).

The closure of schools had negative consequences on children and adolescents not only from a cognitive point of view but also, especially for sociality, and reductions in social-emotional skills, prosocial behavior, and resilience have been reported (Martinsone et al., 2022). However, not all studies agree on this aspect; some have detected an increase in prosocial behavior, expressed by a greater willingness to benefit others (Daniunaite et al., 2021; van de Groep et al., 2020). The lack of social contact and interactions with peers, together with an unstable quarantine routine, significantly worsened emotional symptoms (Li et al., 2021; Liu et al., 2021) and conduct problems (Bosch et al., 2022) with an increase in internalizing, externalizing (Martinsone et al., 2022), and behavioral difficulties in young people (Andrejko et al., 2022; Bera et al., 2022; Viner et al., 2020) compared to prepandemic. A prevalence of 61.17% among adolescents reported emotional and behavioral problems, with a higher percentage (54.49%) related to peer relationship problems (Peterle et al., 2022).

Prolonged social isolation is a risk factor for poor mental health (Brooks et al., 2020; Fegert et al., 2020; Nearchou et al., 2020; Urbina-Garcia, 2020). Many changes in the daily routine of the students occurred: relationships and social contacts outside the family were replaced by virtual friends, excessive use of technological devices, and distance learning (Babore et al., 2022). On the other hand, leisure was restricted indoors as the

lockdown suspended all sports and extracurricular activities, which are known to be associated with improving mental health (Buonsenso et al., 2021; Katona et al., 2021; Oberle et al., 2020). A recent meta-analysis estimated that the prevalence of anxiety and depression during the guarantine doubled compared to prepandemic estimates, with higher rates in older adolescents, girls (Racine et al., 2021), and adolescents with pre-existing mental disorders (Bera et al., 2022), with worrying effects that continued even after the lockdown. The prevalence of depressive and anxiety symptoms reported in the literature varies according to the instruments used and the pandemic period. International studies conducted on students after COVID-19 confinement reported a prevalence of depressive symptoms of 23% (Xie et al., 2020), 41.7% (Panda et al., 2021), and 72.1% (Radwan et al., 2021). The prevalence of anxiety symptoms is 19% (Xie et al., 2020) and 34.5% (Panda et al., 2021), up to 89.1% (Radwan et al., 2021). As life gradually returned to normal, the negative mental health impact of the pandemic on high school students decreased, with lower rates of anxiety (7.1%) and depression (12.8%) symptoms among students than the symptoms recorded in previous studies (Cao et al., 2022). Lockdown and school closure also caused relevant mental health problems in Italian students (Esposito et al., 2021; Mensi et al., 2021); they were more likely to experience worsening anxiety (Smirni et al., 2020) and depressive (Meda et al., 2021) symptoms, with percentages of 47.5% and 14.1%, respectively (Pisano et al., 2021). In addition, aggressiveness emerged as the most characteristic mental attitude in response to the pandemic (Povero et al., 2022), as well as increased loneliness (Loades et al., 2020), together with the use of social networks (Nilsson et al., 2022), which allowed them to stay connected and socialize virtually with their schoolmates and friends. However, this exacerbates the risk of developing addictive behaviors such as addiction to the Internet (Lin, 2020), smartphones (Serra et al., 2021), social media (Cauberghe et al., 2021), online gaming and gambling (Cena, Rota, Calza, et al., 2022; Close et al., 2022), and negative behaviors such as cyberbullying, which has emerged as a notable concern (António et al., 2023).

During the COVID-19 lockdown, many students experienced emotional dysregulation (Cena, Trainini, Zecca, et al., 2023) and increased the consumption of substances (Sarvey & Welsh, 2021) such as alcohol (Sen et al., 2021), tobacco (Cancello et al., 2020; Sidor & Rzymski, 2020), and drugs (Bartel et al., 2020). Approximately one in three students who had never used substances reported using them more frequently (Brener et al., 2022; Chaiton et al., 2022). Italian students drank alcohol (43.1%); 4.2% became intoxicated, 16% engaged in binge drinking by consuming five or more drinks in a row, 18.4% smoked at least one cigarette, 5.9% used cannabis, and 0.9% used at least one illegal substance (Biagioni et al., 2023). Studies in this regard are contradictory: the results of other surveys suggest that the prevalence of substance use declined (Zolopa et al., 2022) because the availability of and access to them was limited (Layman et al., 2022), with students forced to stay at home. However, spending more time at home is not always a consistent factor of protection, as an Italian study found (Acuti Martellucci et al., 2021) young people were drinking and using substances with their parents shortly after social distancing measures were imposed, suggesting the existence of permissive parental attitudes and behaviors that encourage and facilitate the youth's consumption of substances.

The effects of the pandemic on youth's mental health and the social well-being of children, adolescents, and students have led to concerns expressed by parents, educators, and teachers (Cowie & Myers, 2021; Liu et al., 2021). A considerable proportion of parents (85.7%) perceived changes in their children's emotional state and behaviors, and reported that the most common changes were that children had more difficulty concentrating (76.6%), were more restless (38.8%), were more likely to argue with the rest of the family (29.7%), were more anxious (28.4%), and were angrier (25.9%) (Orgilés et al., 2020). Increased levels of anxiety-depression, aggression-irritability, impulsivity-inattention, and dependence-withdrawal have been reported, as well as a reduction in positive affect (Andrés et al., 2022) and a lack of scholastic motivation (Poll, 2020). Other studies reported that parents spent more quality time with their children and found it easier to handle them, with more positive parent-child interactions (Laufer & Bitton, 2023).

Teachers were also a valuable source of information for students, and their biggest concerns were the lack of direct contact with their pupils (Hatzichristou et al., 2021), how to increase their engagement and motivation to learn, and how to promote peer interactions, particularly when the entire class was online (Bhatnagar &

Many, 2022). During the COVID-19 lockdown, the divide created by computers or smartphones hindered dialog and teachers' ability to provide adequate, personalized feedback to their students (Iwai, 2020), as well as identify individual emotions and/or learning difficulties among students (Zaccoletti et al., 2020). Teachers reported a need for adaptive teacher-student relationships and collaborative learning (Tzankova et al., 2022).

Parents and teachers are important educational adult figures who live and have contact with students, at the same time, provide valid and complementary information that helps them understand their children/students better. The functioning of individuals can vary from one context and interaction partner to another (Achenbach, 2001; Achenbach et al., 1987); multiple sources of data from different informants' perceptions are needed for a comprehensive assessment of adolescents and children (Meyer et al., 2002) and no one source of assessment data can substitute for the other (Achenbach et al., 2005). By examining various data comparisons from different informants, mental health service providers can identify important consistencies and differences in the functioning of the person being assessed from different informants, such as students, parents, and teachers has been considered relevant for mental health (Indredavik et al., 2005; Van Meter et al., 2018), with respect to internalizing and externalizing disorders (Salbach-Andrae et al., 2009), cognitive disorders (Brenne & Rimehaug, 2019; Raiker et al., 2017), and emotional and behavioral problems (Dias et al., 2022).

In light of the above, this study aimed to examine the prevalence of socio-emotional, cognitive, and affective disorders and substance use assessed while schools, social hubs, and extracurricular activities were closed due to COVID-19 in a sample of public school students (13–18 years) in Northern Italy and compare students' self-perceptions along with the perceptions of their parents and teachers.

### 2 | METHOD

WILEY-

This work is part of a larger study (Cena, Rota, Trainini, et al., 2022) conceived by the University of Brescia in collaboration with the Ufficio scolastico regionale per la Lombardia Ufficio IV Ambito Territoriale di Brescia (Regional School Office for Lombardy, IV District of Brescia) and the Osservatorio Provinciale del contrasto alle ludopatie e al gioco d'azzardo di Brescia (Provincial Observatory for the Prevention of Compulsive Gambling Disorders and Betting of the Lombardy region).

### 2.1 | Study design

The present cross-sectional study involved students from five first-grade secondary public schools ("middle school") and five second-grade secondary public schools ("high school") in Northern Italy and their parents and teachers. It was conducted from March 2020 to March 2021. Information about the research study was presented both orally and in written form to the Heads and teachers of 10 selected schools by researchers of the University of Brescia during a meeting at the Ufficio scolastico regionale per la Lombardia Ufficio IV Ambito Territoriale di Brescia (Regional School Office for Lombardy, IV District of Brescia). Teachers communicated the information about the research study to parents and students during school meetings. Participants agreed to take part in the study after reading an information note and by signing a specific informed consent form (the study included an Informed Consent form for students, one for parents and one for teachers). The inclusion criteria were: being in first grade or second grade at high school; being parents or teachers of the students taking part in the study. The exclusion criterion was insufficient proficiency in Italian language to complete the questionnaires. Selected sample received an email asking them to participate in a web-based survey, together with a link to the survey and a detailed description of the study. They were informed that the participation was voluntary and that the survey was completely anonymous. Via the link, participants were asked to confirm their informed consent to take part. The web-based survey was created using LimeSurvey (www.limesurvey.

org), a proprietary survey tool that allows completely anonymous data collection; the software automatically sends via email a personal link to the survey to each participant. Once a participant completes the survey, LimeSurvey removes any participant identifiers from the survey data; only deidentified data were delivered to the investigators to preserve participants' anonymity. The survey was implemented following the guidelines proposed by Pealer and Weiler (2003).

### 2.2 | Participants

Of the 1628 subjects of selected schools (students, parents, and teachers) who were informed and were asked to participate in the study, a total of 901 (55.3%) agreed to take part in the web-based survey. The reasons given by those who did not participate included: difficulty reaching all students and parents (reported by teachers); lack of technological tools or internet connections (students); lack of time (parents). Only students, parents, and teachers with valid and complete instruments were included in the analysis. The study only analyzed the questionnaires of students, parents, and teachers that could be matched. The sample consisted of 284 students, 284 parents, and 38 teachers, who provided data on their 284 students (Figure 1). The youth sample was mainly composed of female students (72.5%), with a mean age of 16.0 (SD = 1.9). Almost all of the students (95.1%) were born in Italy and the majority lived in rural areas (86.3%). Most of the students (67.3%) lived with both parents and siblings. The adults who filled out the questionnaire were mothers (80.3%) and female teachers (77.5%).

### 2.3 | Measures

For the purposes of this study the following tools were used:

The Strengths and Difficulties Questionnaire (SDQ) is a short emotional and behavioral screening questionnaire for youth, parents, and teachers (Goodman, 1997), composed of 25 attributes, some positive and others negative, each rated on a three-point Likert scale ranging from 0 (Never) to 2 (Certainly true). The 25 items are divided across five subscales: Conduct Problems, Emotional Symptoms, Hyperactivity/Inattention, Peer Relationship Problems, and Prosocial Behavior, each of which with a range score from 0 to 10. A Total Difficulties score was obtained from the sum of the first four scales (based on 20 items). A higher score corresponds to a higher degree of difficulty except for the Prosocial Behavior scale, where a high score indicates significant positive behavior (Tobia et al., 2011). The subscales score and the Total Difficulties score are compared with a normative scale that defines the cut-off for normal, borderline, or abnormal results (De Giacomo et al., 2012) as shown below:

- Conduct Problems: abnormal 4-10, borderline 3, normal 0-2
- Emotional Symptoms: abnormal 5-10, borderline 4, normal 0-3
- Hyperactivity/Inattention: abnormal 7-10, borderline 6, normal 0-5
- Peer Relationship Problems: abnormal 4-10, borderline 3, normal 0-2
- Prosocial Behavior: abnormal 0-4, borderline 5, normal 6-10
- Total Difficulties: abnormal 17-40, borderline 14-16, normal 0-13

The Italian version of the SDQ proved to be a reliable instrument, as indicated by a Cronbach's  $\alpha$  ranging between .70 and .88 (Tobia et al., 2011). In this study Cronbach's *alpha* values ranged from .60 to .86.

The Achenbach System of Empirically Based Assessment (ASEBA) is a collection of questionnaires used to assess adaptive and maladaptive behaviors and overall functioning in individuals (Achenbach, 2001; Frigerio et al., 2004). The system includes report forms for multiple informants. For this study, we used the Child Behavior Checklist (CBCL), the Youth Self Report Form (YSR), and the Teacher's Report Form (TRF). The CBCL is used for caregivers, the YSR (11–18 years) is used for young people, and the TRF is used for teachers. The scales for parents





**FIGURE 1** Sampling procedure flow chart. \*38 teachers completed multiple questionnaires related to their students.

and teachers measured their perception regarding the students. The ASEBA includes 119 items for students, and 120 for parents and for teachers that cover a broad spectrum of problems. Informants rate the problem items as 0 = Not true, 1 = Somewhat or sometimes true, 2 = Very true or often true. The ASEBA is divided into different scales, which include: DSM-oriented scales (Depressive Problems that we report in the text as "Affective disorders";

7

Anxiety Problems; Somatic Problems; Attention Deficit/Hyperactivity Problems; Oppositional Defiant Problems; Conduct Problems) with a score ranging from 50 to 100; Competence scale, that assesses Activities (e.g., sports activities, etc.), Sociality (e.g., participation in organizations, clubs, friendly relationships, etc.), Total Competence (e.g., scholastic performance), and Academic scale with a score ranging from 20 to 65; Syndrome scales that include internalizing, and externalizing problems, anxious/depressed, withdrawn/depressed, somatic complaints, social, thought and attention problems, rule-breaking and aggressive behavior, other problems with a score ranging from 50 to 100. The results were interpreted as meeting one of three intervals. For the DSM-Oriented and Syndromic Scales are: normal < 60, borderline 60-63, clinical > 63; for the Competence Scale are: normal > 40, borderline 37-40, clinical < 37. The Italian version of ASEBA proved to be a reliable instrument, with Cronbach's  $\alpha$  values ranging between .71 and .95 (Pace & Muzi, 2019). In this study Cronbach's  $\alpha$  values ranging from .60 to .95.

Substance use was evaluated using three items of the ASEBA. The question on alcohol use was only included in the youth ("I drink alcohol without my parents' approval") and parents' ("My child drinks alcohol without parents' approval") version. Instead, the questions on tobacco and other drugs (i.e., marijuana) were contained in the version of all three groups: students ("I smoke, chew, sniff tobacco or use e-cigs", "I use drugs for nonmedical purposes—don't include alcohol or tobacco), parents ("My child smokes, chews, sniffs tobacco, or uses e-cigs", "My child uses drugs for nonmedical purposes—don't include alcohol or tobacco), teachers ("The pupil smokes, chews, sniffs tobacco, or uses e-cigs", "The pupil uses alcohol or drugs for nonmedical purposes—don't include tobacco)."

### 2.4 | Statistical analysis

The descriptive statistics for socio-demographic characteristics are given in terms of mean and SD for continuous variables, whereas frequencies and percentages are reported for categorical variables. The *t* test or the corresponding non-parametric Mann–Whitney test (for non-Gaussian distributed variables) were used to compare quantitative variables between students' and parents' groups. The analysis of variance (ANOVA) test, applying a Bonferroni correction, was used to compare quantitative variables among three groups (students, parents, and teachers). The effect sizes are reported for the differences between student and parent groups using Cohen's *d*, and for the differences among the three groups (students, parents, teachers) using Partial Eta Squared ( $\eta^2$ ) for ANOVA. In our analysis, 0.2 was considered a small effect, 0.5 a medium effect, and 0.8 or above a large effect. The  $\chi^2$  test was used to assess the comparison among students, parents, and teachers in the substances use questions. We calculated the adjusted residuals (*z* scores) and their associated *p* values to detect positive (*z* > 1.96) and significant (*p* < .05) relationships among the variables analyzed. All tests were two-tailed, and the probability of a type I error was set at *p* < .05. All analyses were performed with SPSS 28.

### 3 | RESULTS

#### 3.1 | Differences among students, parents, and teachers in the SDQ

The ANOVA showed statistically significant differences among the three groups in all SDQ subscales, except for Prosocial Behavior (Table 1). In the Conduct Problems, Emotional Symptoms, Hyperactivity, and Total Difficulties subscales, the scores by the students were higher than those given by the parents and teachers, and the parents' scores were in turn higher than those given by the teachers. This means that students had a greater perception of emotional and behavioral difficulties than their parents and teachers. Parents also revealed a greater perception of student difficulties than teachers. It should be noted that the mean students score for Emotional Symptoms (4.14) was slightly above the standard cut-off (>4) and the reference adults, who reported lower scores, failed to detect this malaise. In the Peer Relationship Problems subscale, students also reported higher scores than parents and teachers, indicative of greater discomfort in relationships with peers. In this case, there were no statistically significant differences between the scores of parents and teachers. In



	Students (1) Mean	Parents (2) Mean	Teachers (3) Mean	p Value (post hoc)*	η²
Conduct Problems	2.16	1.64	0.65	<.001 (all compared)	0.14
Emotional Symptoms	4.14	2.76	1.08	<.001 (all compared)	0.24
Hyperactivity/Inattention	3.45	2.34	1.37	<.001 (all compared)	0.14
Peer Relationship Problems	1.87	1.53	1.22	<.001 (1 vs. 2, 3)	0.02
Prosocial Behavior	7.60	7.94	7.65	NS	-
Total Difficulties Score	11.61	8.54	4.37	<.001 (all compared)	0.25

**TABLE 1** Comparison among students, parents, and teachers for the Strengths and Difficulties

 Questionnaire (SDQ).

Abbreviation: NS, not significant.

the Prosocial Behavior subscale, the mean scores of students, parents, and teachers were high and the informants' perceptions are very close, with no differences found among the three groups.

### 3.2 | Differences among students, parents, and teachers in the ASEBA questionnaire

Again, for the ASEBA scales, the ANOVA shows statistically significant differences among the three groups (Table 2). In the Competence Scale, the score of the students was 36.88, which is within the clinical range. This score was lower than that given by parents and teachers. This shows that students had a poorer perception of their functioning with regard to activities, sociality, and scholastic performance than observed by their parents and teachers. Concerning the Activity Scale, a subscale of the Competence Scale, parents' and students' scores fell within the clinical range: the students showed higher mean score than parents (respectively 35.88 vs. 34.22). This difference was statistically significant (U = 32.936, p = .038, Cohen's d = 0.17). With regard to the Sociality Scale, that is also included in the Competence Scale, there were no statistically significant differences between students and their parents. These subscales were only administered to the students and their parents, because the teachers had no knowledge of their students' extracurricular activities. In the Depression Problems, Anxious/Depressed, Attention Problems, Aggressive Behavior, Internalizing, and Total Problems scales, the students showed higher scores than adults (both parents and teachers). In the Withdrawn/Depressed, Anxiety problems, Oppositional Defiant Problems, Thought Problems, Rule breaking Behavior, Somatic Problems, and Somatic Complaints scales, the students showed higher scores than teachers only. It should be noted, however, that the high scores of students were never within the clinical range; only the score for the Anxious/Depressed scale was borderline. It is also interesting to note that the teachers reported higher scores than the parents only in the Depression Problems and Anxious/Depressed scales. This would seem to reflect a greater perception of student malaise (anxiety and depression) by teachers than by parents. In the Attention Deficit/Hyperactivity Problems and Social Problems scales, the students scored lower than parents but higher than teachers. In turn, parents scored higher than teachers, indicative of parents perceiving more hyperactivity and social problems in their children than observed by teachers. For the Conduct Problems and Externalizing scales, students scored lower than teachers, who in turn gave lower scores than parents.

### 3.3 | Differences among students, parents, and teachers in the substance use questions

The results relating to the substances use are shown in Table 3. Substance use was evaluated using three items of the ASEBA. The question on alcohol use was only included in the youth version and parents' version. The questions

TABLE 2         Comparison among students, p.	arents and teachers for the Ac	henbach System of Empirically	/ Based Assessment (ASEBA)	questionnaire.	
	YSR students (1) mean	CBCL parents (2) mean	TRF teachers (3) mean	<i>p</i> Value (post hoc)*	η²
Competence Scale	36.88	49.26	49.17	<.001 (1 vs. 2, 3)	0.36
Depression Problems	59.56	35.38	53.05	<.001 (all compared)	0.58
Anxiety Problems	58.31	57.09	53.92	<.001 (1 vs. 3, 2 vs. 3)	0.06
Somatic Problems	57.0	57.88	51.43	<.001 (1 vs. 3, 2 vs. 3)	0.13
Attention Deficit/Hyperactivity Problems	54.91	56.95	51.98	<.001 (all compared)	0.09
Oppositional Defiant Problems	56.26	55.12	52.09	<.001 (1 vs. 3, 2 vs. 3)	0.08
Conduct Problems	52.64	54.29	51.47	<.001 (1 vs. 2, 2 vs. 3)	0.03
Anxious/Depressed	60.37	52.76	54.44	<.001 (all compared)	0.14
Withdrawn/Depressed	58.70	57.16	53.42	<.001 (1 vs. 3, 2 vs. 3)	0.06
Somatic Complaints	57.05	57.29	51.88	<.001 (1 vs. 3, 2 vs. 3)	0.10
Social Problems	55.97	57.59	52.26	<.001 (all compared)	0.10
Thought Problems	55.38	54.46	50.45	<.001 (1 vs. 3, 2 vs. 3)	0.14
Attention Problems	56.28	54.72	52.07	<.001 (all compared)	0.07
Rule Breaking Behavior	54.52	54.45	52.14	<.001 (1 vs. 3, 2 vs. 3)	0.03
Aggressive Behavior	55.56	53.71	52.50	<.001 (all compared)	0.04
Internalizing	57.21	54.10	48.78	<.001 (all compared)	0.11
Externalizing	47.89	55.38	47.71	<.001 (1 vs. 2, 2 vs. 3)	0.10
Total Problems	54.17	51.83	46.09	<.001 (all compared)	0.09
*Bonferroni correction					

9

	Students (%)	Parents (%)	Teachers (%)	χ²	p Value
Alcohol use				13.704	.001
False	72.5	81.7	-		
Adjusted residuals	-3.6	3.6	-		
Sometimes true	19.7	11.3	-		
Adjusted residuals	2.6	-2.6	-		
Very true	7.4	2.8	-		
Adjusted residuals	2.4	-2.4	-		
Tobacco				31.320	<.001
False	78.2	84.2	93.7		
Adjusted residuals	-5.1	0.7	4.4		
Sometimes true	8.8	4.6	1.4		
Adjusted residuals	3.6	-0.2	-3.4		
Very true	12.7	7.0	4.6		
Adjusted residuals	3.4	-0.6	-2.7		
Other drugs				9.855	.043
False	95.4	95.4	97.5		
Adjusted residuals	-2.7	2.6	0.2		
Sometimes true	2.8	0.0	1.4		
Adjusted residuals	2.4	-2.4	0.0		
Very true	1.4	0.4	0.7		
Adjusted residuals	1.3	-1.0	-0.3		

**TABLE 3**Comparison among students, parents and teachers in the substance use questions derived from theASEBA.

on tobacco and other drugs (e.g., marijuana) were included in the version for all three groups: students, parents, and teachers. The results show that students reported higher frequencies of alcohol use than observed by their parents. For tobacco too, students reported a higher rate of use than their parents and teachers observed. For other drugs, students reported a higher rate of use than their parents and teachers observed, but in this case, the teachers reported a higher rate of use than parents.

### 4 | DISCUSSION

This study examined the perceptions reported by high school students (13–18 years) in Northern Italy and those of their parents and teachers, collected from March 2020 to March 2021, during the COVID-19 pandemic. Data were collected through a web survey during the period when governments imposed measures to contain the spread of the virus, including social isolation and school closures. The literature confirms the importance of assessment from multiple informants who can report on different aspects of children's and adolescents' functioning in different settings, such as home and school (Rescorla et al., 2013, 2014). The differences between parents and teachers

(Dumenci et al., 2011) reports can reflect both differences in how a child behaves at home versus school and differences in how the child is perceived by parents versus teachers (Achenbach, 2019). Some meta-analyses have also revealed important discrepancies between the problems reported by parents, teachers, and children themselves (De Los Reyes et al., 2015).

During the COVID-19 period, Italian studies compared groups of different informants and analyzed the impact of social isolation on behavior (Patrono et al., 2022). Our research was conducted over the same period, and it was analyzed that students perceived greater behavioral and emotional difficulties (assessed using the SDQ) than faced by parents and teachers. These findings suggest that adults fail to fully consider the extent of emotional distress experienced by the youth. In particular, students scored high for emotional symptoms, as indicated in other Italian studies that showed an increase in emotional difficulties during the acute phase of the pandemic (Corvasce et al., 2022; Pisano et al., 2021) with a deterioration of psychological well-being compared with the prepandemic period (Mastorci et al., 2021; Pedrini et al., 2022). Regarding students' behaviors, teachers perceived fewer issues on conduct problems than parents and this is probably because parents experienced greater proximity with their children during the pandemic due to the large amount of time spent indoors during the COVID-19 lockdown. Additionally, the parents' perceptions of youth's behavioral difficulties were also confirmed by international research (Laufer & Bitton, 2023). Teachers also perceived fewer inattention problems among the students than those reported by the same students and their parents. However, given the forced separation from their students, due to distance learning, a proper "learning relationship" was impossible and therefore it could be that they were unable to detect these difficulties in their students. As reported in international studies, the teachers' biggest concern is the lack of direct contact with their pupils (Hatzichristou et al., 2021).

These findings are consistent with the ASEBA results. Student scores on the *Competence Scale* (e.g., scholastic performance) fell within the clinical range, and these data are in line with those previously reported in the literature (Pellegrini & Maltinti, 2020; Tosi & Campi, 2021). Students' scores were lower than those of their parents and teachers, this shows that students have a poorer perception of their current school performance than their parents or teachers. In the extracurricular activity subscale, evaluated only for students and parents, both groups gave scores that fell within the clinical range. This could be explained by the fact that owing to the restrictions imposed under COVID-19, students were unable to participate in extracurricular activities, such as sports, organizations, or clubs, and meeting up with friends. *Social Problems* are therefore, perceived to a greater extent by parents.

Regarding affective disorders (depression and anxiety), the perceptions of parents and teachers did not align with those reported by students, which were higher. Parents' perceptions of their children's levels of depression were much lower than those self-reported by students. On the DSM-Oriented Scales, higher scores for depression, anxiety, and somatic problems, very close to the borderline range, were detected among students. Students' somatic problems are reported more by parents than by teachers, and parents perceive these difficulties more than their children report them. This can be explained by the fact that during the pandemic, students spent a lot of time at home with their parents, and contact with their teachers was only through online classes. The lack of direct contact other than that mediated by technological aid may have prevented teachers from noticing the discomfort of their students. The findings of the present study are consistent with those reported in other studies on the presence of anxiety and depressive symptoms in adolescents locally (Babore et al., 2022), and globally during the COVID-19 pandemic period (Racine et al., 2021; Tang et al., 2021). The results obtained on the DSM-Oriented Scales were consistent with student scores on the Syndrome Scales. On the Anxious/Depressed Scale, the score falls within the borderline range; on the Withdrawn/Depressed Scale and on the Somatic Complaints Scale, the scores are very close to the borderline range. Furthermore, students reported higher scores on the Syndrome Scale, which included internalizing symptoms, than on the Externalizing Scale, which included rule-breaking behavior and aggressive behavior. The lower score obtained on the externalizing scale seems to be consistent with the prosocial behavior subscale score on the SDQ. This means that positive behaviors were also observed and students showed kindness, sharing, and helpfulness towards others. These results align with some data found in the literature that detected an increase in prosocial behavior in young people during the pandemic (Daniunaite et al., 2021; van de Groep

et al., 2020). Although adults do not always identify areas of symptomatic risk, they agree with students on their degree of resilience, such as prosocial behaviors, which could be important in protecting against the development of psychological disorders.

The important findings of our study are related to substance use and data confirmed by studies conducted during the lockdown (Biagioni et al., 2023). Significant differences emerged among the three groups of participants (students, teachers, and parents) regarding substance use. Parents reported less alcohol, tobacco, and other drug use than what their children reported. Teachers perceived an even lower use of psychoactive substances by their students than their parents had thought. Neither adult figures adequately reported important data on substance use in their children or students. Therefore, these data need to be carefully monitored in the future to avoid the risk of self-addiction among young people.

### 4.1 | Limitation, future directions of the study, and practical implications

A limitation of this study is that there are no similar samples evaluated before the COVID-19 pandemic for comparisons with the prepandemic period. This study was not conceived with the intention of collecting and evaluating data on the effects of COVID-19 on students, but the sample recruitment was conducted during the pandemic, which was a sudden and unexpected health emergency. The study design did not have pandemic-specific measures to detect the effects of COVID-19. However, the present study found data on students' malaise during this complex pandemic period, although we cannot conclude that the differences identified are pandemic related. This study could benefit from future analysis of further data collected on the postpandemic period to assess whether the results we obtained are due to the impact of the pandemic or not.

One possible route could be to assess the negative influence of the COVID-19 pandemic on a variety of population groups, including parents and teachers. Here, we point out that, in this study, we did not collect direct data on parents and teacher health and on illnesses suffered in the pandemic period, but recent international research has reported a negative impact of this emergency also on these populations (Fosco et al., 2022; Roos et al., 2021; Russell et al., 2020). Penner et al. (2022) found a positive association between COVID-19 stressors and parental depression/anxiety symptoms: this combination of high COVID-19 stressors and greater depression/ anxiety in parents may have led to a greater frequency of negative parenting (poor supervision, hostility). International literature includes research that shows how the COVID-19 pandemic also impacted teachers' mental health (Lizana & Lera, 2022), especially those who already had physical and mental health problems prepandemic, higher levels of negative affect and worry and poor life satisfaction, and resilience (Lacomba-Trejo et al., 2022). A recent meta-analysis that included 54 studies in 22 countries showed a higher prevalence of stress (62.6%), compared with anxiety (36.3%) and depression (59.9%) among teachers (Ma et al., 2022). If parents or teachers, adult figures close to students, suffered during the pandemic emergency situation, it is likely that their emotional resources were weaker and depleted and, consequently, they were less focused on their children and students. This is very significant since the relational contexts of young people (family, friends, and school) assume particular importance as protective factors in their development (Rufo et al., 2011). Further research is needed to investigate concordances and divergences among students, parents, and teachers to understand the role played by other variables in the ability of adults to detect socio-emotional, cognitive, and behavioral problems among students.

Practical implications can be derived from these results. First, the data obtained could help governments decide on the confinement rules to apply to students to preserve their mental health. Second, our results could guide adult figures such as parents and teachers to recognize and be alert of the most common psychological responses of young people to traumatic situations such as the pandemic. This could allow early detection when there is a need for intervention. Vulnerable students, including those with risk factors, should receive special attention. Providing parents and teachers with training to detect psychological problems in children and adolescents should be the primary focus of pediatric healthcare professionals. In addition, programs focused on providing students with

13

psychosocial skills could be implemented in schools to help them cope with stressful situations such as the COVID-19 pandemic. Nevertheless, the implications formulated require confirmation in future studies.

### 5 | CONCLUSION

The data collected in our study highlight the vulnerability of students' mental health in terms of affective disorders (anxiety and depression) and the presence of substance use (alcohol, tobacco, and drugs), as well as emotional and academic performance difficulties, with respect to the perception of their teachers and parents. These caregivers had difficulty identifying distressing situations that needed to be referred to competent health services and healthcare professionals. Other difficulties have been reported in extracurricular activities and sociality; however, positive factors can be identified in some prosocial behaviors detected in students. These positive factors need to be increased for recovery, and may be important for protection against the development of psychological disorders.

The findings of this study could serve to develop training initiatives to improve teachers' perceptions of their students and parents' perceptions of their children for the promotion of well-being and the prevention of early school dropout, self-addiction, and psychopathological risks in students.

### AUTHOR CONTRIBUTIONS

Loredana Cena conceived the study design. Material preparation and data collection were performed by Sara Zecca, Sofia Bonetti Zappa, Alice Trainini, and Federica Cunegatti. Chiara Buizza designed the statistical analysis plan and conducted the data elaboration. The manuscript was written, reviewed, and edited by Loredana Cena, Alice Trainini and Chiara Buizza. All authors read and approved the final manuscript.

#### ACKNOWLEDGMENTS

The authors would like to thank all the students, parents, teachers who participated in the study, and principals who authorized the development of the study in first- and second-grade secondary schools. The authors also thank the Ufficio scolastico regionale per la Lombardia Ufficio IV Ambito Territoriale di Brescia and the Osservatorio Provinciale del contrasto alle ludopatie e al gioco d'azzardo di Brescia. This work was funded by the Department of Clinical and Experimental Sciences, University of Brescia, Italy.

#### CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

#### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author, upon reasonable request.

#### ETHICS STATEMENT

The study was approved by the Ethics Committee of the ASST Spedali Civili Brescia (ethical number: NP3862). The study was performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments. Participants were informed that their participation was confidential, anonymous, not compulsory, and that their personal data would be respected.

#### ORCID

Loredana Cena https://orcid.org/0000-0002-3162-9237 Alice Trainini https://orcid.org/0000-0002-8361-5873 Sara Zecca https://orcid.org/0000-0002-3072-0143 Sofia Bonetti Zappa D https://orcid.org/0000-0003-4357-7961 Chiara Buizza D https://orcid.org/0000-0002-3339-3539

#### REFERENCES

- Abudaqa, A., Hilmi, M. F., AlMujaini, H., Alzahmi, R. A., & Ahmed, G. (2021). Students' perception of e-learning during the covid pandemic: A fresh evidence from United Arab Emirates (UAE). *Journal of E-Learning and Knowledge Society*, 17(3), 110–118. https://doi.org/10.20368/1971-8829/1135556
- Achenbach, T. M. (2001). ASEBA; Achenbach system of empirically based assessment: School age forms and profiles, child behavior checklist for ages 6-18.
- Achenbach, T. M. (2015). Multicultural evidence-based assessment using the Achenbach System of Empirically Based Assessment (ASEBA) for ages 1½-90+. Psychologia, 9(2), 13–23.
- Achenbach, T. M. (2019). International findings with the Achenbach System of Empirically Based Assessment (ASEBA): Applications to clinical services, research, and training. *Child and Adolescent Psychiatry and Mental Health*, 13, 30. https://doi.org/10.1186/s13034-019-0291-2
- Achenbach, T. M., Krukowski, R. A., Dumenci, L., & Ivanova, M. Y. (2005). Assessment of adult psychopathology: Metaanalyses and implications of cross-informant correlations. *Psychological Bulletin*, 131, 361–382.
- Achenbach, T. M., McConaughy, S. H., & Howell, C. T. (1987). Child/adolescent behavioral and emotional problems: Implications of cross-informant correlations for situational specificity. *Psychological Bulletin*, 101(2), 213–232. https:// doi.org/10.1037/0033-2909.101.2.213
- Acuti Martellucci, C., Martellucci, M., Flacco, M., & Manzoli, L. (2021). Trends in alcohol consumption during COVID-19 lockdowns: Systematic review. European Journal of Public Health, 31(3). https://doi.org/10.1093/eurpub/ckab165.133
- Andrejko, K. L., Head, J. R., Lewnard, J. A., & Remais, J. V. (2022). Longitudinal social contacts among school-aged children during the COVID-19 pandemic: The Bay Area Contacts among Kids (BACK) study. BMC Infectious Diseases, 22, 242. https://doi.org/10.1186/s12879-022-07218-4
- Andrés, M. L., Galli, J. I., del Valle, M., Vernucci, S., López-Morales, H., Gelpi-Trudo, R., & Canet-Juric, L. (2022). Parental perceptions of child and adolescent mental health during the COVID-19 pandemic in Argentina. *Child & Youth Care Forum*, 51, 1195–1225. https://doi.org/10.1007/s10566-021-09663-9
- António, R., Guerra, R., & Moleiro, C. (2023). Cyberbullying during COVID-19 lockdowns: Prevalence, predictors, and outcomes for youth. Current Psychology, 18, 1–17. https://doi.org/10.1007/s12144-023-04394-7
- Babore, A., Morelli, M., & Trumello, C. (2022). Italian adolescents' adjustment before and during the coronavirus disease 2019: A comparison between mothers' and adolescents' perception. *The British Journal of Clinical Psychology*, 61(2), 281–286. https://doi.org/10.1111/bjc.12334
- Bartel, S. J., Sherry, S. B., & Stewart, S. H. (2020). Self-isolation: A significant contributor to cannabis use during the COVID-19 pandemic. Substance Abuse, 41(4), 409–412. https://doi.org/10.1080/08897077.2020.1823550
- Bera, L., Souchon, M., Ladsous, A., Colin, V., & Lopez-Castroman, J. (2022). Emotional and behavioral impact of the COVID-19 epidemic in adolescents. *Current Psychiatry Reports*, 24, 37–46. https://doi.org/10.1007/s11920-022-01313-8
- Bhatnagar, R., & Many, J. (2022). Teachers using social emotional learning: Meeting student needs during COVID-19. International Journal of Technology in Education, 5(3), 518–534.
- Biagioni, S., Baldini, F., Baroni, M., Cerrai, S., Melis, F., Potente, R., Scalese, M., & Molinaro, S. (2023). Adolescents' psychoactive substance use during the first COVID-19 lockdown: A cross sectional study in Italy. *Child & Youth Care Forum*, 52, 641–659. https://doi.org/10.1007/s10566-022-09701-0
- Bosch, R., Pagerols, M., Prat, R., Español-Martín, G., Rivas, C., Dolz, M., Haro, J. M., Ramos-Quiroga, J. A., Ribasés, M., & Casas, M. (2022). Changes in the mental health of children and adolescents during the COVID-19 lockdown: Associated factors and life conditions. *International Journal of Environmental Research and Public Health*, 19(7), 4120. https://doi.org/10.3390/ijerph19074120
- Brener, N. D., Bohm, M. K., Jones, C. M., Puvanesarajah, S., Robin, L., Suarez, N., Deng, X., Harding, R. L., & Moyse, D. (2022). Use of tobacco products, alcohol, and other substances among high school students during the COVID-19 pandemic—Adolescent behaviors and experiences survey, United States, January–June 2021. MMWR Supplements, 71(3), 8–15. https://doi.org/10.15585/mmwr.su7103a2
- Brenne, E., & Rimehaug, T. (2019). Pragmatic language impairment general and specific associations to mental health symptom dimensions in a child psychiatric sample. Scandinavian Journal of Child and Adolescent Psychiatry and Psychology, 7, 3–12. https://doi.org/10.21307/sjcapp-2019-001
- 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

- Buonsenso, D., Roland, D., De Rose, C., Vásquez-Hoyos, P., Ramly, B., Chakakala-Chaziya, J. N., Munro, A., & González-Dambrauskas, S. (2021). Schools closures during the COVID-19 pandemic: A catastrophic global situation. *Pediatric Infectious Disease Journal*, 40(4), e146–e150. https://doi.org/10.1097/INF.000000000003052
- Cancello, R., Soranna, D., Zambra, G., Zambon, A., & Invitti, C. (2020). Determinants of the lifestyle changes during COVID-19 pandemic in the residents of Northern Italy. *International Journal of Environmental Research and Public Health*, 17(17), 6287. https://doi.org/10.3390/ijerph17176287
- Cao, C., Wang, L., Fang, R., Liu, P., Bi, Y., Luo, S., Grace, E., & Olff, 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
- Cauberghe, V., Van Wesenbeeck, I., De Jans, S., Hudders, L., & Ponnet, K. (2021). How adolescents use social media to cope with feelings of loneliness and anxiety during COVID-19 lockdown. *Cyberpsychology, Behavior and Social Networking*, 24(4), 250–257. https://doi.org/10.1089/cyber.2020.0478
- Cena, L., Rota, M., Calza, S., Trainini, A., Zecca, S., Zappa, S. B., Nodari, L. S., & Stefana, A. (2022). Prevalence and types of video gaming and gambling activities among adolescent public school students: Findings from a cross-sectional study in Italy. *Italian Journal of Pediatrics*, 48, 108. https://doi.org/10.1186/s13052-022-01299-2
- Cena, L., Rota, M., Trainini, A., Zecca, S., Bonetti Zappa, S., Tralli, N., & Stefana, A. (2022). Investigating adolescents' video gaming and gambling activities, and their relationship with behavioral, emotional, and social difficulties: Protocol for a multi-informant study. JMIR Research Protocols, 11(2), 33376. https://doi.org/10.2196/33376
- Cena, L., Trainini, A., Zecca, S., Bonetti Zappa, S., Cunegatti, F., & Buizza, C. (2023). Loneliness, affective disorders, suicidal ideation, and the use of psychoactive substances in a sample of adolescents during the COVID-19 pandemic: A crosssectional study. *Journal of Child and Adolescent Psychiatric Nursing*, 8. https://doi.org/10.1111/jcap.12412
- Chaiton, M., Dubray, J., Kundu, A., & Schwartz, R. (2022). Perceived impact of COVID on smoking, vaping, alcohol and cannabis use among youth and youth adults in Canada. *The Canadian Journal of Psychiatry*, 67(5), 407–409. https:// doi.org/10.1177/07067437211042132
- Close, J., Spicer, S. G., Nicklin, L. L., Lloyd, J., Whalley, B., & Lloyd, H. (2022). Gambling and gaming in the United Kingdom during the COVID-19 lockdown. COVID, 2(2), 87–101. https://doi.org/10.3390/covid2020007
- Corvasce, C., Martínez-Ramón, J. P., Méndez, I., Ruiz-Esteban, C., Morales-Rodríguez, F. M., & García-Manrubia, M. B. (2022). Emotional strengths and difficulties in Italian adolescents: Analysis of adaptation through the SDQ. *Sustainability*, 14, 6167. https://doi.org/10.3390/su14106167
- Cowie, H., & Myers, C. A. (2021). The impact of the COVID-19 pandemic on the mental health and well-being of children and young people. *Children & Society*, 35(1), 62–74. https://doi.org/10.1111/chso.12430
- Danese, A., Smith, P., Chitsabesan, P., & Dubicka, B. (2020). Child and adolescent mental health amidst emergencies and disasters. The British Journal of Psychiatry, 216, 159–162. https://doi.org/10.1192/bjp.2019.244
- Daniunaite, I., Truskauskaite-Kuneviciene, I., Thoresen, S., Zelviene, P., & Kazlauskas, E. (2021). Adolescents amid the COVID-19 pandemic: A prospective study of psychological functioning. *Child and Adolescent Psychiatry and Mental Health*, 15, 45. https://doi.org/10.1186/s13034-021-00397-z
- Dias, P., Veríssimo, L., Carneiro, A., & Figueiredo, B. (2022). Academic achievement and emotional and behavioural problems: The moderating role of gender. *Clinical Child Psychology and Psychiatry*, 27(4), 1184–1196. https://doi.org/ 10.1177/13591045211059410
- Dumenci, L., Achenbach, T. M., & Windle, M. (2011). Measuring context-specific and cross-contextual components of hierarchical constructs. *Journal of Psychopathology and Behavioral Assessment*, 33(1), 3–10. https://doi.org/10.1007/ s10862-010-9187-4
- Engzell, P., Frey, A., & Verhagen, M. D. (2021). Learning loss due to school closures during the COVID-19 pandemic. Proceedings of the National Academy of Sciences USA, 118, e2022376118. https://doi.org/10.1073/pnas.2022376118
- Esposito, S., Giannitto, N., Squarcia, A., Neglia, C., Argentiero, A., Minichetti, P., Cotugno, N., & Principi, N. (2021). Development of psychological problems among adolescents during school closures because of the COVID-19 lockdown phase in Italy: A cross-sectional survey. Frontiers in Pediatrics, 8, 628072. https://doi.org/10.3389/fped.2020.628072
- Fegert, J. M., Vitiello, B., Plener, P. L., & Clemens, V. (2020). Challenges and burden of the coronavirus 2019 (COVID-19) pandemic for child and adolescent mental health: A narrative review to highlight clinical and research needs in the acute phase and the long return to normality. *Child and Adolescent Psychiatry and Mental Health*, 14(1), 20. https://doi.org/10.1186/s13034-020-00329-3
- Fosco, G. M., Sloan, C. J., Fang, S., & Feinberg, M. E. (2022). Family vulnerability and disruption during the COVID-19 pandemic: Prospective pathways to child maladjustment. *Journal of Child Psychology and Psychiatry*, 63(1), 47–57. https://doi.org/10.1111/jcpp.13458
- Frigerio, A., Cattaneo, C., Cataldo, M., Schiatti, A., Molteni, M., & Battaglia, M. (2004). Behavioral and emotional problems among Italian children and adolescents aged 4 to 18 years as reported by parents and teachers. *European Journal of Psychological Assessment*, 20(2), 124–133. https://doi.org/10.1027/1015-5759.20.2.124

- Gabbrielli, F., Capello, F., Tozzi, A. E., Rabbone, I., Caruso, M., Garioni, M., & Scarpa, M. (2022). Indicazioni ad interim per servizi sanitari di telemedicina in pediatria durante e oltre la pandemia COVID-19 (Rapporto ISS COVID-19 n. 60/2020). Istituto Superiore di Sanita. https://www.iss.it/documents/20126/0/Rapporto+ISS+COVID-19+60\_2020.pdf/ 6b4dfc13-fc37-fadd-3388-b93aef43a15d?t=1602857089054
- De Giacomo, A., Lamanna, A. L., Craig, F., Santoro, N., Goffredo, S., & Cecinati, V. (2012). The SDQ in Italian clinical practice: Evaluation between three outpatient groups compared. *Rivista di Psichiatria*, 47(5), 400-406. https://doi.org/10. 1708/1175.13030
- Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, 38(5), 581–586. https://doi.org/10.1111/j.1469-7610.1997.tb01545.x
- van de Groep, S., Zanolie, K., Green, K. H., Sweijen, S. W., & Crone, E. A. (2020). A daily diary study on adolescents' mood, empathy, and prosocial behavior during the COVID-19 pandemic. PLoS One, 15(10), e0240349. https://doi.org/10. 1371/journal.pone.0240349
- Hammerstein, S., König, C., Dreisörner, T., & Frey, A. (2021). Effects of COVID-19-related school closures on student achievement—A systematic review. Frontiers in Psychology, 12, 746289. https://doi.org/10.3389/fpsyg.2021.746289
- Hatzichristou, C., Georgakakou-Koutsonikou, N., Lianos, P., Lampropoulou, A., & Yfanti, T. (2021). Assessing school community needs during the initial outbreak of the COVID-19 pandemic: Teacher, parent and student perceptions. *School Psychology International*, 42(6), 590–615.
- Imran, N., Aamer, I., Sharif, M. I., Bodla, Z. H., & Naveed, S. (2020). Psychological burden of quarantine in children and adolescents: A rapid systematic review and proposed solutions. *Pakistan Journal of Medical Sciences*, 36(5), 1106–1116. https://doi.org/10.12669/pjms.36.5.3088
- Indredavik, M. S., Vik, T., Heyerdahl, S., Kulseng, S., & Brubakk, A. M. (2005). Psychiatric symptoms in low birth weight adolescents, assessed by screening questionnaires. *European Child & Adolescent Psychiatry*, 14(4), 226–236. https:// doi.org/10.1007/s00787-005-0459-6
- Iwai, Y. (2020). Online learning during the COVID-19 pandemic. https://blogs.scientificamerican.com/observations/onlinelearning-during-the-covid-19-pandemic/
- Jones, K., Mallon, S., & Schnitzler, K. (2023). A scoping review of the psychological and emotional impact of the COVID-19 pandemic on children and young people. *Illness, Crises, and Loss,* 31(1), 175–199. https://doi.org/10.1177/ 10541373211047191
- Katona, Z. B., Takács, J., Kerner, L., Alföldi, Z., Soós, I., Gyömörei, T., Podstawski, R., & Ihász, F. (2021). Physical activity and screen time among Hungarian High School students during the COVID-19 pandemic caused distance education period. International Journal of Environmental Research and Public Health, 18(24), 13024. https://doi.org/10.3390/ ijerph182413024
- El Keshky, M. E. S., Alsabban, A. M., & Basyouni, S. S. (2021). The psychological and social impacts on personal stress for residents quarantined for COVID-19 in Saudi Arabia. Archives of Psychiatric Nursing, 35(3), 311–316. https://doi.org/ 10.1016/j.apnu.2020.09.008
- Krause, K. H., Verlenden, J. V., Szucs, L. E., Swedo, E. A., Merlo, C. L., Niolon, P. H., Leroy, Z. C., Sims, V. M., Deng, X., Lee, S., Rasberry, C. N., & Underwood, J. M. (2022). Disruptions to school and home life among high school students during the COVID-19 pandemic-adolescent behaviors and experiences survey, United States, January–June 2021. MMWR Supplements, 71(3), 28–34. https://doi.org/10.15585/mmwr.su7103a5
- Lacomba-Trejo, L., Schoeps, K., Valero-Moreno, S., Del Rosario, C., & Montoya-Castilla, I. (2022). Teachers' response to stress, anxiety and depression during COVID-19 lockdown: What have we learned from the pandemic? *Journal of School Health*, 92, 864–872. https://doi.org/10.1111/josh.13192
- Laufer, A., & Bitton, M. S. (2023). Parents' perceptions of children's behavioral difficulties and the parent-child interaction during the COVID-19 lockdown. *Journal of Family Issues*, 44(3), 725–744. https://doi.org/10.1177/019251 3X211054460
- Layman, H. M., Thorisdottir, I. E., Halldorsdottir, T., Sigfusdottir, I. D., Allegrante, J. P., & Kristjansson, A. L. (2022). Substance use among youth during the COVID-19 pandemic: A systematic review. *Current Psychiatry Reports*, 24, 307–324. https://doi.org/10.1007/s11920-022-01338-z
- Li, X., Tang, X., Wu, H., Sun, P., Wang, M., & Li, L. (2021). COVID-19-Related stressors and Chinese adolescents' adjustment: The moderating role of coping and online learning satisfaction. *Frontiers in Psychiatry*, 12, 633523. https://doi.org/10. 3389/fpsyt.2021.633523
- Lin, M. P. (2020). Prevalence of Internet addiction during the COVID-19 outbreak and its risk factors among junior high school students in Taiwan. International Journal of Environmental Research and Public Health, 17(22), 8547. https://doi. org/10.3390/ijerph17228547
- Liu, Y., Yue, S., Hu, X., Zhu, J., Wu, Z., Wang, J., & Wu, Y. (2021). Associations between feelings/behaviors during COVID-19 pandemic lockdown and depression/anxiety after lockdown in a sample of Chinese children and adolescents. *Journal* of Affective Disorders, 284, 98–103. https://doi.org/10.1016/j.jad.2021.02.001

- Lizana, P. A., & Lera, L. (2022). Depression, anxiety, and stress among teachers during the second COVID-19 wave. International Journal of Environmental Research and Public Health, 19(10), 5968. https://doi.org/10.3390/ijerph19105968
- Loades, M. E., Chatburn, E., Higson-Sweeney, N., Reynolds, S., Shafran, R., Brigden, A., Linney, C., McManus, M. N., Borwick, C., & Crawley, E. (2020). Rapid systematic review: The impact of social isolation and loneliness on the mental health of children and adolescents in the context of COVID-19. *Journal of the American Academy of Child & Adolescent Psychiatry*, 59(11), 1218–1239. https://doi.org/10.1016/j.jaac.2020.05.009
- De Los Reyes, A., Augenstein, T. M., Wang, M., Thomas, S. A., Drabick, D. A. G., Burgers, D. E., & Rabinowitz, J. (2015). The validity of the multi-informant approach to assessing child and adolescent mental health. *Psychological Bulletin*, 141(4), 858–900. https://doi.org/10.1037/a0038498
- Ma, K., Liang, L., Chutiyami, M., Nicoll, S., Khaerudin, T., & Ha, X. V. (2022). COVID-19 pandemic-related anxiety, stress, and depression among teachers: A systematic review and meta-analysis. Work, 73, 3–27. https://doi.org/10.3233/WOR-220062
- Martinsone, B., Stokenberga, I., Damberga, I., Supe, I., Simões, C., Lebre, P., Canha, L., Santos, M., Santos, A. C., Fonseca, A. M., Santos, D., Gaspar de Matos, M., Conte, E., Agliati, A., Cavioni, V., Gandellini, S., Grazzani, I., Ornaghi, V., & Camilleri, L. (2022). Adolescent social emotional skills, resilience and behavioral problems during the COVID-19 pandemic: A longitudinal study in three European countries. *Frontiers in Psychiatry*, 13, 942692. https:// doi.org/10.3389/fpsyt.2022.942692
- Mastorci, F., Piaggi, P., Doveri, C., Trivellini, G., Casu, A., Pozzi, M., Vassalle, C., & Pingitore, A. (2021). Health-related quality of life in Italian adolescents during Covid-19 outbreak. *Frontiers in Pediatrics*, 9(9), 611136. https://doi.org/10.3389/ fped.2021.611136
- Meda, N., Pardini, S., Slongo, I., Bodini, L., Zordan, M. A., Rigobello, P., Visioli, F., & Novara, C. (2021). Students' mental health problems before, during, and after COVID-19 lockdown in Italy. *Journal of Psychiatric Research*, 134, 69–77. https://doi.org/10.1016/j.jpsychires.2020.12.045
- Mensi, M. M., Capone, L., Rogantini, C., Orlandi, M., Ballante, E., & Borgatti, R. (2021). COVID-19-related psychiatric impact on Italian adolescent population: A cross-sectional cohort study. *Journal of Community Psychology*, 49(5), 1457–1469. https://doi.org/10.1002/jcop.22563
- Van Meter, A. R., Algorta, G. P., Youngstrom, E. A., Lechtman, Y., Youngstrom, J. K., Feeny, N. C., & Findling, R. L. (2018). Assessing for suicidal behavior in youth using the Achenbach System of Empirically Based Assessment. *European Child* & Adolescent Psychiatry, 27(2), 159–169. https://doi.org/10.1007/s00787-017-1030-y
- Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnytsky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior*, 61, 20–52. https://doi.org/10.1006/jvbe.2001.1842
- Nathwani, G., Shoaib, A., Shafi, A., Furukawa, T. A., & Huy, N. T. (2021). Impact of COVID-2019 on school attendance problems. *Journal of Global Health*, 11, 03084. https://doi.org/10.7189/jogh.11.03084
- Nearchou, F., Flinn, C., Niland, R., Subramaniam, S. S., & Hennessy, E. (2020). Exploring the impact of COVID-19 on mental health outcomes in children and adolescents: A systematic review. *International Journal of Environmental Research and Public Health*, 17, 8479. https://doi.org/10.3390/ijerph17228479
- Niemi, H. M., & Kousa, P. (2020). A case study of students' and teachers' perceptions in a Finnish high school during the COVID pandemic. International Journal of Technology in Education and Science, 4(4), 352–369.
- Nilsson, A., Rosendahl, I., & Jayaram-Lindström, N. (2022). Gaming and social media use among adolescents in the midst of the COVID-19 pandemic. Nordic Studies on Alcohol and Drugs, 39, 347–361. https://doi.org/10.1177/145507252 21074997
- Oberle, E., Ji, X. R., Kerai, S., Guhn, M., Schonert-Reichl, K. A., & Gadermann, A. M. (2020). Screen time and extracurricular activities as risk and protective factors for mental health in adolescence: A population-level study. *Preventive Medicine*, 141, 106291. https://doi.org/10.1016/j.ypmed.2020.106291
- Orgilés, M., Morales, A., Delvecchio, E., Mazzeschi, C., & Espada, J. P. (2020). Immediate psychological effects of the COVID-19 quarantine in youth from Italy and Spain. *Frontiers in Psychology*, 11, 579038. https://doi.org/10.3389/ fpsyg.2020.579038
- Pace, C. S., & Muzi, S. (2019). Binge-Eating symptoms, emotional-behavioral problems and gender differences among adolescents: A brief report. Mediterranean Journal of Clinical Psychology, 7(2). https://doi.org/10.6092/2282-1619/2019.7.2161
- Panagouli, E., Stavridou, A., Savvidi, C., Kourti, A., Psaltopoulou, T., Sergentanis, T. N., & Tsitsika, A. (2021). School performance among children and adolescents during COVID-19 pandemic: A systematic review. *Children*, 8, 1134. https://doi.org/10.3390/children8121134
- 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

- Patrono, A., Invernizzi, A., Placidi, D., Cagna, G., Calza, S., Oppini, M., Rechtman, E., Papazaharias, D. M., Reichenberg, A., Lucchini, R. G., Memo, M., Ongaro, E., Rota, M., Wright, R. O., Renzetti, S., & Horton, M. K. (2022). Impact of COVID-19-related social isolation on behavioral outcomes in young adults residing in Northern Italy. *International Journal of Environmental Research and Public Health*, 19(24), 16496. https://doi.org/10.3390/ijerph192416496
- Pealer, L., & Weiler, R. M. (2003). Guidelines for designing a web-delivered college health risk behavior survey: Lessons learned from the University of Florida Health Behavior Survey. *Health Promotion Practice*, 4(2), 171–179. https://doi. org/10.1177/1524839902250772
- Pedrini, L., Meloni, S., Lanfredi, M., Ferrari, C., Geviti, A., Cattaneo, A., & Rossi, R. (2022). Adolescents' mental health and maladaptive behaviors before the Covid-19 pandemic and 1-year after: Analysis of trajectories over time and associated factors. *Child and Adolescent Psychiatry and Mental Health*, 16(42), 42. https://doi.org/10.1186/s13034-022-00474-x
- Pellegrini, M., & Maltinti, C. (2020). 'School never stops': Measures and experience in Italian schools during the COVID-19 lockdown. Best Evidence of Chinese Education, 5(2), 649–663. https://ssrn.com/abstract=3652601
- Penner, F., Elzaki, Y., Contreras, H. T., Santos, R. P., & Sarver, D. E. (2022). Behavioral, affective, and cognitive parenting mechanisms of child internalizing and externalizing problems during the COVID-19 pandemic. *Research on Child and Adolescent Psychopathology*, 50, 1121–1138. https://doi.org/10.1007/s10802-022-00920-6
- Peterle, C. F., Fonseca, C. L., Freitas, B. H. B. M., Gaíva, M. A. M., Diogo, P. M. J., & Bortolini, J. (2022). Emotional and behavioral problems in adolescents in the context of COVID-19: A mixed method study. *Revista Latino-Americana de Enfermagem*, 30(spe), e3744. https://doi.org/10.1590/1518-8345.6273.3744
- Pisano, S., Catone, G., Gritti, A., Almerico, L., Pezzella, A., Santangelo, P., Bravaccio, C., Iuliano, R., & Senese, V. P. (2021). Emotional symptoms and their related factors in adolescents during the acute phase of Covid-19 outbreak in South Italy. *Italian Journal of Pediatrics*, 47, 86. https://doi.org/10.1186/s13052-021-01036-1
- Poll, H. (2020). Stress in America<sup>™</sup> 2020: Stress in the time of COVID-19 (Volume One). American Psychological Association. https://www.apa.org/news/press/releases/stress/2020/stress-in-america-covid.pdf
- Povero, M., Turco, P., & Dal Negro, R. W. (2022). The emotional response to pandemic of middle and high-school students of an Italian Northern province: The ERP study. *Children*, 9, 59. https://doi.org/10.3390/children9010059
- Racine, N., McArthur, B. A., Cooke, J. E., Eirich, R., Zhu, J., & Madigan, S. (2021). Global prevalence of depressive and anxiety symptoms in children and adolescents during COVID-19: A meta-analysis. JAMA Pediatrics, 175(11), 1142–1150. https://doi.org/10.1001/jamapediatrics.2021.2482
- Radwan, E., Radwan, A., Radwan, W., & Pandey, D. (2021). Prevalence of depression, anxiety and stress during the COVID-19 pandemic: A cross-sectional study among Palestinian students (10-18 years). BMC Psychology, 9(1), 187. https://doi.org/10.1186/s40359-021-00688-2
- Raiker, J. S., Freeman, A. J., Perez-Algorta, G., Frazier, T. W., Findling, R. L., & Youngstrom, E. A. (2017). Accuracy of Achenbach scales in the screening of attention-deficit/hyperactivity disorder in a community mental health clinic. Journal of the American Academy of Child & Adolescent Psychiatry, 56(5), 401–409. https://doi.org/10.1016/j.jaac. 2017.02.007
- Rescorla, L. A., Bochicchio, L., Achenbach, T. M., Ivanova, M. Y., Almqvist, F., Begovac, I., Bilenberg, N., Bird, H., Dobrean, A., Erol, N., Fombonne, E., Fonseca, A., Frigerio, A., Fung, D. S., Lambert, M. C., Leung, P. W., Liu, X., Marković, I., Markovic, J., ... Verhulst, F. C. (2014). Parent-teacher agreement on children's problems in 21 societies. Journal of Clinical Child and Adolescent Psychology: The Official Journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53, 43, 627–642. https://doi.org/10.1080/15374416.2014.900719
- Rescorla, L. A., Ginzburg, S., Achenbach, T. M., Ivanova, M. Y., Almqvist, F., Begovac, I., Bilenberg, N., Bird, H., Chahed, M., Dobrean, A., Döpfner, M., Erol, N., Hannesdottir, H., Kanbayashi, Y., Lambert, M. C., Leung, P. W., Minaei, A., Novik, T. S., Oh, K. J., ... Verhulst, F. C. (2013). Cross-informant agreement between parent-reported and adolescent self-reported problems in 25 societies. *Journal of Clinical Child and Adolescent Psychology: The Official Journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53, 42, 262–273.* https://doi.org/10.1080/15374416.2012.717870
- Roos, L. E., Salisbury, M., Penner-Goeke, L., Cameron, E. E., Protudjer, J. L. P., Giuliano, R., Afifi, T. O., & Reynolds, K. (2021). Supporting families to protect child health: Parenting quality and household needs during the COVID-19 pandemic. *PLoS One*, 16(5), e0251720. https://doi.org/10.1371/journal.pone.0251720
- Rufo, C., Carpinelli, L., Cerino, M., De Filippo, V., Silvestri, D., & Pagano, A. M. (2011). Emozioni e relazioni in adolescenza. Modelli per la mente, IV(2-3), 37-41.
- Russell, B. S., Hutchison, M., Tambling, R., Tomkunas, A. J., & Horton, A. L. (2020). Initial challenges of caregiving during COVID-19: Caregiver burden, mental health, and the parent-child relationship. *Child Psychiatry and Human Development*, 51(5), 671–682. https://doi.org/10.1007/s10578-020-01037-x
- Salbach-Andrae, H., Lenz, K., & Lehmkuhl, U. (2009). Patterns of agreement among parent, teacher and youth ratings in a referred sample. *European Psychiatry*, 24(5), 345–351. https://doi.org/10.1016/j.eurpsy.2008.07.008

- Sen, L. T., Siste, K., Hanafi, E., Murtani, B. J., Christian, H., Limawan, A. P., Adrian, L. P., & Siswidiani, L. P. (2021). Insights into adolescents' substance use in a low-middle-income country during the COVID-19 pandemic. *Frontiers in Psychiatry*, 12, 739698. https://doi.org/10.3389/fpsyt.2021.739698
- Senft, B., Liebhauser, A., Tremschnig, I., Ferijanz, E., & Wladika, W. (2022). Effects of the COVID-19 pandemic on children and adolescents from the perspective of teachers. *Frontiers in Education*, 7, 808015. https://doi.org/10.3389/feduc. 2022.808015
- Serra, G., Lo Scalzo, L., Giuffrè, M., Ferrara, P., & Corsello, G. (2021). Smartphone use and addiction during the coronavirus disease 2019 (COVID-19) pandemic: Cohort study on 184 Italian children and adolescents. *Italian Journal of Pediatrics*, 47(1), 150. https://doi.org/10.1186/s13052-021-01102-8
- Sidor, A., & Rzymski, P. (2020). Dietary choices and habits during COVID-19 lockdown: Experience from Poland. Nutrients, 12(6), 1657. https://doi.org/10.3390/nu12061657
- Sievertsen, H. H., & Burgess, S. (2020). Schools, skills, and learning: The impact of COVID-19 on education. VoxEU. https:// voxeu.org/article/impact-covid-19-education
- Simoës-Perlant, A., Barreau, M., & Vezilier, C. (2022). Stress, anxiety, and school burnout post COVID-19: A study of French adolescents. Mind, Brain, and Education. https://doi.org/10.1111/mbe.12346
- Smirni, P., Lavanco, G., & Smirni, D. (2020). Anxiety in older adolescents at the time of COVID-19. Journal of Clinical Medicine, 9(10), 3064. https://doi.org/10.3390/jcm9103064
- Tang, S., Xiang, M., Cheung, T., & Xiang, Y. T. (2021). Mental health and its correlates among children and adolescents during COVID-19 school closure: The importance of parent-child discussion. *Journal of Affective Disorders*, 279, 353–360. https://doi.org/10.1016/j.jad.2020.10.016
- Tobia, V., Gabriele, M. A., & Marzocchi, G. M. (2011). Norme italiane dello strengths and difficulties questionnaire (SDQ): Il comportamento dei bambini italiani valutato dai loro insegnanti. *Disturbi di attenzione e iperattività* 6, 2, 15–22.
- Tosi, D., & Campi, A. S. (2021). How schools affected the COVID-19 pandemic in Italy: Data analysis for lombardy region, campania region, and Emilia region. *Future Internet*, 13(5), 109. https://doi.org/10.3390/fi13050109
- Tzankova, I., Compare, C., Marzana, D., Guarino, A., Di Napoli, I., Rochira, A., & Albanesi, C. (2022). Emergency online school learning during COVID-19 lockdown: A qualitative study of adolescents' experiences in Italy. *Current Psychology*, 1–13.
- United Nations Educational, Scientific and Cultural Organization (UNESCO). (2020). Education: from disruption to recovery. https://en.unesco.org/covid19/educationresponse
- United Nations Children's Fund. (2020). Covid-19: Are children able to continue learning during school closures? A global analysis of the potential reach of remote learning policies using data from 100 countries. UNICEF.
- Urbina-Garcia, A. (2020). Young children's mental health: Impact of social isolation during the COVID-19 lockdown and effective strategies. https://doi.org/10.31234/osf.io/g549x
- Viner, R. M., Russell, S. J., Croker, H., Packer, J., Ward, J., Stansfield, C., Mytton, O., Bonell, C., & Booy, R. (2020). School closure and management practices during coronavirus outbreaks including COVID-19: A rapid systematic review. *The Lancet Child & Adolescent Health*, 4, 397–404. https://doi.org/10.1016/S2352-4642(20)30095-X
- Walters, A. S. (2023). School absenteeism in the post-pandemic world. The Brown University Child and Adolescent Behavior Letter, 39, 8. https://doi.org/10.1002/cbl.30684
- Xie, X., Xue, Q., Zhou, Y., Zhu, K., Liu, Q., Zhang, J., & Song, R. (2020). Mental health status among children in home confinement during the coronavirus disease 2019 outbreak in Hubei province, China. JAMA Pediatrics, 174(9), 898–900. https://doi.org/10.1001/jamapediatrics.2020.1619
- Zaccoletti, S., Camacho, A., Correia, N., Aguiar, C., Mason, L., Alves, R. A., & Daniel, J. R. (2020). Parents' perceptions of student academic motivation during the COVID-19 lockdown: A cross-country comparison. *Frontiers in Psychology*, 11, 592670. https://doi.org/10.3389/fpsyg.2020.592670
- Zolopa, C., Burack, J. A., O'Connor, R. M., Corran, C., Lai, J., Bomfim, E., DeGrace, S., Dumont, J., Larney, S., & Wendt, D. C. (2022). Changes in youth mental health, psychological wellbeing, and substance use during the COVID-19 pandemic: A rapid review. Adolescent Research Review, 7(2), 161–177. https://doi.org/10.1007/s40894-022-00185-6

How to cite this article: Cena, L., Trainini, A., Zecca, S., Zappa, S. B., Cunegatti, F., & Buizza, C. (2023). Socio-emotional, cognitive, affective disorders and substance use in a sample of students in first- and second-grade high school in Italy: A comparison among students', parents', and teachers' perceptions. *Psychology in the Schools*, 1–19. https://doi.org/10.1002/pits.22950

19