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David Naff

Shenita Williams

Jenna Furman-Darby

Melissa Yeung

Bowling Green State University, yeungm@bgsu.edu

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The Mental Health Impacts of COVID-19 on PK–12 Students: A Systematic Review of Emerging Literature

David Naff
Shenita Williams

Virginia Commonwealth University

Jenna Furman-Darby 

Chesterfield County Public Schools

Melissa Yeung

Bowling Green State University

The mental health impact of the coronavirus disease 2019 (COVID-19) pandemic on PK–12 youth is likely an urgent and enduring concern, yet research on this topic is still emerging. To synthesize current knowledge, the researchers conducted a systematic review of empirical studies exploring the mental health impacts of COVID-19. Five themes emerged across 104 included studies: (a) the pandemic proved widely disruptive to PK–12 youth; (b) there was a clear connection between the mental health of caregivers (e.g., parents) and children; (c) the pandemic broadly increased levels of stress, anxiety, and depression in PK–12 youth; (d) students were particularly affected on the basis of age, gender, race/ethnicity, socioeconomic status, and previous mental health or disability diagnosis; and (e) youth demonstrated negative and positive coping strategies and even saw some positive mental health outcomes during the pandemic. Implications for research, practice, and policy are discussed.

Keywords: *adolescence, child development, counseling, COVID-19, early childhood, literature, mental health, PK–12 students, stress/coping, textual analysis*

ALTHOUGH disruptions to PK–12 schooling because of coronavirus disease 2019 (COVID-19) have led to reasonably earnest concerns about learning loss (Engzell et al., 2021), attending to the impacts on the mental health of PK–12 students is likely an equally urgent need (Nearchou et al., 2020). Students have experienced reduced access to school-based mental health providers such as counselors, social workers, and psychologists at a time when they find themselves at the nexus of national uncertainty about how to safely reopen schools for in-person learning while navigating the personal disruptions the pandemic has caused. The systematic literature review presented herein explored empirical research focused on the mental health impacts of COVID-19 on PK–12 students.

Likely Mental Health Impacts of COVID-19 on PK–12 Students

Preexisting literature suggests that the emotional well-being of PK–12 students has been affected by COVID-19. To explore this we drew from research related to the mental health challenges associated with school closures

during natural disasters and the psychological impacts of quarantine.

Mental Health Challenges During Natural Disasters. After Hurricane Katrina, nearly 200,000 Louisiana students from kindergarten through 12th grade were displaced (Jaycox et al., 2007), and an estimated 34% experienced symptoms of posttraumatic stress disorder (PTSD) or depression (Katoaka et al., 2009). Students commonly navigated secondary stressors such as separation from family or friends or parental unemployment (Overstreet et al., 2010). Such stressors often compound emotional distress related to a traumatic event and may manifest in disengagement from school (Sims et al., 2015), disruptive behavior (Coombe et al., 2015), or substance abuse (Brock & Cowan, 2004). When students returned to school, there was often high demand for mental health support, particularly in higher poverty contexts (Madrid et al., 2008). Compounding this increased demand, educators across the PK–12 spectrum reported higher levels of emotional distress when they returned to work (Burnham & Hooper, 2012). Taken



together, this suggests that schools might expect an increased demand for mental health support during and after COVID-19 with an educator workforce that is similarly overwhelmed.

Psychological Impact of Quarantine. Brooks et al. (2020) reviewed research on the psychological impacts of quarantine and found that it was associated with feelings of anxiety, exhaustion, and demotivation, which could persist after quarantine has ended. Quarantining can also negatively affect resilience and relationships, and research has shown that students who experienced quarantine following a natural disaster were more likely to show symptoms consistent with PTSD (Sprang & Silman, 2013). Although the majority of U.S. PK–12 students have now returned to in-person instruction, there was considerable variability at the start of the 2020–2021 academic year, with some remaining fully remote (Hoffman et al., 2021), with corresponding mental health consequences (Duckworth et al., 2021). Regardless, all students likely experienced some level of mandated quarantine (Stevens, 2020) and may have lingering distress as a result.

Particularly Affected Student Groups. It is important to understand developmental differences between children and adolescents when considering how they experience stress. Preschool-aged children may show regression in previously learned behaviors, while elementary children might present as more easily agitated (Murray, 2010). Adolescents may show increased difficulty concentrating, poorer school performance, and higher rates of school absenteeism (Jaycox et al., 2006). Furthermore, research suggests that quarantine might be particularly disruptive for adolescents, who tend to particularly need interaction with peers to support mental well-being (Brooks et al., 2020).

Students with existing mental health challenges may experience an increase in maladaptive symptoms that adversely affects social and academic functioning (Powell & Bui, 2016). Moreover, students with physical and cognitive disabilities may experience elevated symptoms associated with their disabilities or have difficulty adhering to safety protocols (Peek & Stough, 2010). Furthermore, students with existing substance abuse issues may see their addictions amplified (Overstreet et al., 2010).

The experiences of families who were directly affected by COVID-19 can have profound and direct consequences for students. Comer et al. (2010) explained that a child's mental health tends to be negatively affected by familial experiences like job loss, food insecurity, and physical health challenges. Moreover, parent and child well-being tends to be correlated, and parental capacity to meet the mental health needs of their children can be compromised in the wake of a disaster (Lowe et al., 2012).

The pandemic has had a disproportionately negative impact on students of color and students living in poverty (Naff et al.,

2020), including higher hospitalization rates and exposure to COVID-19-related environmental stressors (Centers for Disease Control and Prevention, 2020). Additionally, undocumented students may experience particular stress during the pandemic because of its impact on their financial security (Enriquez et al., 2021). Only approximately 20% of low-income youth received the mental health support they needed in the year following Hurricane Katrina (Madrid et al., 2008), further emphasizing the need to prioritize this during and after the pandemic.

The Need for Mental Health Supports in Schools During COVID-19

Schools play an essential role in the psychological, social, and academic development of children (Fazel et al., 2014) and employ the largest number of youth mental health providers (Jaycox et al., 2006). This is perhaps why approximately 80% of school-aged children with mental and behavioral health needs rely on school-based services (Masonbrink & Hurley, 2020). Research suggests that schools are often the first institutions to open after a natural disaster (Overstreet et al., 2010), which places them in a position to address immediate trauma (Jaycox et al., 2006). A lack of adequate support for children's mental health can lead to attention difficulties, behavioral concerns, and lower academic achievement (Powell & Bui, 2016). In a mixed-methods study by Savitz-Romer et al. (2021), school counselors reported adapting their practices to meet the needs of their students during COVID-19 and that it was more important than ever to focus their energy on student mental health.

Research suggests that students need emotional support during online learning (Literat, 2021; Kim et al., 2021). Early identification and interventions for mental health concerns can therefore lead to higher academic and social success, as well as less psychological distress (Naff et al., 2020). Concurrently, it is important to be mindful of how the pandemic has affected the mental health of educators, who have reported navigating their own emotional exhaustion while attending to student needs (Collie, 2021). Considering the imperative role that schools play in supporting students socially and emotionally, disrupted access to school-based providers has likely exacerbated the deleterious mental health impacts of the pandemic.

Purpose Statement and Research Questions

It is clear that COVID-19 has likely affected the mental health of PK–12 students in acute and enduring ways, but research in this area is still emerging. In this paper, we discuss the results of a systematic literature review focused on empirical studies exploring the apparent impact of the pandemic on the mental health of PK–12 students. Our purpose is to aggregate key findings that inform the work of PK–12

TABLE 1
Search Terms

Search term	AND	AND	AND
“covid*” OR “coronavirus*” OR “novel coronavirus” OR “nCOV” OR “quarant*”	“psychiatr*” OR “psycholog*” OR “mental” OR “mental health” OR “mental illness” OR “mental outcome*” OR “mental disorder*”	“child*” OR “adolescen*” OR young OR youth OR “teen*” OR infant OR puberty OR “infant*” OR “youth” OR “child*” OR “preschool*” OR “pre-school student*” OR “elementary student*” OR “middle school student*” OR “high school student*” OR “school student*”	survey* OR quant* OR qual* OR questionnaire OR “empirical stud*” OR “evaluation stud*”

educators, mental health providers, and policy makers and to identify future research opportunities. Two research questions guided our review:

Research Question 1: How has the COVID-19 pandemic affected the mental health of PK–12 students?

Research Question 2: Which students have seen their mental health particularly affected during the COVID-19 pandemic?

Method

We conducted a systematic review of the literature following Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (Moher et al., 2009), searching PsycInfo, CINAHL Complete, Education Research Complete, ERIC, Psychology and Behavioral Sciences Collection, Social Sciences Abstracts, and Social Work Abstracts after using exemplary studies to develop search terms. Table 1 summarizes keywords and Boolean operators used for the search, which included gray literature and international studies.

Selection Process

Four researchers reviewed titles and abstracts of 550 studies published by December 11, 2020, marking articles for exclusion that were not (a) related to mental health, (b) related to COVID-19, (c) related to PK–12 school-aged youth outcomes, (d) empirical studies (including research questions, methods, and findings), and (e) written in English. On the basis of these criteria, the research team identified 76 relevant studies, divided them for full review, and excluded 35 by consensus decision. This process also included a quality appraisal using the Mixed-Methods Appraisal Tool (Hong et al., 2018). Articles scoring 3 on a 5-point scale were rated as “medium” quality, while those rated 4 or 5 were rated “high” quality. Any article scoring less than 3 was excluded.

We then replicated the first literature pull on May 12, 2021, resulting in an additional 532 studies divided evenly for title and abstract review. We discussed articles for which inclusion or exclusion was ambiguous and came to a

consensus on 103 additional studies for full-text review. After replicating the first round process, we eliminated 40 additional articles, ultimately including 104 studies. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow diagram (Figure 1) depicts the combined search process.

Of the resulting articles, 26.0% were from the United States, 22.1% were from China, and 29.8% were from European countries (primarily Italy and the United Kingdom). Although most studies included more than one mental health focus, anxiety (47.1% of studies) and depression (44.2% of studies) were most commonly explored. The vast majority (91.3%) used survey or questionnaire methods for data collection. Full frequencies are included in Table 2.

Table 3 offers key information about the studies included in the systematic literature review that informed our findings section. This includes details about the sample, date and methods of data collection, measure(s) used, mental health focus area(s), and quality appraisal results. Researchers reviewed articles carefully and met monthly over approximately 1 year to determine emergent themes, as discussed in the following section.

Findings

There were five themes that emerged from the literature. Theme 1 highlighted the disruptive nature of COVID-19 on the lives of PK–12 students, including the corresponding mental health impacts. Theme 2 explored the connection between caregiver and student mental health. Theme 3 revealed the broad mental health impacts of the pandemic on PK–12 students. Theme 4 investigated student groups who saw their mental health particularly affected by the pandemic. Finally, Theme 5 explored resilience and coping during the pandemic, including positive mental health outcomes and strategies for supporting student mental health identified in the literature.

Theme 1: The Disruptive Nature of the COVID-19 Pandemic for PK–12 Students

A prevailing theme was the pronounced disruption of the pandemic on students’ daily lives, including the impacts on

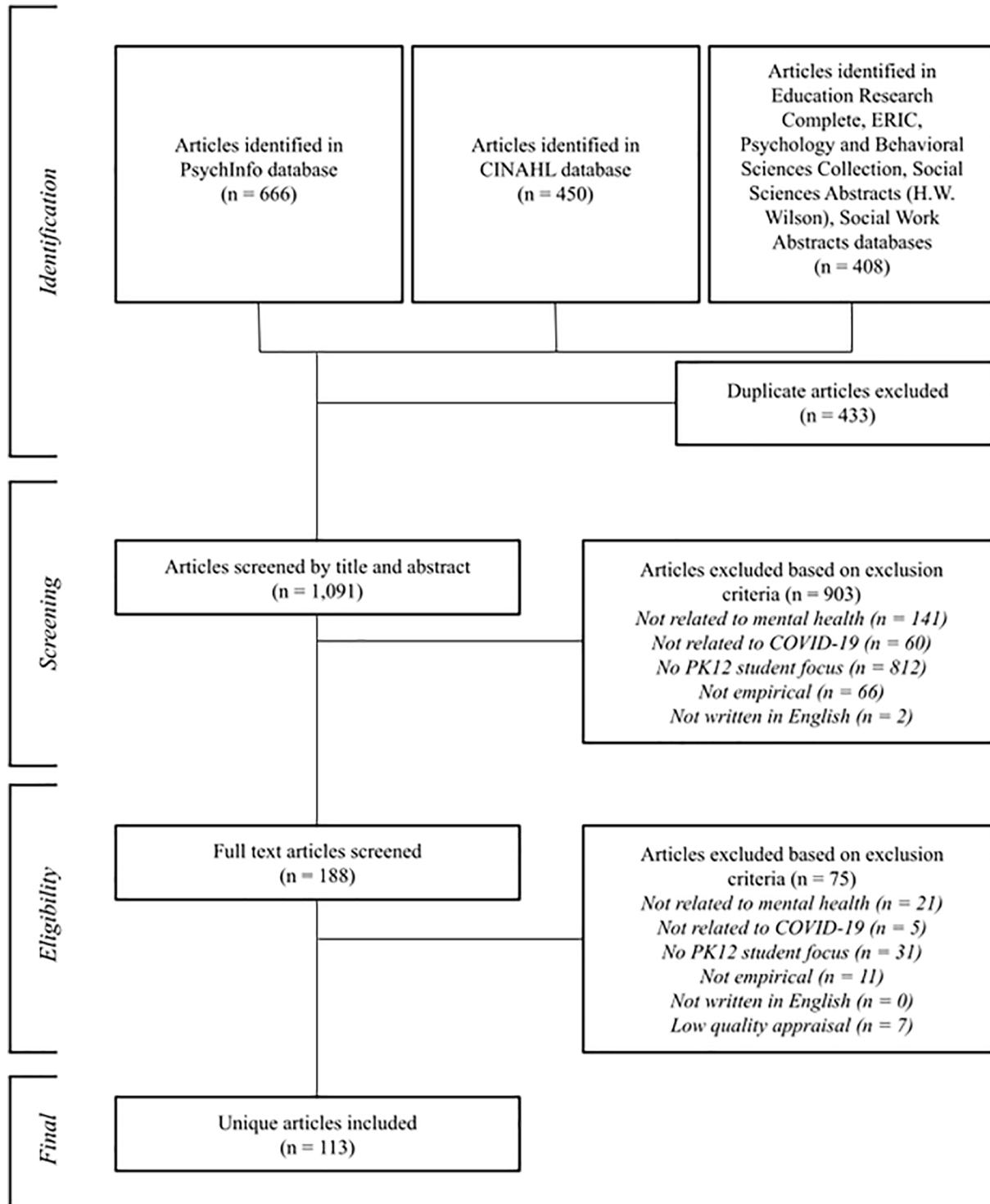


FIGURE 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses flowchart.
 Note. Articles could be excluded for more than one reason.

their physiological health and increased use of technology. Each of these disruptions corresponded with impacts on student mental health.

Disruption to Daily Life and Routine. Adolescents in Magson et al.'s (2021) study reported lower life satisfaction during lockdown if they strictly adhered to stay-at-home orders

TABLE 2
Frequencies

	Europe	United States	China	Canada	Middle East	Other	
Country	31 (Italy, $n = 11$, United Kingdom, $n = 7$) (29.8%)	27 (26.0%)	23 (22.1%)	8 (7.69%)	8 (7.69%)	7 (6.73%)	
Mental health focus ^a	Anxiety 49 (47.1%) Survey/questionnaire	Depression 46 (44.2%)	Stress 20 (19.2%)	Trauma 9 (8.65%) Qualitative (interviews or focus groups)	Loneliness 7 (6.73%)	Fear or worry about COVID-19 6 (5.77%) Mixed methods	Other 4 (3.85%)
Methodology		95 (91.3%)		4 (3.85%)		5 (4.81%)	

^aMost studies included more than one mental health focus.

rather than leaving their homes periodically. Buzzi et al. (2020) similarly found that the overall concern of Italian teenagers in their study increased during lockdown orders, and decreased after the restrictions were loosened. Raviv et al. (2021) found that nearly all of the U.S. K–12 students and caregivers in their study reported prolonged disruptions to daily routines, including decreased peer support and academic enrichment. Similarly, Dewa et al. (2021, p. 668) found that 93.1% of their U.K. adolescent participants reported a “moderate to severe” impact on their routine. Research showed similar challenges following routine for pre-K (Di Giorgio et al., 2021) and elementary students (Cellini et al., 2021).

Disruption to Schooling. Research repeatedly showed that disruption to schooling was the highest concern for students. More than half of the Chinese children and adolescents in Duan et al.’s (2020) study reported that the pandemic had affected their learning. Similarly, Asanov et al. (2021) found that more than half of the Ecuadorian adolescents in their sample saw school disruption as their main concern. Students were particularly concerned with online learning, including time management and motivation (Scott et al., 2021) and lack of access to support from teachers (Magson et al., 2021). Li, Beames, et al. (2021) found that more than 95% of the Chinese secondary school students in their sample participated in online learning and most indicated a negative impact on their overall well-being, including increased loneliness. Haffejee and Levine (2020) found that stress associated with online learning was compounded by disrupted access to high-speed Internet or reliable devices.

Access to Information About COVID-19. Receiving ambiguous information about the pandemic was associated with greater fear in youth (Al Omari et al., 2020; Buzzi et al., 2020). Qin et al. (2021) found that students ($M = 12.04$ years) with fewer ways of finding information about the pandemic tended to have higher odds of distress. However,

research suggests the age of the student relates to how they respond to information about COVID-19. For example, Nissen et al. (2020) found that elementary-aged students were old enough to understand media reports, leading them to worry about their family becoming sick or dying. Yue et al. (2020) found that media exposure was a risk factor for PTSD and anxiety in their sample of “school-aged” children but served as a protective factor against anxiety and depression for their parents.

Physiological and Mental Health Connection. There were several documented physiological impacts of the pandemic on PK–12 students, including diet (Sama et al., 2020; Scott et al., 2021; Zengin et al., 2021), weight (Adibelli & Sümen, 2020; Sama et al., 2020), and exercise (Scott et al., 2021). Research also showed that the pandemic exacerbated existing physiological and neurological issues in students, including headaches (Papetti et al., 2020) and epilepsy (Pasca et al., 2021). Li, Beames, et al. (2021) found that more than half of their participants reported worsening physical health during the pandemic, and 75% reported negative impacts on their mental health.

Sleep. A prominently documented physiological issue associated with COVID-19 that had an impact on student mental health was disrupted sleep patterns (Cellini et al., 2021; Di Giorgio et al., 2021; Liu, Tang, et al., 2021). Liu, Chen, et al. (2021) found that adolescents who slept less than 6 hours per day during the pandemic also reported higher levels of anxiety. Moulin et al. (2021) found that emotional difficulties in children were significantly associated with difficulty sleeping during the pandemic. Cellini et al. (2021) similarly found that lower sleep quality was associated with increased emotional difficulties and boredom. Disrupted sleep during the pandemic was also associated with lower optimism (Dewa et al., 2021). Contrarily, Penner et al. (2021) reported positive changes to sleeping routines in U.S. adolescents. Overall, Di Giorgio et al. (2021) concluded that

TABLE 3
Included Studies

Study	Sample Age Gender (percentage) Race/ethnicity Country	Data collection date Method	Measures/outcomes (citations provided for validated scales)	Mental health focus	Quality appraisal
Ađibelli & Sđmen (2020)	597 children and parents 7–13 years ($M = 9.87$ years) Female (55.8%), male (44.2%) Race/ethnicity not provided Turkey	March 30 to April 20, 2021 Online questionnaire	Generic health-related quality of life questionnaire for children (Kid-KINDL; Ravens-Sieberer & Bullinger, 1998)	Fear/anxiety about coronavirus, emotional well-being, self-esteem	Medium
Akinsanya et al. (2021)	5,340 parents of school-aged children Age and gender not provided Race/ethnicity not provided Nigeria	Dates not provided Online questionnaire	COVID-19 pandemic and parental response to school children survey (author created)	Social and safety needs of children	Medium
Al Omari et al. (2020)	1,057 youth 15–24 years ($M = 21.01$ years) Female (71.5%) Race/ethnicity not provided Oman, Saudi Arabia, UAE, Iraq, Jordan, and Egypt	April 1–15, 2020 Online survey, structured questionnaire	Depression, Anxiety, and Stress Scale (DASS; short form; Moussa et al., 2017)	Depression, anxiety, stress	High
Ares et al. (2021)	1,725 parents with children ages 0–5 years (63%), 6–12 years (59%), 13–18 years (42%) Female (79%), male (21%) Race/ethnicity not provided Uruguay	March 2020 Online questionnaire	Questionnaire related to changes in family life (author created)	Changes in relationship between parent and child, changes in child's mood and behavior	Medium
Asanov et al. (2021)	1,552 high school students 15–18 years ($M = 15.9$ years) Female (54%), male (46%) 84% Mestizo or White, 16% Indigenous/Afro-Ecuadorian/ Montubio/Mulatto/other Ecuador	March 31 to May 3, 2020 Phone survey	5-item MHI-5 index (Veit and Ware, 1983)	Happiness, depression	High
Bailey et al. (2021)	103 parents of children with intellectual disabilities 5–17 years ($M = 11.53$ years) Male (pre, 66.7%), (post, 71.8%), female (pre, 32.7%), (post, 23.3%) Race/ethnicity not provided United Kingdom	Data collected before and after COVID-19 lockdown (specific dates not provided) Survey (online and paper)	Kessler 6 (K6, Kessler et al. 2002), 7-item Positive Gains Scale (Jess et al. 2020; Pitt-ten Cate 2003), 7-item "Impact of caregiving on carer" scale from the Survey of Informal Carers in Households 2009/10 (NHS Information Centre 2010), Strength and Difficulties Questionnaire parent report version (Goodman 1999), 8-item GOHKIDDS Brief Adaptive scale (Perry et al. 2014)	Psychological distress, general well-being, behavioral and emotional problems, externalizing problems, internalizing problems	High
Becker et al. (2020)	238 adolescents 15.64–17.99 years Male (55.4%) 80.3% White, 94.5% non-Hispanic/Latinx United States	May 16 to June 25, 2020 Questionnaires	Home Adjustment to COVID-19 Scale (author created), Adolescent Routines Questionnaire (Meyer, 2008), COVID-19 Adolescent Symptom and Psychological Experience Questionnaire (Ladouceur, 2020)	Positive and negative affect, difficulty concentrating	High
Bentenuto et al. (2021)	164 families of children with NDDs and TD With NDD, 7.63 years; TD, 7.67 years Female with NDD (24.1%), female TD (28%), male with NDD (75.9%), male TD (72%) Race/ethnicity not provided Italy	Dates not provided Online survey	Parental Stress Scale (PSS, Berry & Jones, 1995), Coparenting Relationship Scale (CRS, Feinberg et al., 2012), Strengths and Difficulties Questionnaire (SDQ, Goodman, 1997, 2001; Klasen et al., 2000)	Relationship with parents, hyperactivity/inattention, conduct problems	Medium
Berubé et al. (2020)	414 parents of children ages: 0–5 years (22.7%), 6–12 years (38.6%), 13–17 years ($M = 38.6%$) Gender not provided Race/ethnicity not provided Canada	April 29, 2020 online questionnaire	Multidimensional Neglectful Behavior Scale Parent-Report (MNBS; Holt et al., 2004), Room for Parents Questionnaire (Bérubé et al., 2015), Parent-Child Interaction Scale of the Parental Stress Index (Abidin, 1983; translated by Bigras et al., 1996)	Cognitive and affective needs, security needs, basic care needs	Medium

(continued)

TABLE 3 (CONTINUED)

Study	Sample Age Gender (percentage) Race/ethnicity Country	Data collection date Method	Measures/outcomes (citations provided for validated scales)	Mental health focus	Quality appraisal
Browne et al. (2021)	231 children 3–12 years ($M = 5.69$ years) Female (45.8%), male (54.2%) 32.9% other/unknown, 23.8% European, 13.9% Black and Caribbean, 12.6% Latin American, 6.5% African Canada	December 2019 to March 2020 Surveys	Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001), Impairment Rating Scale (IRS; Fabio et al., 2006)	Behavioral and emotional dysregulation, inattention, hyperactivity, anxiety, depression, relationship with teacher, relationship with peers, self-esteem	High
Buzzi et al. (2020)	2,064 adolescents Age, gender, and race/ethnicity not provided Italy	March 2020 Online survey	Teenagers and COVID-19 Survey, part of the Survey on Lifestyles of Teenagers (Italian Society of Adolescent Medicine and the Adolescence Laboratory Association)	Concerns about COVID-19, disruption to school, disruption to social life	Medium
Cao et al. (2021)	11,180 middle school students 12–18 years ($M = 14.33$ years) Female (49.9%), male (50.1%) Race/ethnicity not provided China	March 20–31, 2020 Cross-sectional survey	Chinese version of the Patient Health Questionnaire for depression (PHQ-9; Wang et al., 2014), Chinese version of the Generalized Anxiety Disorder 7-item (GAD-7; Qing, 2013), Chinese version of the Childhood Trauma Questionnaire (CTQ; Xingfu et al., 2005), Chinese version of the Connor-Davidson Resilience Scale (CD-RISC; Yu et al., 2011)	Depression, anxiety, childhood abuse,	High
Cautberghie et al. (2021)	2,165 adolescents 13–19 years ($M = 15.51$ years) Female (66.6%), male (34.4%) Race/ethnicity not provided Belgium	April 16–30, 2020 Online survey	Center of Epidemiological Studies-Depression Scale (Harris & Porcellato, 2018), General Anxiety Disorder Scale (Spitzer et al., 2006), 6-item UCLA Loneliness Scale (RULS-6; Wongpakaran et al., 2020), BRIEF Coping Inventory (Carver, 1997)	Happiness, anxiety, loneliness	High
Collini et al. (2021)	299 mothers of children ages: 6–10 years ($M = 7.96$ years) Female (46.5%), male (46.5%) Race/ethnicity not provided Italy	April 1–9, 2020 Survey	Pittsburgh Sleep Quality Index (PSQI; Italian version by Curcio et al., 2013), Sleep Disturbance Scale for Children (SDSC; Bruni et al., 1996), Subjective Time Questionnaire (Italian version by Mioni et al., 2020), Strengths and Difficulties Questionnaire-Parent Version (SDQ-P; Italian version validated by Tobia and Marzocchi, 2018), Strengths and Difficulties Questionnaire—18+ (SDQ 18+; Goodman, 1997), Difficulties in Emotion Regulation Survey (DERS; Italian version validated by Giromini et al., 2012)	Sleep disturbances, conduct problems, hyperactivity, boredom	Medium
Çetin et al. (2020)	76 children (with ADHD) and parents 8–12 years ($M = 10.09$ years) Male (69.7%), female (30.3%) Race/ethnicity not provided Turkey	May 7–14, 2020 Phone questionnaire	Children's Impact of Event Scale (CRIES-8; Perrin et al., 2005), Children's Sleep Habits Questionnaire (CHSQ; Owens et al., 2000), Children's Chronotype questionnaire (CCQ; Zavada et al., 2005), Turgay DSM-IV Disruptive Behavior Disorders Rating Scale (T-DSM-IV-S; Turgay, 1994)	Trauma, sleep problems, ADHD symptoms, ODD symptoms	High
Cheath et al. (2020)	543 parents with children and 230 parent-child dyads ages: 4–18 years ($M = 13.83$ years) Female (48.3%) Chinese American United States	March 14 to May 31, 2020 Online survey	Online Victimization Scale for Adolescents (Tynes et al., 2010), Racial and Ethnic Microaggressions Scale (REMS; Nadal, 2011), Asian American Racism-Related Stress Inventory (Miller et al., 2012), Perceived Islamophobia Scale Health-Related (Kunst et al., 2013), Ryff's 18-item Psychological Well-Being Scale (Ryff & Keyes, 1995), 7-item Generalized Anxiety Disorder Screener (GAD-7; Spitzer et al., 2006), 21-item Beck Depression Inventory-II (Beck et al., 1996), Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997)	Perceptions of online and in-person direct discrimination, online and in-person vicarious (witnessed) discrimination, health-related discrimination toward Chinese Americans in the media, psychological well-being, anxiety, depression	High

(continued)

TABLE 3 (CONTINUED)

Study	Sample Age Gender (percentage) Race/ethnicity Country	Data collection date Method	Measures/outcomes (citations provided for validated scales)	Mental health focus	Quality appraisal
Chen et al. (2020)	1,036 youth 6–18 years Male (51.3%), female (48.7%) Chinese American China	April 16–23, 2020 Online questionnaire	Depression Self-Rating Scale for Children (DSRS-C; Birtleson et al., 1987), Screen for Child Anxiety Related Disorders (SCARED; Birmaher et al., 1997)	Anxiety, depression	Medium
Chen et al. (2021)	2,026 children Grades 2–6 ($M = 10.71$ years) Female (49.9%), male (50.1%) Race/ethnicity not provided China	March 4–16, 2020 Survey	The Internet Gaming Disorder Scale-Short Form (IGDS-SF9; Pontes and Griffiths, 2015), Bergen Social Media Addiction Scale (BSMAS; Yam et al., 2019), Smartphone Application-Based Addiction Scale (SABAS; Csibi et al., 2016), Depression, Anxiety, Stress Scale-21 (DASS-21; Antony et al., 2005)	Problematic online gaming, problematic social media use, problematic smart phone use, depression, anxiety	High
Chung et al. (2020)	258 parents with children ages: 0–1 years (24%), 2–3 years (21%), 4–5 years (18%), 6–7 years (12%), 8–9 years (13%), 10–12 years (12%) Female (64%), male (36%) 82% Chinese Singapore	April 22 to May 5, 2020 Online survey	Coronavirus Impacts Questionnaire (CIC; Conway et al., 2020), Parental Stress Scale (PSS; Berry & Jones, 1995)	Parental stress, psychological impact of COVID-19, harsh parenting behaviors, parent-child relationship closeness	High
Cost et al. (2021)	1,013 parents of children and 385 self-reporting adolescents (10–18 years) 2–18 years ($M = 10.46$ years for parent-reported children, $M = 13.1$ years for self-reporting adolescents) Female (43.9%), male (56.1%) Race/ethnicity not provided Canada	April 15 to June 19, 2020 Survey	International CRISIS Questionnaire (Nikolaïdis et al., 2020), Strengths and Difficulties Questionnaire (pre-school SDQ for ages 2–4 years, SDQ for children age 5+; Goodman, 1997; Croft et al., 2015)	Depression, anxiety, irritability, attention, hyperactivity, obsessive-compulsive behavior	High
Dewa et al. (2021)	641 youth 16–24 years ($M = 19.6$ years) Female (78.9%), male (20%), nonbinary (1.1%) 74.5% White, 2.6% Black/Black British, 13.9% Asian/ Asian British, 5.2% mixed race, 1.3% Arabic United Kingdom	April 24 to May 13, 2020 Mixed methods (survey and interviews)	Patient Health Questionnaire-9 (PHQ-9; Kroenke et al., 2001), Sleep Condition Indicator (SCI; Espie et al., 2014), Positive and Negative Affect Schedule (PANAS; Watson et al., 1988), Ten-Item Personality Inventory (TIPI; Chiorri et al., 2015), Life-Orientation Test-Revised (LOT-R; Scheier and Carver, 1985; Scheier et al., 1994) Suicide Ideation and Behavior Interview (Nock et al., 2007); Coronavirus Impact Scale (CIS; Kaufman & Stoddard, 2020), Brief COPE Inventory (Carver, 1997)	Mood, sleep quality, positive and negative affect, optimism, suicidal ideation, coping	High
Di Giorgio et al. (2020)	245 mothers with preschool children ages: 2–5 years ($M = 4.10$ years) Female (47.8%) Race/ethnicity not provided Italy	April 1–9, 2020 Online survey	Pittsburgh Sleep Quality Index (PSQI; Buysse et al., 1989; Italian version-Curcio et al., 2013), Sleep Disturbance Scale for Children (SDSC; Bruni et al., 1996) Subjective Time Questionnaire (STQ; Mioni et al., 2020; Wittmann & Lehmhoff, 2005), Behavior Rating Inventory of Executive Functions-Preschool Version (BRIEF-P; Gioia et al., 2003; Italian version-Mariano et al., 2014), Strengths and Difficulties Questionnaire—Parent Version (SDQ-P; Goodman, 1997; Italian Version - Tobia & Marzocchi, 2012), Difficulties in Emotional Regulation (DERS; Gratz & Roemer, 2004; Italian version - Giromini et al., 2012)	Inhibitory self-control, sleep difficulty, disruption to routine, boredom, time pressure, fear of COVID-19	Medium

(continued)

TABLE 3 (CONTINUED)

Study	Sample Age Gender (percentage) Race/ethnicity Country	Data collection date Method	Measures/outcomes (citations provided for validated scales)	Mental health focus	Quality appraisal
Drouin et al. (2020)	260 parents with children ages: 0–19 years ($M = 7.69$ years) Gender and race/ethnicity not provided United States	March 20–25, 2020, Online survey	Questionnaire (author created) related to financial preparedness, COVID-related work stress, social distancing, technology, and parent and child anxiety (using questions from the Patient Health Questionnaire-4 (PHQ-4; Löwe et al., 2010))	COVID-19-related work stress, parent and child anxiety, coping and connection using technology	Medium
Duan et al. (2020)	3,613 children/adolescents 7–18 years (mean not provided) Male (50.2%), female (49.8%) 100% Chinese China	Administered during the spread of COVID-19 (dates not specified) Online survey	Personal impact of COVID-19 (author created), Chinese Version of Spence Child Anxiety Scale (SCAS; Essau et al., 2011), Child Depression Inventory (CDI), Short Version of Smartphone Addiction Scale (SV-SAS; Kwon et al., 2013), Internet Addiction Scale (IAS; Cooper, 2001), Coping Style Scale (CSS; Chen et al., 2000)	Depression, anxiety, emotion-focused coping, problem-focused coping, Internet, smartphone addiction	High
Dumas et al. (2020)	1,054 adolescents 14–18 years ($M = 16.7$ years) Female (76.4%), male (21.9%) Race/ethnicity not provided Canada	April 4–13, 2020 Online survey	Substance use and COVID-19 reputation concerns (author created), Fear of COVID-19 virus (Ellis et al., 2020), Brief Symptom Inventory (Derogatis & Melisaratos, 1983), self-reported popularity (Dumas et al., 2019)	Use of alcohol, binge drinking, cannabis, vaping, depression, and anxiety	High
Dyer et al. (2020)	486 patients with HIV infection 10–14 years ($n = 152$), 15–19 ($n = 188$), 20–24 ($n = 146$) Female (65%), male (35%) Race/ethnicity not provided Kenya	March 2020 Phone interviews	The Depression Patient Health Questionnaire (PHQ-9), Conner-Davidson Resilience Scale (CD-RISC)	Mild depression, moderate to severe depression, mild to severe depression	High
Dyregrov et al. (2020)	244 8th to 11th graders Age and race/ethnicity not provided Female (69%), male (31%) Norway	April 21 and May 12, 2020 Online questionnaire	Questionnaire related to COVID-19 (author created), State-Trait Anxiety inventory (Marteau & Bekker, 1992)	Anxiety from COVID-19, COVID-19 prevention	Medium
Egan et al. (2021)	506 parents of children ages: 1–10 years ($M = 6.41$ years) Female (49.6%), male (49.8%) Race/ethnicity not provided Ireland	May 21 to June 3, 2020 survey	Play and Learning in the Early Years Survey (PLEY; McCrory et al., 2013; Williams et al., 2019)	Missing school, missing friends	High
Ellis et al. (2020)	1,054 adolescents 14–18 years ($M = 16.68$ years) Female (76.4%), male (29.1%), other (1.2%) White/European (65.7%), Asian (15.3%), Black North American/African (3.9%), Latino (3.1%), another (11%) Canada	April 4–16, 2020 Online survey	Questionnaire related to COVID-19 stress (author created), Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983), UCLA Loneliness Scale (Hays & DiMatteo, 1987), Godin Leisure-Time Exercise Questionnaire (Godin, 2011)	Loneliness, depression COVID-19 stress	High
Feinberg et al. (2021)	129 families with children $M = 9.9$ years Female (45.6%), male (54.4%) 94.7% non-Hispanic White United States	April to May 2020 Survey	Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977), Penn State Worry Questionnaire (Beck et al., 1995), Coparenting Relationship Scale (Feinberg et al., 2012), Parental Behavior Inventory (Schaefer, 1965), Strengths and Difficulties Questionnaire (Goodman et al., 1998)	Internalizing and externalizing problems	Medium
Fish et al. (2020)	159 LGBTQ+ participants 13–19 years Gender and race/ethnicity not provided United States	March 23 to April 10, 2020 Transcripts from an online chat	Qualitative analysis of transcripts from an online chat-based support group for LGBTQ+ youth	Participants reported feeling isolation, stress, frustration, anxiety, depression, general struggles with mental health	High

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TABLE 3 (CONTINUED)

Study	Sample Age Gender (percentage) Race/ethnicity Country	Data collection date Method	Measures/outcomes (citations provided for validated scales)	Mental health focus	Quality appraisal
Fitzpatrick et al. (2021)	133 caregivers of children ages: 1–19 years ($M = 8.21$ years) Gender not provided Caregivers: American Indian 2%, Asian 15%, Black or African American 7%, White 72%, Multiracial 8%, Latino 12% United States	April 20 to July 3, 2020 Online survey	Behavior and Feelings Survey (Weisz et al., 2019), Generalized Anxiety Disorder 7 (Spitzer et al., 2006), Patient Health Questionnaire-8 (Kroenke et al., 2009), author created questions related to current living situation and effects of COVID-19, Adapted Top Problems Assessment (Weisz et al., 2011)	Anxiety and depression among caregivers	High
Gassman-Pines et al. (2020)	645 parents of children ages: 2–7 years ($M = 4.9$ years) Female (50%), male (50%) African American (49.5%), White (18.2%), Asian American (3.3%), American Indian (0.2%), multiracial (2.3%), Hispanic (22.5%) United States	February 20 to April 27, 2020 Text surveys	Author-created measure related to parent and child psychological well-being and COVID-19 hardships	Daily negative mood of parent more frequent postrestrictions	High
Gazmararian et al. (2021)	761 high school students Age not provided Female (62%), male (38%) White (55.9%), Black (16.1%), Hispanic (19.9%), other (10.1%) United States	March 16, 2020 Cross-sectional survey	COVID-19 survey (author created)	Stress, worry about COVID-19, adjustment to lockdown	High
Giannopoulou et al. (2020)	459 high school seniors Age not provided Female (68.8%), male (31.2%) Race/ethnicity not provided Greece	April 16–30, 2020 Online survey	Generalized Anxiety Disorder-7 (GAD-7; Spitzer et al., 2006), The Patient Health Questionnaire-9 (PHQ-9) Modified for Teens (Johnson et al., 2002), brief measure of distress experienced during lockdown (author created)	Increase in anxiety, depression symptoms, thoughts of self-harm and of suicide	High
Greenway & Eaton-Thomas (2020)	238 parents of students ages: 0–17 years Male (63%), female (37%) Race/ethnicity not provided United Kingdom	June to July 2020 Online survey	Questionnaire related to home schooling (adapted from Parsons and Lewis 2010)	Psychological needs, mental health	Medium
Guo et al. (2020)	6,196 adolescents 11–18 years Male (47.9%), female (52.1%) Han Chinese (93.98%) China	February 8–27, 2020 Online survey	PTSD Checklist for DSM-5 (PCL-5; Weathers et al., 2013), Self-rated anxiety Scale (Zung, 1971)	PTSS, anxiety	High
Hartfjeje & Levine (2020)	32 children/youth $M = 13.5$ years Female (56.25%), male (43.75%) Race/ethnicity not provided South Africa	April to June 2020 Interview questions	Booklets for children to draw or write their responses to 6 open-ended questions	Isolation, fear, sadness and worry, hopelessness, depression	High
Hawke et al. (2020)	622 students 14–28 years ($M = 20.6$ years) Female (64.9%), male (27.2%), another gender (8%) Caucasian (63.1%), Asian East and Southeast (6.2%), South Asian (4.4%), Black African, Caribbean, North American (3.3%), multiple (12.8%), Indigenous (0.7%), Another background (9.5%) Canada	April 8–29, 2020 Online survey	CoRonavirus Health Impact Survey (CRISIS; Merikangas et al., 2020), Brief COPE Inventory (Carver, 1997), GAIN-SS (Dennis et al., 2008), Custom-designed author created questions related to youth strategies for keeping well during COVID-19	Depression, sadness, anxiety, suicide or self-harm, substance use	Medium

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TABLE 3 (CONTINUED)

Study	Sample Age Gender (percentage) Race/ethnicity Country	Data collection date Method	Measures/outcomes (citations provided for validated scales)	Mental health focus	Quality appraisal
Hawke et al. (2021)	622 youth 14–28 years ($M = 20.6$ years) 29 transgender and gender-diverse youth: nonbinary (58.6%), another gender (41.37%), 593 cisgender youth: male (34.4%) Caucasian (61%), another background Asian, Black, Indigenous, and Mixed heritage (39%) Canada	April 8–29, 2020 Online survey	CoRonavirUS Health Impact Survey (CRISIS; Merikangas et al., 2020), The Multidimensional Scale of Perceived Social Support (Zimet et al., 1988)	Mental health (including worry, substance use, service disruption due to COVID-19, physical health, unmet needs), perceived social support	Medium
Hussong et al. (2021)	105 parent-child dyads 6–9 years ($M = 7.4$ years), 8–12 years ($M = 9.51$ years), 9–13 years ($M = 10.6$ years), 12–16 years ($M = 13.6$ years) Male (49%) European American (81%), Alaska Native/American Indian (1%), Asian/Asian American (9%), Black/African American (4%), Latinx (4%), other (4%) United States	May 13 to July 1, 2020 Online survey	Pediatric Symptom Checklist (Jellinek et al., 1988), Child-reported general self-efficacy (Schwarzer & Jerusalem, 1995), Life Orientation Test-Revised Scale (Scheier et al., 1994), Coping Strategies Inventory (Tobin et al., 1984)	Self-efficacy, optimism, coping	High
Idoiaga Mondragon et al. (2021)	250 children 3–12 years ($M = 7.14$ years) Female (52.21%), male (47.79%) Race/ethnicity not provided Spain	March 30 to April 13, 2020 Online questionnaires	Parents asked/transcribed three open-ended questions for children	Coping, fear, sadness, nervousness, overwhelmed, worry, loneliness	High
Jansen et al. (2021)	318 parents of children ages: 2–12 years ($M = 6.7$ years) Female (48.1%), male (51.9%) White (77.4%), Asian (7.2%), Black or African American (5.7%), Hispanic/Latinx (3.1%), Native American/Alaska Native (1.6%), more than one race or other (4.9%) United States	May 26 to June 29, 2020 Online survey	COVID-19 Stress (author created), Parenting around SNacking Questionnaire (Davison et al., 2015)	Stress, emotions	High
Jones et al. (2021)	161 young people 16–25 years ($M = 20$ years) Trans male (39.8%), trans female (19.9%), gender diverse (34.2%), not sure of their gender identity (1%), not answered (5.6%) White (89.4%) United Kingdom	May 3 to July 4, 2020 Online survey	Generalized Anxiety Disorder (Spitzer et al., 2006), Patient Health Questionnaire-9 (Kroenke & Spitzer, 2002), Measure of the impacts of COVID-19 (author created)	Depression, anxiety	Medium
Lawson et al. (2020)	342 parents of children ages: 4–10 years ($M = 7.37$ years) Male (56.5%), female 53.5% Parents: Caucasian (80.4%), African American (6.3%), Hispanic (5.8%), Asian American (5.0%), multiracial/other (2.5%) United States	April to May, 2020 Online survey	Author created measure related to experiences with COVID-19 (job loss, economic consequences), Conflict Tactics Scale Parent-Child version (Straus et al., 1998), Family Crisis oriented personal evaluation scale (McCubbin et al., 1981), Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977)	Parental psychological and physical abuse on children	High
Lee, Ward, Lee, et al. (2021)	283 parents of children ages: 0–12 years Gender not provided White (73.4%) United States	March 24–25, 2020 Online survey	Parent-Child Conflict Tactics Scales (CTS-PC; Straus et al., 1998), author created questions related to increases in parental neglect and discipline since COVID-19	Physical and emotional neglect, discipline, parent depression	Medium

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TABLE 3 (CONTINUED)

Study	Sample Age Gender (percentage) Race/ethnicity Country	Data collection date Method	Measures/outcomes (citations provided for validated scales)	Mental health focus	Quality appraisal
Lee, Ward, Chang, et al. (2020)	405 parents of children ages: 0–12 years Gender not provided White (71%), Black (10.9), Hispanic (7.9), other (7.9) United States	April 2, 2020 Online survey	Author created questions related to parental perceived preparation to educate at home, daily schedule disruptions, and child behavior changes. Parental Involvement in Caregiving (adapted from Fragile Families and Wellbeing Study; Center for Research on Child Wellbeing, April 2013), Child Behavior Checklist: Child anxiety subscale (Achenbach, 1992), Personal Health Questionnaire (PHQ-8; Kroenke et al., 2009), Generalized Anxiety Disorder (Spitzer et al., 2006), Aggravation in Parenting Scale (Ehrlie & Moore, 1997)	Stress, anxiety	High
Leeb et al. (2020)	National CDC sample of children <18 years old, stratified by age Gender and race/ethnicity not provided United States	January to October 2019 and January to October 2020 Secondary data analysis	Weekly number of ED mental health-related visits, proportion of children's mental health-related ED visits per total ED visits, proportion of mental health-related ED visits per 100,000 pediatric ED visits per week	Unspecified mental health-related ED or pediatrician visits	Medium
Li, Zhang, et al. (2021)	7,890 high school students 12–18 years (mean not provided) Female (52.1%), male (47.9%) Race/ethnicity not provided China	March 30 to April 7, 2020 Online survey	Hospital Anxiety and Depression Scale (HADS) (Chan et al., 2010)	Depression, anxiety	Medium
Li, Beames, et al. (2021)	760 adolescents 12–18 years ($M = 14.8$ years) Male (19%), female (72%), nonbinary (5%), different identify (1.9%), prefer not to say (2.1%) Australian (88.1%), Aboriginal or Torres Strait Islander (9.4%) Australia	June 22 to August 5, 2020 Online survey	Questions related to COVID-19 exposure, perceived risk, and behavior change (author created; adapted from previous survey-Faasse & Newby, 2020), questions related to the COVID-19 impact on physical and mental health, school/education and relationships, lifestyle factors (author created), Kessler-6 (general psychological distress; Kessler et al., 2002), Warwick Edinburgh Mental Well-Being Scale (Tennant et al., 2007), Body Preoccupation Scale of the Illness Attitudes Scale (Weck et al., 2010)	Psychological distress, loneliness, health, anxiety, and well-being	Medium
Lindell-Postigo et al. (2020)	136 adolescents 12–18 years Male (39.7%), female (60.3%) Spanish Spain	Dates unspecified Online questionnaire	Self-Concept Form 5 (Bustos et al., 2015)	Physical self-concept, academic self-concept, social self-concept, emotional self-concept, family self-concept	High
Liu, Chen, et al. (2021)	9,554 adolescents 11–20 years (mean not provided) Female (56.7%), male (43.3%) Race/ethnicity not provided China	February 20–27, 2020 Online survey	Generalized Anxiety Disorder (Spitzer et al., 2006), Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1991)	Depression, anxiety	High
Liu, Tang, et al. (2021)	1,619 preschoolers 4–6 years ($M = 5$ years) Male (50.5%), female (49.5%) Race/ethnicity not provided China	February 17–19, 2020 Online survey	Children's Sleep Habit Questionnaire (Owens et al., 2000)	Coping	Medium

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TABLE 3 (CONTINUED)

Study	Sample Age Gender (percentage) Race/ethnicity Country	Data collection date Method	Measures/outcomes (citations provided for validated scales)	Mental health focus	Quality appraisal
Liu, Yue, et al. (2021)	5,175 adolescents 9–18 years ($M = 13.37$ years) Male (51.65%), female (48.35%) Race/ethnicity not provided China	June 9–28, 2020 Online survey	Personal Health Questionnaire-9 (Leung et al., 2020), Generalized Anxiety Disorder-7 (Leung et al., 2020)	Depression, anxiety	High
Liu, Zhou, et al. (2021)	1,264 children/parent dyads 7–12 years (mean not provided) Male (55.9%), female (44.1%) Race/ethnicity not provided China	February 25 to March 8, 2021 Online survey	Strengths and Difficulties Questionnaire (Du et al., 2008), Self-Rating Anxiety Scale (Zung, 1971)	Anxiety, behavior problems	Medium
Ma et al. (2021)	620 parent-child dyads 7–15 years Male (50.3%), female (49.7%) Race/ethnicity not provided China	April 11–17, 2020 Online survey	Author created questionnaire related to online education, Impact of Events Scale-Revised (Beck et al., 2008; Wilson & Tang, 2007), Short Mood and Feelings Questionnaire-Parent (SMFQ-P) (Angold & Stephen, 1995)	PTSD, depression, anxiety	Medium
Magson et al. (2021)	248 adolescents 13–16 years ($M = 14.4$ years) Male (49%), female (51%) Caucasian (81.8%) Australia	May 5–14, 2020 Online survey	Generalized Anxiety Disorder (Spence, 1998), Short Mood and Feelings Questionnaire - Child Version (Angold & Stephen, 1995), Students' Life Satisfaction Scale (Huebner, 1994), COVID-19 related distress (author created), Social Connectedness Scale (Lee & Robbins, 1995)	Depression, stress, life satisfaction, anxiety	High
Mazza et al. (2021)	917 parents of children ages: 3–13 years ($M = 7.59$ years) Gender not provided Race/ethnicity not provided Italy	April 6–11, 2020 Online survey	Big Five Inventory (Rammstedt, 2007), The Emotional Symptoms and Hyperactivity-Inattention Subscales of the Strength and Difficulties Questionnaire (Goodman, 1997), General Health Questionnaire (Goldberg & Williams, 1988)	Parent well-being, child emotional difficulties	Medium
McCluskey et al. (2021)	45 adolescents 14–18 years Male (27%), female (71%), prefer to self-describe (2%) White (67%), mixed (11%), African (7%), Asian or Asian British (2%), other ethnic group (2%) United Kingdom	August to September 2020 Online focus group, semistructured interviews	Focus group related to the impact of COVID-19 on youth mental health	Well-being	High
McGuire et al. (2021)	13,002 adolescents 13–19 years ($M = 16.2$ years) Female (52.9%), male (47.0%) Race/ethnicity not provided United States	May 2020 Online survey	General Anxiety Disorder-7 (Mossman et al., 2017), Patient Health Questionnaire-9 (Richardson et al., 2010), Pediatric Functional Activity Brief Scale (Fabricant et al., 2018), Pediatric Quality of Life Inventory 4.0 (Varni et al., 2001), COVID-19 stress questionnaire (author created), Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS-PL DSM-5) (Kaufman et al., 2019), Children's Global Assessment Scale (Shaffer et al., 1983), Perceived Stress Scale (Cohen et al., 1983), Parental Stress Index-Short Form (Abidin, 1995)	Depression, anxiety, quality of life	High
Mensi et al. (2021)	1,262 adolescents 12–18 years ($M = 16.27$ years) Female (69.65%), male (30.45%) Race/ethnicity not provided Italy	May to June 2020 Online survey	COVID-19 stress questionnaire (author created), Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS-PL DSM-5) (Kaufman et al., 2019), Children's Global Assessment Scale (Shaffer et al., 1983), Perceived Stress Scale (Cohen et al., 1983), Parental Stress Index-Short Form (Abidin, 1995)	PTSD, acute stress disorder, perception of parent stress	High
Moulin et al. (2021)	432 community-based parents/children $M = 6.8$ years Race/ethnicity not provided France	March 24 to April 28, 2020 Online questionnaire	Strengths and Difficulties Questionnaire (Goodman, 2001; Goodman & Goodman, 2009; Shojset et al., 2009)	Emotional difficulties, hyperactivity/inattention	High

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TABLE 3 (CONTINUED)

Study	Sample Age Gender (percentage) Race/ethnicity Country	Data collection date Method	Measures/outcomes (citations provided for validated scales)	Mental health focus	Quality appraisal
Murata et al. (2021)	7,353 participants (583 adolescents) $M = 15.8$ years 466 girls White (71%) United States	April 27 to July 13, 2020 Online survey	Patient Health Questionnaire (PHQ-9); Kroenke et al., 2001), Primary Care PTSD Screen for DSM-5 (PC-PTSD-5) (Prins et al., 2016), Generalized Anxiety Disorder (GAD-7) (Spitzer et al., 2006), Self-Injurious Thoughts and Behavior Interview, self-report version (Nock et al., 2007), Inventory of Complicated Grief-Revised for Children (Melhem et al., 2013)	Anxiety, PTSD, suicidal ideation, grief, depression	High
Nelson et al. (2020)	151 adolescent sexual minority boys 14–17 years White 78 (52%), Latino 40 (27%), Black/African American 16 (11%), Mixed race/another race 16 (11%) United States	March 27 to May 8, 2020 Online survey	Author created measure related to outness of sexuality with an accepting guardian (including questions from Glickman, 2014), author created questions related to changes to well-being and sexual behavior in the era of COVID-19	Well-being	Medium
Nissen et al. (2020)	102 children and adolescents 7–21 years ($M = 14.9$ years) Male (36.9%) Danish	April to May 2020 Questionnaire	Author created questionnaire (based on the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS, Goodman et al., 1989)	OCD severity	High
Nonweiler et al. (2020)	453 children 4–15 years Male (70.6%) race/ethnicity not provided United Kingdom	April 2 to June 2, 2020 Questionnaire	Strengths and Difficulties Questionnaire (Goodman et al., 2000)	Emotional symptoms, conduct problems, hyperactivity/inattention, peer relationships, prosocial behavior	High
O'Brien et al. (2021)	770 sexual-minority adolescents 15–19 years ($M = 17.53$ years) Female 544, male 226 White (58.3%), Asian/Pacific Islander (7.5%), Black or African American (7.8%), Native American, American Indian, or Alaskan Native (2.7%), Latino/Hispanic (14.4%), multiracial (9.2%) United States	May 13 and 31, 2020. Online survey	Author created measure (open ended questions) related to self-care behaviors	Self-care	High
Omer et al. (2021)	357 parents/doctors of children ages: 10–15 years ($M = 12.5$ years) Male (53.8%) Race/ethnicity not provided Pakistan	July 21–30, 2020. Questionnaire-based survey	Pediatric Symptom Checklist-17 (PSC-17) (Gardner et al., 1999; Murphy et al., 2016)	Psychosocial impact	High
Oosterhoff et al. (2020)	683 adolescents 13–18 years ($M = 16.35$ years) Female (75.3%) White (77%), Latinx (15.5%), Black (5.6%), Asian American/Pacific Islander (11.1%) United States	March 29–30, 2020 Survey	Author create question related to social distancing, Patient-Reported Outcomes Measurement Information System anxiety scale (short fixed-form 8-item) (Quinn et al., 2014), Patient-Reported Outcomes Measurement Information System depression scale (short fixed-form 8-item) (Quinn et al., 2014), Interpersonal Needs Questionnaire (Joiner, 2007)	Anxiety, depression, burdensomeness, belongingness, motivation to social distance	High
Papetti et al. (2020)	707 patients 5–18 years ($M = 12.5$ years) Gender not provided Race/ethnicity not provided Italy	Dates unspecified Questionnaire	Author created questionnaire related to health (headaches) and mood, anxiety (COVID-19), and coping	Primary headache disorders, anxiety about COVID-19, anxiety, depression, school anxiety, positive coping abilities	High

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TABLE 3 (CONTINUED)

Study	Sample Age Gender (percentage) Race/ethnicity Country	Data collection date Method	Measures/outcomes (citations provided for validated scales)	Mental health focus	Quality appraisal
Pasca et al. (2021)	23 patients 9–17 years ($M = 13$ years) Male (39.2%), female (60.8%) Race/ethnicity not provided Italy	April to May 2020 Phone questionnaire	Child Behavior Checklist (CBCL) (Achenbach & Rescorla, 2001), Parenting Stress Index–Short Form (PSI-SF) (Abidin, 1995), author created questions related to health and well-being	Anxiety, depression, withdrawn/depressed and somatic complaints (internalizing problems), rule breaking behavior and aggressive behavior (externalizing problems), social problems Parents' mental health, children's behavioral health	High
Patrick et al. (2020)	1,011 parents with children ages: 17 years (mean not provided) Gender not provided White non-Hispanic ($n = 579$), Black non-Hispanic ($n = 109$), Hispanic ($n = 221$), Other ($n = 103$) United States	June 5–10, 2020 Survey	Author developed survey related to physical, mental (parent) and behavioral (child) health (adapted from the National Survey of Children's Health on food security, enrollment in food assistance programs and health insurance) (U.S. Department of Health and Human Services, Health Resources and Services Administration)	Parents' mental health, children's behavioral health	High
Penner et al. (2021)	322 adolescents 10–14 years ($M = 11.99$ years) Female (55%), male (45%) Hispanic/Latinx (72.7%), Black or African American (9.3%), multiple races (5.9%), Asian (5.0%), White (1.6%), American Indian (1.2%) United States	January to May 2020 Survey	Self-report survey about at home experiences during COVID-19 (adapted from a COVID survey for youth, Temple et al., 2020), Brief Problem Monitor (BPM) (Achenbach and Rescorla, 2011; adapted from the Youth Self-Report, Achenbach & Rescorla, 2001)	Internalizing problems, attention problems, externalizing problems,	High
Pisano et al. (2021)	326 adolescents 14–19 years (male $M = 15.8$ years, female $M = 16.0$ years) Male (75.8%), female (24.2%) Race/ethnicity not provided Italy	April 25 to May 13, 2020 Online survey	Author created Socio-demographic Questionnaire (SQ), State-trait Anxiety Inventory (STAI-Italian version) (Pedrabissi & Santinello, 1989), Mood and Feelings Questionnaire-short form (MFQ-SF) (Angold & Stephen, 1995; Messer et al., 1995), Strength and Difficulties Questionnaire (SDQ)-Italian self-report version (Goodman, 1997)	Anxiety, depression, general psychopathology	High
Qi et al. (2020)	7,202 adolescents 14–18 years (median age 16 years; mean not provided) Male (46.4%), female (53.6%) Race/ethnicity not provided China	March 8–15, 2020 Online survey	Patient Health Questionnaire (Spitzer et al., 1999), Generalized Anxiety Disorder Scale (Spitzer et al., 2006), Social Support Rate Scale (Dai et al., 2016)	Depression, anxiety, and social support	High
Qin et al. (2021)	1,199,320 students $M = 12.04$ years Male (51.6%) Race/ethnicity not provided China	March 8–30, 2020 Online questionnaire	General Health Questionnaire (GHQ-12)-Chinese version (Liang et al., 2016)	Psychological distress	High
Ravens-Sieberer et al. (2021)	1,586 families with children ages: 7–17 years ($M = 12.25$ years) Female (50.0%) Race/ethnicity not provided Germany	May 26 and June 10, 2020, Self-report online survey and parent proxy reports	KIDSCREEN-10 Index (Ravens-Sieberer et al., 2014), Screen for Child Anxiety Related Disorders (SCARED)-German version (Birmaher et al., 1999), Center for Epidemiological Studies Depression Scale (CES-DC)-German version (Barkmann et al., 2008), The Strengths and Difficulties Questionnaire (SDQ; Goodman 1997), HBSC symptom checklist (Haugland et al., 2001)	Anxiety, depression, sadness, difficulty concentrating,	High

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TABLE 3 (CONTINUED)

Study	Sample Age Gender (percentage) Race/ethnicity Country	Data collection date Method	Measures/outcomes (citations provided for validated scales)	Mental health focus	Quality appraisal
Raviv et al. (2021)	32,217 caregivers/49,397 children (PK-12) Age and gender not provided Race of caregiver: White (39.3%), Latinx (30.2%), Black (22.4%), multiple or other (8.1%) United States	June 24 to July 15, 2020, Online survey	Questions from the COVID-19 Exposure and Family Impact Scale (Kuzak et al., 2020), author created retrospective pre-post design to assess psychological well-being	Agitation, anger, loneliness, anxiety, stress, depression, low mood, self-harm, thoughts of suicide	High
Rogers et al. (2021)	407 adolescents 14-17 years ($M = 15.42$ years) Male (50.1%), female (49.9%) White (52%), African American (20%), Hispanic/Latinx (17%), Asian American (3%), American Indian or Alaska Native (1%), mixed/other (7%) United States	October 2019, April 11-25, 2020 Online survey	Experiences with COVID-19 (Rogers et al., 2020), Children's Depression Inventory (Allgaier et al., 2012), Generalized Anxiety Disorder Scale (Spitzer et al., 2006), Three-Item Loneliness Scale (Hughes et al., 2004)	Relationship dynamics, mood, depression, anxiety, loneliness	High
Salzano et al. (2021)	1,860 adolescents 12-18 years ($M = 16$ years) Female (61.7%) Race/ethnicity not provided Italy	April 23 to May 3, 2020 Online questionnaire	Author created survey related to lifestyle changes during quarantine	Fear, discouragement, anxiety	High
Sama et al. (2020)	310 parents of children Age not provided Male (93.2%), female (6.82%) Race/ethnicity not provided India	Dates unspecified (during lockdown) Phone interviews	Author created questionnaire related to the impact of lockdown on children	Anxiety, depression, anger, irritation	High
Scott et al. (2021)	719 adolescents 14-19 years ($M = 16.28$ years) Male (31.7%), female (65.5%), gender minority (2.2%) White (61.9%), Hispanic/Latinx (9.2%), Black or African American (9.5%), Asian (3.3%), White Latinx (4.7%), Black and White (1.8%), White and Asian (2.1%), nonwhite multiracial Latinx (2.9%), nonwhite multiracial non-Latinx (3.3%), prefer not to answer (1.0%) United States	May 1-18, 2020 Online surveys	Author created survey related to physical and mental health and experiences during COVID-19	Depression, loneliness, stress, anxiety, social connection	High
Seçer & Ulaş (2021)	598 adolescents 14-18 years ($M = 16.40$ years) Female (61.1%), male (38.9%) Race/ethnicity not provided Turkey	Dates unspecified Online survey	Obsessive Compulsive Inventory - Child Version (Foa et al., 2010), Emotional Reactivity Scale (Nock et al., 2008), Depression and Anxiety Scale for Children (Ebessutani et al., 2012), Fear of COVID-19 Scale (Ahorsu et al., 2020), Experiential Avoidance Questionnaire (Eksit et al., 2018; Sahdra et al., 2016)	Emotional reactivity, depression-anxiety, experiential avoidance, OCD	Medium
Shek et al. (2021)	4,981 adolescents $M = 13.15$ years Female (51.5%), male (48.5%) Race/ethnicity not provided China	December 2019 to January 2020 Survey	Chinese Positive Youth Development Scale (CPYDS; Catalano et al., 2004), Children's Revised Impact of Event Scale (CRIES-13; Perrin et al., 2005; Wang et al., 2010), author created question related to perceived threat of COVID-19	PTSD	High
Shorer & Leibovich (2020)	351 parents of children ages: 2-7 years ($M = 4.82$ years) Male (49.6%), female (50.1%) 97.4% Jewish Israel	Dates not specified Online survey	Stress Reaction Checklist (Sadeh et al., 2008), Stress Reaction Checklist Exposure Scale (Sadeh et al., 2008), Difficulties in Emotion Regulation Scale (Graz & Roemer, 2004), Parental Playfulness Questionnaire (Shorer et al., 2021)	Stress, parental emotional regulation	Medium

(continued)

TABLE 3 (CONTINUED)

Study	Sample Age Gender (percentage) Race/ethnicity Country	Data collection date Method	Measures/outcomes (citations provided for validated scales)	Mental health focus	Quality appraisal
Spinelli et al. (2021)	810 parents of children ages: 2–14 years ($M = 7.16$ years) Male (50) Race/ethnicity not provided Italy	April 2–7, 2020 Online survey	Socioeconomic risk index (Spinelli et al., 2020), Quarantine Parent Risk Index (Spinelli et al., 2020), Parenting Stress, Index Short form (Abidin, 1995), Family Involvement from Parent Report form CHIP- Child Edition (Riley et al., 2004), CHAOS-chaos, Hubbub, and Order Scale (Matheny et al., 1995), Emotion regulation checklist (Molina et al., 2014) Author created questionnaire related to demographics and parent/child COVID-19 discussions	Emotion regulation	Medium
Tambling et al. (2021)	210 parents of children ages: 0–5 years (25.2%), 6–11 years (36.7%), 12–18 years (37.6%), Male (52.2%), female (47.8%) White (85.7%), Black (26%), Asian American (8%), American Indian/Alaska Native (2%) United States	April 27–28, 2020 Demographic survey & qualitative question		Child stress and management	High
Tang et al. (2021)	4,342 students 6–17 years ($M = 11.86$ years) Male (51%), female (49%) Race/ethnicity not provided China	March 13–23, 2020 Online survey	Depression, Anxiety, and Stress Scale-Chinese version (DASS-21; Wang et al., 2016), author created questions related to life satisfaction, perceived impact of home quarantine, and parent-child discussions on COVID-19	Depression, anxiety, stress	High
Tardif-Grenier et al. (2021)	895 adolescents 12–17 years ($M = 14.7$ years) Female (73%), male (27%) Race/ethnicity not provided Canada	April 8–30, 2020 Survey	Center for Epidemiologic Studies Depression scale (CES-D), The Screen for Child Anxiety Related Disorders-Revised-French version (SCARED-R; Birmaher et al., 1999; Martin & Gosselin, 2012; Muris et al., 2012)	Depression, anxiety, stress	High
Tierolf et al. (2020)	159 families with child ages: 3–18 years (mean not provided) Gender not provided Race/ethnicity not provided Netherlands	January to March 2020 Mixed methods (interviews/survey)	Revised Conflict Tactics Scale Parent Child (Straus et al., 1998), Revised Conflict Tactics Scale-2 (Straus et al., 1996), Security in the Interparental Subsystem (Davies et al., 2002), Trauma Symptom Inventory (Briere, 1996), European School Survey Project on Alcohol and Other Drugs (Guttmansson et al., 2015), Impact of coronavirus crisis on family safety (Tierolf et al., 2020)	Trauma, domestic violence, emotional security	Medium
Tso et al. (2022)	29,202 families with children ages: 2–12 years ($M = 6.5$ years) Male (51.43%), female (48.57%) Race/ethnicity not provided Hong Kong	Date not specified Online survey	Author created questionnaire related to health and well- being of children/parents and changes in lifestyle habits of children during lockdown, Chinese Parent- Child Interaction Scale (Ip et al., 2018), Strength and Difficulties Questionnaire (Lai et al., 2010), Pediatric Quality of Life Inventory 4.0 Generic Core Scales (Chan et al., 2005), Parental Stress Scale (Leung & Tsang, 2010)	Emotions, behavior, hyperactivity, peer relations, parent stress	Medium
Wasdelewski et al. (2020)	950 youth 14–24 years ($M = 18.9$ years) Male (38.7%), female (61.1%), other (9.2%) Asian (13.7%), Black (9.5%), White (63.8%), other race (13.1%), Hispanic ethnicity (12.2%), non-Hispanic ethnicity (87.8%) United States	March 20, 2020 National text message poll	Author created open-ended survey related to youth opinions on salient health and policy issues	Coping behaviors	Medium

(continued)

TABLE 3 (CONTINUED)

Study	Sample Age Gender (percentage) Race/ethnicity Country	Data collection date Method	Measures/outcomes (citations provided for validated scales)	Mental health focus	Quality appraisal
Werling, Walitza, & Drechsler (2021)	126 parents of patients ages: 10–18 years ($M = 13.21$ years) Male (74.6%), female (25.4%) race/ethnicity not provided Switzerland	May to July 2020 Survey	Problematic Use of the Internet (PUI)-Screening Questionnaire for Children and Adolescents (Werling, Walitza, Grünblatt, et al., 2021), European Coronavirus Health Impact Survey 3.2 (Werling, Walitza, Grünblatt, et al., 2021)	Children/adolescents with ADHD	High
White et al. (2021)	3,502 parents/caregivers of children with ASD ages: 5–18 years ($M = 11.8$) Male (80%), female (20%) White (80%), Black (4%), Asian (2%), other (3%), multiracial (10%) United States	April 2020 Survey	Brief Family Distress Scale (Weiss & Lunsky, 2010), author created questionnaire to assess the impact of COVID-19 on the autism community	ASD symptoms	Medium
Wilner et al. (2020)	244 carers of adults/children with and without intellectual disabilities ages: <18 years (with disability, $M = 11.2$ years; without disability, $M = 7.4$ years) with disability: female (29%), male (71%); without disability: female (56%), male (44%) Race/ethnicity not provided United Kingdom	28 April to June 5, 2020 Online survey	Shortened Ways of Coping questionnaire (Hatton & Emerson, 1995), Adapted Family Support Scale (Dunst et al., 1984), Measures of Anxiety scale (Kroenke et al., 2001), Short Defeat and Entrapment scale (Griffiths et al., 2015), Objective Stress scale (Willner et al., 2020)	Stress, coping strategies, social support, anxiety, depression	Medium
Xiang et al. (2020)	2,427 students 6–17 years (mean not provided) Male (51%), female (49%) Race/ethnicity not provided China	January to March 2020 Survey	Children's Depression Inventory - Short Form (CDI-S; Kane et al., 2015)	Depression symptoms	High
Xiao et al. (2020)	1,680 students Grades 7–12 (age not provided) Male (51%), female (49%) Race/ethnicity not provided China	April 2020 Survey	Profile of Mood-short form, Chinese version (POMS; Zhu, 1995), Leisure-Time Exercise Questions (Godin, 2011), author created questions related to screen time and conflicts with parents	Tension, depression, anger, fatigue, confusion, vigor	High
Xue et al. (2021)	1,650 students Grades 2–6 (age not provided) Male (56.6%), female (43.4%) Race/ethnicity not provided China	February to March 2020 Online survey	Knowledge, Attitudes, and Practices about COVID-19 (KAP) (Xue et al., 2021), Children's Depression Inventory - Short Form (Ahlen & Ghaderi, 2017), Child Anxiety Related Emotional Disorders (Birmaher et al., 1999)	Depression, anxiety	High
Yang et al. (2020)	286 students Grades 10–12 (mean not provided) Male (46.2%), female (53.8%) Race/ethnicity not provided China	February to March 2020 Survey	Author created questionnaire adapted from (Chinese version) the Child's Reaction to Traumatic Events Scale (Chen & Lai, 2012), Connor-Davidson Resilience Scale (Campbell-Sills & Stein, 2007; Cheng et al., 2020), Cognitive Emotion Regulation Scale (Jermann et al., 2006; Zhu et al., 2008), World Health Organization Quality of Life Scale (Zhang et al., 2013)	Psychological trauma, resilience, positive emotion regulation, mental health	High
Yue et al. (2020)	1,360 parent-child dyads Age not provided ($M = 10.56$ years) Male (53.97%), female (46.03%) Race/ethnicity not provided China	February 13–29, 2020 Online survey	Self-rating Anxiety Scale (Zung, 1971), Center for Epidemiologic Studies Depression Scale for Children (Fendrich et al., 1990), Self-Rating Depression Scale (Zung et al., 1965), PTSD checklist for DSM-5 (Weathers et al., 2013), Media exposure (Yue et al., 2020)	Anxiety, depression, PTSD	Medium

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TABLE 3 (CONTINUED)

Study	Sample Age Gender (percentage) Race/ethnicity Country	Data collection date Method	Measures/outcomes (citations provided for validated scales)	Mental health focus	Quality appraisal
Zengin et al. (2021)	309 children 9–12 years (mean not provided) Male (52.1%), female (47.9%) Race/ethnicity not provided Turkey	May to June 2020 Survey	State-Trait Anxiety Inventory for Children (STAI-C; Ozusta, 1995)	Depression, anxiety symptoms	High
Zhang, Ye, et al. (2020)	1,025 junior/high school students $M = 13.93$ years/ $M = 17.08$ years 493 junior high school students (48.5% male), 532 high school students (54.3% male) Race/ethnicity not provided China	April 7–24, 2020 Survey	Brief Resilience Scale (Smith et al., 2008), Coping Style Questionnaire (Xie, 1998), Impact of Event Scale - Revised (Wu & Chan, 2003), Depression Anxiety Stress Scale DASS-21 (Ho et al., 2019)	Coping, resilience, depression, anxiety, stress, trauma	High
Zhang, Zhang et al. (2020)	1,241 students 9.3–15.9 years ($M = 12.6$ years) Male (59.3%), female (40.7%) Race/ethnicity not provided China	November 2019, May 2020 Online survey	Mood and Feelings Questionnaire (Costello & Angold, 1988), MacArthur Health & Behavior Questionnaire (Boyce et al., 2002), Non-suicidal Self-injury (Wan et al., 2015), Youth Risk Behavior Surveillance System (Wan et al., 2019)	Depression, anxiety, suicide	High
Zhou et al. (2020)	8,079 adolescents 12–18 years (median = 16 years) Male (46.5%), female (53.5%) Race/ethnicity not provided China	March 8–15, 2020 Online survey	Familiarity with COVID-19 symptoms and prevention (Zhou et al., 2020), Patient Health Questionnaire - PHQ 9 (Spitzer et al., 1999), Generalized Anxiety Disorder scale - GAD-7 (Spitzer et al., 2006)	Depression, anxiety	High

Note. ADHD = attention-deficit/hyperactivity disorder; ASD = autism spectrum disorder; CDC = Centers for Disease Control and Prevention; COVID-19 = coronavirus disease 2019; ED = emergency department; HIV = human immunodeficiency virus; NDD = neurodevelopmental disorder; OCD = obsessive-compulsive disorder; ODD = oppositional defiant disorder; PTSD = posttraumatic stress disorder; PTSS = posttraumatic stress syndrome; TD = typically developing.

the factor that had the biggest impact on the psychological well-being of the mothers and children in their study during lockdown was the quality of their sleep.

Increased Technology, Internet, Device, and Social Media Use. In Zengin et al.'s (2021) study, 71.8% of children reported increased Internet use. The vast majority (69.3%) of parents in Adibelli and Sümen's (2020) study reported increased Internet use by their children, whose self-esteem and emotional well-being scores were negatively associated with higher Internet use. Duan et al. (2020) found that 29.6% of children and adolescents in their sample reported spending more than 5 hours online daily (an increase from prepandemic), with 6.03% reporting use to the point of Internet addiction. Increased Internet use was significantly associated with clinical depressive symptoms. Al Omari et al. (2020) similarly found that adolescents in their sample reported spending an average of 5.64 hours on the Internet prepandemic, which increased to 9.74 hours after its onset, and that depression, anxiety, and stress were significantly associated with the amount of time spent online.

Salzano et al. (2021) found that their adolescent sample spent an average of 6 hours per day on devices for educational purposes and 4 to 6 hours for recreation after the outbreak. Tso et al. (2022) found that the amount of time spent on devices for recreation increased, particularly for children 6 to 12 years of age, by approximately 1 hour after school closures. Additionally, they found that the emotional benefits of exercise were curbed by lowered physical activity associated with increased screen time. Parents in Omer et al.'s (2021) study considered increased screen time for their children to be "a matter of great concern" (p. 50). Chen et al. (2021) found an increase in Internet gaming addiction after the beginning of the pandemic, which was significantly correlated with rates of depression, anxiety, and stress. Moulin et al. (2021) found that increased screen time was associated with higher risk for depression, anxiety, inattention, and suicidal thoughts in children and adolescents.

Lockdown measures led adolescents in particular to increase their use of social media to stay connected with their peers (Buzzi et al., 2021; O'Brien et al., 2021; Salzano et al., 2021). Drouin et al. (2020) found that parents reported heightened social media use for their adolescent children and themselves, although this was less pronounced for higher socioeconomic status (SES) families. They also found that children with higher levels of anxiety used social media more frequently. Adolescents in Murata et al.'s (2021) study who spent more time on social media were more likely to report moderate to severe symptoms of depression and anxiety. Chen et al. (2021, p. 4) found a significant association between "problematic social media use" and stress, depression, and anxiety.

Cauberghe et al. (2021) found that adolescents with higher reported loneliness were more likely to use social

media, but that use was not significantly associated with their levels of happiness, suggesting it was not a sufficient substitution for in-person interactions. Still, the authors noted that it tended to show positive coping effects for participants with higher reported initial levels of anxiety during the pandemic. Their findings suggested that peer connection through social media use was the most beneficial strategy for adolescents to emotionally self-regulate. Similarly, Li, Zhang, et al. (2021, p. 9) found that although increased screen time tended to be associated with psychological distress, this relationship tended to no longer be evident when screen time was used to connect with family and friends, and was instead associated with lower levels of loneliness and higher well-being. These findings suggest that social media use, although potentially detrimental to student mental health, can also be a positive coping strategy when used in moderation.

Theme 2: Connections Between Caregiver and PK–12 Student Mental Health

Similar to PK–12 students, caregivers saw their lives disrupted by the pandemic. This included loss of childcare (Jansen et al., 2021), stresses associated with employment disruptions (Akinsanya et al., 2021; Moulin et al., 2021), and concerns about the threat to their children and themselves (Bailey et al., 2021). Generally, caregivers who were more directly affected by COVID-19 were found to experience higher levels of parenting stress (Bentenuto et al., 2021) depression (Feinberg et al., 2021), and anxiety (Lee, Ward, Lee, et al., 2021), leading to harsher parenting practices (Chung et al., 2020; Feinberg et al., 2021). During the pandemic, the mental health of caregivers worsened when they encountered economic stress (Ares et al., 2021; Patrick et al., 2020; Tierolf et al., 2020), which corresponded to lower responsiveness to the mental health needs of children (Akinsanya et al., 2021). Caregivers felt overwhelmed by home schooling during lockdown, causing exhaustion, stress, and anxiety (Greenway & Eaton-Thomas, 2020; Patrick et al., 2020). Parents had to adjust to working from home or stop working completely to help take care of children, negatively affecting their mental health (Egan et al., 2021; Lee, Ward, Chang, et al., 2021; Spinelli et al., 2021). Additionally, research showed that the mental health of caregivers of children with special needs was particularly affected by the pandemic, including increased feelings of anxiety, depression, and defeat due to disrupted access to support (Tso et al., 2022; Willner et al., 2020).

Parent-Child Relationships. Research showed that challenges associated with lockdown, home-schooling, and economic stressors may have impacted the nature of interactions between caregivers and their children, both positively and negatively (Tang et al., 2021).

Negative Changes in Family Relationships. Pandemic-related stress led to a diminished ability by caregivers to respond to the emotional needs of children (Spinelli et al., 2021). Bérubé et al. (2020) found that this was particularly true of caregivers of teenagers. Caregivers in Chung et al.'s (2020) study also reported increased parenting harshness and decreased closeness with children. Raviv et al. (2021) found significant correlations between mental health decreases in caregivers and children.

Similarly, the lockdown led to perceived increases in family conflict (Li, Zhang, et al., 2021; Ravens-Sieberer et al., 2021; Raviv et al., 2021; Scott et al., 2021; Tardif-Grenier et al., 2021). Research showed that LGBTQ youth expressed particular concerns about conflict with parents, especially if they had not disclosed their gender identities or sexual orientations, leading them to be more likely to disregard physical distancing to meet social needs during lockdown (Nelson et al., 2020). Perceived increases in familial conflict was related to higher depressive symptoms and loneliness (Rogers et al., 2021) and increasing externalizing behavior (Ravens-Sieberer et al., 2021) in youth. Rogers et al. (2021) found that adolescents with depressive symptoms were more likely to perceive their social relationships as negative if they experienced family conflict during the pandemic. However, O'Brien et al. (2021) found that peer support buffered the effects of negative family relationships.

Lee, Ward, Chang, et al. (2021) conducted a cross-sectional survey in the United States, finding that one fifth of parents in their sample had spanked or hit their children, and had done so more often since the pandemic. Parent job loss and depression increased the likelihood of reported emotional or physical abuse and verbal aggression. Parents also reported that social isolation was a factor for their increased use of discipline, yelling, and leaving children alone or using physical punishment. Lawson et al. (2020) similarly found that job loss, depression, and prior maltreatment were associated with increased probability of physical and psychological abuse during the pandemic.

Positive Relationship Outcomes. Research also showed that lockdown measures provided an opportunity for increased family relationship building (Penner et al., 2021), leading to reduced psychosocial problems in children (Tso et al., 2022). Tierolf et al. (2020) found that PK-12 children who had previously experienced tension at home reported that conflict with caregivers and siblings had either maintained or decreased during the pandemic. Additionally, Buzzi et al. (2020) found that adolescents in their sample reported higher levels of communication with parents during the pandemic. Parents in Greenway and Eaton-Thomas's (2020) study reported enjoyment in supporting home schooling during lockdown. Research also showed caregivers spending more time playing games with their children (Lee, Ward,

Lee, et al., 2021) or eating meals as a family (Jansen et al., 2021). Children with strong familial ties saw their family as a source of support and comfort during COVID-19 (Cao et al., 2021; Penner et al., 2021). In addition, Lawson et al. (2020) found that strong family connections could mitigate the negative effects of caregiver job loss on the mental health of their children.

Caregiver Perceptions of Child Mental Health. Caregivers often reported that their children's emotions changed since the pandemic (Ares et al., 2021; Raviv et al., 2021). Parents in Tambling et al.'s (2021) study reported that their children felt bored, afraid, depressed, and stressed. About 18% of parents in Sama et al.'s (2020) study reported that their children showed symptoms of depression and anxiety, and 75% reported increased signs of irritation, attributing the mental health changes to shifts in diet, sleep, and technology use. These findings suggest broad mental health impacts of the pandemic on PK-12 students, as explored in the following section.

Theme 3: The Broad Impacts of the COVID-19 Pandemic on PK-12 Student Mental Health

Research showed that the pandemic led to widespread increases in fear, anxiety, depression, loneliness, and behavioral issues in PK-12 students. In a longitudinal study, Hussong et al. (2021) found that although only 3.3% of young adolescents demonstrated "problematic symptoms" related to mental health before COVID-19, that number increased to 22.9% during the pandemic. Similarly, 47.5% of adolescents in Pisano et al.'s (2021) study reported experiencing some level of anxiety, 14.1% reported experiencing depression, and 26.7% experienced some level of general psychopathology. Dewa et al. (2021) also found that 30% of adolescents in their U.K. sample reported poor anxiety and worsening mood. Leeb et al. (2020) found that the number of mental health-related emergency department visits among U.S. children increased from March to October 2020 compared with the same time span in 2019. In a study by Qin et al. (2021) using survey data from 1.2 million Chinese students, 10.5% of children and adolescents reported psychological distress. The increased prevalence of youth mental health challenges during the pandemic was pronounced across contexts and cultures.

Depression and Suicidality. Between 14% and 33% of samples reported experiencing symptoms above the threshold for clinical depression (Asanov et al., 2021; Duan et al., 2020; Gazmararian et al., 2021; Pisano et al., 2021; Zhang, Ye, et al., 2020). Al Omari et al. (2020) found that 64.8% of their sample in Saudi Arabia experienced depression. Contrarily, Xiang et al. (2020) found that depressive symptoms were lower during lockdown compared with prepandemic in their elementary and adolescent-aged sample. Murata et al.

(2021) found that 37% of the adolescents in their sample reported suicidal ideation and 1.7% had attempted suicide during COVID-19. Contrarily, Penner et al. (2021) found a decline in suicide rates during stay-at-home orders. O'Brien et al. (2021) found that sexual-minority adolescents were more likely to report suicidal ideation than cisgender youth.

Anxiety. Numerous studies noted increased anxiety. Almost half the adolescents from Al Omari et al.'s (2020) and Pisano et al.'s (2021) studies reported clinically relevant symptoms of anxiety. Other studies reported increased anxiety levels from pre-COVID-19 with prevalence rates around one fifth of the samples (Cheah et al., 2020; Waselewski et al., 2020). Researchers found that anxiety was related to negative attitudes about COVID-19 (Xue et al., 2021), negatively associated with happiness (Cauberghe et al., 2021), and positively correlated with depression (Duan et al., 2020). Additionally, youth reported higher anxiety than their parents (Cheah et al., 2020; Yue et al., 2020). Fear of COVID-19 also posed a unique mental health challenge for youth (Dewa et al., 2021; Di Giorgio et al., 2021; Ravens-Sieberer et al., 2021; Scott et al., 2021; Seçer & Ulaş, 2021; Shek et al., 2021). Students feared that contracting COVID-19 would be "extremely or very serious" (Gazmararian et al., 2021, p. 358). However, student concerns were often more focused on family members becoming ill rather than themselves (Gazmararian et al., 2021; Pisano et al., 2021).

Loneliness. Research clearly indicated that the pandemic-related social isolation had negative implications for youth mental health. Magson et al. (2021) found that isolation was the most distressing issue for adolescents in their sample. Similarly, 70.2% of adolescents in Salzano et al. (2021, p. 2) study reported that self-isolation "strongly influenced" their everyday life, whereas only 6.8% indicated that they were unaffected. They also widely reported feelings of fear, anxiety, and discouragement. Similarly, adolescents in Rogers et al.'s (2021) study considered social isolation to be "distinctly challenging" (p. 48). Oosterhoff et al. (2020) found that the majority of their U.S. sample indicated prosocial motivations for isolation, including social responsibility (78.1%) and not wanting to infect others (77.9%). The 57.8% who were motivated to protect personal health also tended to report higher anxiety. In addition to peers, students missed contact with caring adults (Idoiaga Mondragon et al., 2021). Although the mental health effects of social isolation may be particularly pronounced for adolescents, parents also perceived feelings of loneliness and missing peers in their pre-K through elementary-aged children (Egan et al., 2021).

Research indicated that social isolation had several corresponding mental health impacts, including greater conflict with siblings (Magson et al., 2021) and peers (Rogers et al., 2021), as well as depression (Chen et al., 2020; Rogers et al., 2021; Scott et al., 2021), stress (Cost et al., 2021; Li, Beames,

et al., 2021; Tambling et al., 2021), and anxiety (Idoiaga Mondragon et al., 2021). Drouin et al. (2020) found that 86.2% of parents in their U.S. sample felt that social distancing measures had some negative impact on the mental health of their children. Social isolation was associated with stress and decreased mental health in two thirds of the child and adolescent participants in Cost et al.'s (2021) study. Similarly, Magson et al. (2021) found that feelings of disconnection were associated with increasing depressive symptoms, anxiety, and life satisfaction. Murata et al. (2021) found that loneliness was the most salient predictor of all psychiatric outcomes for adolescents.

Behavioral Issues. Research commonly showed behavioral changes during social distancing. For example, in Sama et al.'s (2020) study with 400 parents in India, a majority reported that their children quarreled more often and appeared more irritable, anxious, and depressed. Several studies found that children were much more likely to externalize behavior during the pandemic (Bentvenuto et al., 2021; Feinberg et al., 2021; Ravens-Sieberer et al., 2021). This included "acting out, throwing objects, and hitting," more commonly in boys than girls (Browne et al., 2021, p. 70). Moulin et al. (2021) conducted a longitudinal study assessing the emotional difficulties and symptoms of hyperactivity and inattention of children living in France during lockdown. One fourth of parents reported an increase in hyperactivity and inattention in their children. Although the preceding evidence of the broad mental health impacts of the pandemic is striking, research also highlighted students who will be in need of particular support, as discussed in the following section.

Theme 4: Students Whose Mental Health Was Particularly Affected by the COVID-19 Pandemic

Research noted differential mental health impacts by age, gender, race and ethnicity, culture, and SES, as well as considerations for students with existing mental health challenges or disabilities.

Age Differences. Although the pandemic has affected children and adolescents alike, research noted age differences. Cost et al. (2021) conducted a cross-sectional study with 1,013 parents of children aged 2 to 18 years and found that 66.1% of children aged 2 to 5 years and 70.2% of those aged 6 to 18 years reported deterioration across at least one domain (depression, anxiety, irritability, attention, hyperactivity, or obsessive-compulsive behavior), which was strongly associated with social isolation. Children younger than 5 years experienced the lowest rate of deterioration and the highest rate of improvement, indicating that the mental health impacts of the pandemic were strongest for school-aged children. Parents in Egan et al.'s (2021) study reported

that younger children were significantly more likely to miss school than children older than 6 years, although they also had significantly lower scores for missing their friends than the older children.

Even with the ability to connect with others virtually, adolescents reported a decrease in emotional connection and support with friends, which was highly distressing (Magson et al., 2021; Mensi et al., 2021; O'Brien et al., 2021; Rogers et al., 2021). In Cost et al.'s (2021) study, adolescents were most likely to experience higher inattention, hyperactivity, obsession, and compulsion. Leeb et al. (2020) found that youth aged 12 to 17 years had the highest prevalence of mental health-related emergency department visits during the pandemic. Adolescents in Murata et al.'s (2021) study reported higher symptoms of depression, anxiety, PTSD, stress, and sleep problems than adults. The majority (75.9%) of the approximately 400 adolescents in Rogers et al.'s (2021) study reported feeling challenged by their inability to interact in person with friends and some family members, with corresponding significant increases in depression, anxiety, and loneliness.

Zhang, Ye, et al. (2020) found that anxiety symptoms were slightly higher for high schoolers (28.4%) than junior high schoolers (25.4%). Zhou et al. (2020) found that grade level was increasingly predictive of depression and anxiety in high school in their survey of more than 8,000 Chinese adolescents. Similarly, fourth-year high school students in Scott et al.'s (2021) qualitative study reported more concerns about the future than students in lower grades. Conversely, Gazmararian et al. (2021) found that high school students in lower grades reported higher incidences of feeling anxious, depressed, and stressed than students in higher grades.

Gender Differences. Research consistently showed that female students experienced higher levels of depression and anxiety than male students during the pandemic (Asanov et al., 2021; Chen et al., 2020; Gazmararian et al., 2021; Liu, Yue, et al., 2021; Magson et al., 2021; Pisano et al., 2021; Qi et al., 2020; Tardif-Grenier et al., 2021; Xiao et al., 2020). Male students in Scott et al.'s (2021) study were most concerned with issues related to academics, work habits, and their future, while female students reported the most concerns with friends and family. Sexual minority youth reported particular challenges with mental health (Hawke et al., 2021; Nelson et al., 2020; Scott et al., 2021). Similarly, O'Brien et al. (2021) found that sexual minority youth were at greater risk for disturbance in their overall well-being, social isolation from peers, disconnection from supportive resources, and confinement with unsupportive family members with corresponding increases anxiety, depression, and suicidal ideation.

Racial, Ethnic, and Cultural Differences. Research showed that youth from minoritized racial and ethnic groups are at

increased risk for mental health issues related to COVID-19. Gazmararian et al. (2021) found that Black and Latinx high school students from Georgia were significantly more likely than White students to feel very or extremely worried about the pandemic. Similarly, Black, Latinx, and low-income families reported disproportionately high rates of COVID-19 stressor exposure in Raviv et al.'s (2021) study. Yet Black, Latinx, and low-income families also demonstrated resilience as they were less likely to report mental health concerns and more likely to report positive adjustments than White and more affluent households. Similarly, Penner et al. (2021) found that Latinx adolescents often demonstrated resilience during COVID-19, as collectivistic cultural norms may have served as protective factors.

Systemic racism also likely contributed to disproportionately high COVID-19 stressors for minoritized communities (Raviv et al., 2021). Cheah et al. (2020) explored the mental health impacts of pandemic-related racism toward Chinese Americans through a survey of 543 parents and their children. They found that 31.7% of parents and 45.7% of youth reported experiencing direct racial discrimination at least once online, and more than 50% of each reported experiencing in-person discrimination. Anxiety and depressive symptoms were significantly associated with all types of discrimination.

Socioeconomic Differences. Children from low-SES backgrounds may be at greater risk for experiencing psychological distress during the pandemic (Ravens-Sieberer et al., 2021). Research suggests that this may be related to greater challenges from lower-income families to meet the social and safety needs of children (Akinsanya et al., 2021). Students in Rogers et al.'s (2021) study from urban low-income households perceived greater overall impacts of COVID-19 on their lives. Qin et al. (2021) and Gazmararian et al. (2021) found that lower SES students reported higher levels of pandemic-related distress. Moulin et al. (2021) found that emotional difficulty, hyperactivity, inattention, and anxiety were more pronounced during the pandemic for students from lower SES backgrounds. Similarly, Al Omari et al. (2020) found that students from less wealthy families reported higher levels of depression, anxiety, and stress. In a study by Ares et al. (2021), low-SES parents were more likely than higher SES parents to report that their children were more demanding and experienced greater mood changes during social distancing.

Connection With Existing Disabilities or Mental Health Issues. Youth with preexisting mental health disorders may be at greater risk for depression, anxiety, PTSD, and suicide during the pandemic (Moulin et al., 2021; Nissen et al., 2020; Penner et al., 2021; Pisano et al., 2021; White et al., 2021). The majority of youth in Li, Beames, et al.'s (2021) study reported worsening mental health during the pandemic, including higher levels of depression, anxiety, technology

use, loneliness, and distress, as well as less exercise and sleep. This was more pronounced for those with previous mental health diagnoses. Nonweiler et al. (2020) found that children with neurodevelopmental disorders, particularly autism spectrum disorder and attention-deficit/hyperactivity disorder (ADHD), showed particular increases in conduct and emotional regulation issues during the pandemic. In a similar study by Greenway and Eaton-Thomas (2020), U.K. parents who chose to home-school their children with special needs (primarily autism spectrum disorder and/or ADHD) reported worsening behavioral, emotional, and social problems associated with the disability. Research also showed that youth with ADHD experienced exacerbated inattention and hyperactivity (Werling et al., 2021), which was mitigated by maintaining routines (Becker et al., 2020) and healthy sleeping patterns (Çetin et al., 2020).

Trauma. Adolescents with histories of trauma may find those challenges compounded, particularly if they experienced a scarcity of accessible resources during the pandemic (Guo et al., 2020). In a cross-sectional study of Chinese adolescents during quarantine, Guo et al. (2020) collected data about their prior adverse childhood experiences. Those who had experienced maltreatment prior to COVID-19 reported higher levels of posttraumatic stress symptoms and anxiety during the data collection period. Encouragingly, Yang et al. (2020) found that psychological trauma caused by lockdown in the COVID-19 pandemic was mediated by resilience and positive emotion regulation of students.

Obsessive-Compulsive Disorders (OCD). Nissen et al. (2020) found that children and adolescents with a diagnosis of OCD who had a connection to mental health support during the pandemic experienced less distress than those who did not, whereas social isolation worsened OCD behaviors. They also found that media coverage about COVID-19 increased anxiety in children with OCD who grew concerned that a loved one would become ill or die. In their adolescent sample, Seçer & Ulaş (2021) found that the effect of fear of COVID-19 on OCD symptoms was mediated by emotional reactivity, experiential avoidance, and depression-anxiety.

Theme 5: Resilience and Coping in Response to the COVID-19 Pandemic

Research showed that PK–12 youth used different coping strategies for dealing with the pandemic and its associated stressors, which were sometimes maladaptive but other times beneficial.

Negative Coping Strategies. Dewa et al. (2021) found in their mixed-methods study with U.K. adolescents that poor mental health was negatively associated with positive reframing and acceptance but positively associated with

self-blame, substance use or abuse, venting, denial, and disengagement as forms of coping. Similarly, Duan et al. (2020) found that emotion-focused coping was associated with depression symptoms, and O'Brien et al. (2021) found that adolescents reported negative coping mechanisms, including alcohol, drugs, and social isolation.

Dumas et al. (2020) found in their sample of Canadian adolescents that the number of participants who used alcohol did not increase significantly from before to during COVID-19, but that frequency of use did (similar for cannabis use). Of the respondents indicating substance use during the pandemic, 49.3% did so alone, while 31.6% used substances during online video-conferencing with friends and 23.6% did so face to face despite social distancing requirements. Adolescents with higher reported fears of COVID-19 and depressive symptoms were significantly more likely to use substances alone.

Positive Coping Strategies. Several studies explored positive coping strategies and evidence of resilience in students in the face of pandemic-related adversity. For example, Zhang, Lee, et al. (2020) found that positive coping and resilience were associated with decreased symptoms of depression, anxiety, and stress for adolescents, stating that these strategies “can enhance mental health by promoting an individual’s sense of control over a chaotic environment” (p. 753). They also found that students from higher SES backgrounds were more likely to use positive coping strategies. Research showed that humor and problem-focused coping had positive mental health benefits for students (Cauberghe et al., 2021; Duan et al., 2020). Qualitative results from Dewa et al.’s (2021) study showed that participants used positive coping strategies such as self-distraction, talking to people, exercising, sticking to routine, and focusing on school work.

Positive Mental Health Outcomes. Although the literature overwhelmingly showed that PK–12 student mental health suffered during COVID-19, some studies highlighted positive outcomes. Students reported that they appreciated time at home with parents and having autonomy over their day (Rogers et al., 2021; Xiang et al., 2020). Research showed that virtual learning was sometimes associated with positive mental health effects. For example, peer stressors related to in-person instruction that were removed during virtual instruction sometimes corresponded with lower academic pressures (Penner et al., 2021; Xiang et al., 2020). Jones et al. (2021) found that removal of social pressure to conform to gender norms was especially important for gender diverse students.

Strategies for Addressing Mental Health Concerns During COVID-19. Many of the reviewed studies examined current practices for addressing mental health or made suggestions for interventions based on the findings. Because none were

intervention studies, these suggestions should be interpreted with that limitation in mind.

Exercise. Physical exercise proved to be a protective factor against depression, anxiety, and psychiatric disorders during the pandemic (McGuine et al., 2021). Qin et al. (2021) found that students who exercised more reported lower psychological distress. Parents also reported that their children engaged in exercises such as yoga, bicycling, dancing, and running as positive coping strategies (Tambling et al., 2021; O'Brien et al., 2021). Lindell-Postigo et al. (2020) found that social isolation negatively affected adolescents by decreasing self-concept but that physical activity helped mitigate this impact. Similarly, Chen et al. (2020) found that physical exercise showed a significant negative relationship with depression and anxiety, suggesting a protective effect for youth mental health during the pandemic.

Strategic Use of Technology and Social Media. During the pandemic, youth sought information, social connection, and emotional support through social media (Drouin et al., 2020; Tambling et al., 2021; Tardif-Grenier et al., 2021). Students in Gazmararian et al.'s (2021) study reported that using social media helped them cope with stress. Zhou et al. (2020) found that using technology to stay informed about the pandemic was a protective factor against depression and anxiety. However, several studies found that excessive exposure to media coverage about the pandemic could be harmful for youth mental health (e.g., Ares et al., 2021; Duan et al., 2020; Magson et al., 2021; Yue et al., 2020).

Adaptation of Routine. Tambling et al. (2021) found that daily routine and engagement in new activities at home were helpful for stress management. Similarly, Spinelli et al. (2021) found that familiar routines were highly important for fostering positive interactions between parents and their children during the lockdown. Additionally, Tardif-Grenier et al. (2021) found that adolescents reported fewer sleeping problems, as well as lower depression and loneliness when completing schoolwork, serving as a protective factor against boredom and ruminating.

Creative Outlets. Studies showed several types of creative activities that children engaged in during the lockdown, including art, listening to music, reading, and playing freely (Idoiaga Mondragon et al., 2021; O'Brien et al., 2021; Tambling et al., 2021; Zengin et al., 2021). All were found to be related to emotional and physical benefits for children.

Social and Family Support. Qi et al. (2020) found that "adolescents with low social support showed 4.2 times greater risk of depression symptoms and 3.2 times greater risk of anxiety symptoms than those with high social support" (p. 517). Relatedly, Magson et al. (2021) found that

life satisfaction during the pandemic was supported through social connections. Interestingly, Tierolf et al. (2020) found that decreased availability of support systems such as social workers or daycare led to some parents increasing their own emotional regulation and improving family connections. Research showed that early detection of potential mental health challenges in youth and offering corresponding support was beneficial in reducing severity (Qin et al., 2021; Ravens-Sieberer et al., 2021).

Conclusion

The themes across the synthesized literature illustrate how the pandemic has had broad and profound impacts on the mental health of PK-12 youth, making this an urgent priority for schools to address. The following section discusses the implications of these findings, including considerations for school-based mental health professionals and other educators as well as recommendations for future research in the emergent field of COVID-19-related mental health challenges in students.

Discussion

The literature is clear that the pandemic proved massively disruptive to youth and their families in nearly every facet of their lives, with corresponding physical (e.g., Adibelli & Sümen, 2020; Sama et al., 2020) and mental health consequences (e.g., Magson et al., 2021; Raviv et al., 2021). Furthermore, research offered a direct link between the mental health of caregivers and their children during the pandemic (e.g., Ares et al., 2021; Tambling et al., 2021), suggesting that any youth interventions should be mindful of the well-being of caregivers as well. Evidence of crescendoing anxiety and depression levels in students (e.g., Pisano et al., 2021; Rogers et al., 2021) suggests that schools not only need to be considerate of the extra psychological burdens their students may be experiencing but also ensure they are adequately staffed to meet those needs.

At the same time, the literature showed that adolescents seemed to be more susceptible overall to the mental health impacts of the pandemic (Cost et al., 2021; Magson et al., 2021; O'Brien et al., 2021), as were female students (Asanov et al., 2021; Chen et al., 2020; Gazmararian et al., 2021; Liu, Yue, et al., 2021; Xiao et al., 2020), and low-SES students (Akinsanya et al., 2021; Moulin et al., 2021), as well as students with preexisting disabilities (Greenway & Eaton-Thomas, 2020; Nonweiler et al., 2020), mental health disorders (Nissen et al., 2020; Penner et al., 2021), and histories of substance abuse (Dumas et al., 2020). Research also showed that communities of color navigated disproportionate exposure to COVID-19-related stressors (Cheah et al., 2020; Raviv et al., 2021). Encouragingly, although the literature showed some students engaging in maladaptive coping

strategies (Dewa et al., 2021; Duan et al., 2020), they often found ways to remain resilient (Caugherge et al., 2021; Duan et al., 2020; Zhang et al., 2020). School and district leaders must keep these trends in mind and remain committed to prioritizing student mental health as they work to regain some sense of normalcy in educational settings. Furthermore, researchers must continue to attend to the issues identified in the emerging literature on this topic. In the following sections we explore practical and theoretical implications.

Practical Implications

Although we will not fully understand the long-term impact for years to come, the synthesized literature to date offers important implications for educational practice and policy.

Teachers and School Leaders. Educators and district leaders should be mindful of the general prevalence of stress, anxiety, loneliness, behavioral issues, and depression brought on by the pandemic (Asanov et al., 2021). They should also recognize that student groups that have been particularly affected are also often the ones who experience enduring inequities that manifest in academic (Naff et al., 2021) and disciplinary disparities (Siegel-Hawley et al., 2019). The pandemic therefore presents a clear opportunity to prioritize the mental health of students, with particular attention to supporting the needs of marginalized student groups. Programs such as Positive Behavioral Interventions and Supports (Bal et al., 2012), restorative practices (Gregory et al., 2016), and trauma-informed care (Azeem et al., 2011) that help reduce exclusionary discipline (particularly for low-income students of color; Siegel-Hawley et al., 2019) could also prove useful in providing mental health support to students who have experienced renewed or compounding trauma during the pandemic. For example, restorative practices often focus on community building and emotional check-ins as a Tier 1 support for all students (Kervick et al., 2019). These strategies could prove advantageous in meeting the unique mental health needs of students during and after COVID-19. To that end, teachers and administrators should be mindful of how the pandemic has exacerbated behavioral challenges in students with prior diagnoses (Asanov et al., 2021) when making disciplinary decisions.

Although schools use school-based mental health providers (Jaycox et al., 2006) and often partner with community mental health supports (Naff et al., 2020), the preceding findings make it clear that the needs of students during and after COVID-19 may exceed the capacity of existing support systems. Thus, it will be critical for teachers to receive training in brief mental health supports like mindfulness (Belen, 2022) that help address the needs of students when counselors and other mental health personnel in schools are

overwhelmed. However, training teachers to be prepared to offer these supports should not deter from granting students ready access to school and community-based mental health providers.

School-Based Mental Health Providers. School counselors, social workers, and psychologists receive graduate-level training in mental health interventions. However, they often spend their time focused on other tasks such as academic advising (Fitzpatrick, 2020), testing (Hilts et al., 2019), truancy prevention (Rhodes et al., 2018), and psychological assessment (Benson et al., 2019). Consequently, they commonly report not having sufficient time to meet the mental health needs of their students (Hilts et al., 2019). Considering the clear and widespread psychological impact of the pandemic on PK–12 youth and the disrupted access that students had to counseling services during school closures, principals and district leaders should protect the limited time of school-based mental health providers so that they can prioritize student social and emotional support. They can do this by not assigning extraneous duties and setting district expectations that prioritize time spent in direct student mental health support.

Policy Implications

School boards and state legislatures will need to support policies that produce comprehensive mental health programs in schools in the wake of the pandemic. This includes providing funding for additional school-based mental health support personnel as well as contracted partnerships with community mental health providers who can respond to referrals. These policy-making bodies can also set guidelines for how much time school-based mental health providers such as counselors are allowed to spend on tasks that are extraneous to direct student support. Schools will need these professionals to maximize their availability as students continue to navigate stressors associated with COVID-19. Furthermore, it will be imperative that district leaders implement policies centered on prioritizing issues related to mental health. This could include incorporating breaks into the school calendar for students and staff to focus on personal needs. It could also include aforementioned professional development for teachers focused on strategies for addressing the mental health needs of their students during and after the pandemic. Finally, districts should establish policies and practices that support the mental health of educators who are struggling with their own pandemic-related challenges while continuously meeting the needs students, potentially leading to compassion fatigue (Yang, 2021). Although this literature review focused on the mental health impacts of COVID-19 on PK–12 students, educators have undoubtedly been affected as well and merit similar attention.

Theoretical Implications and Recommendations for Future Research

COVID-19 provided a natural comparison point to measure how traumatic disruptions to schooling affected PK–12 students' mental health. Correspondingly, the research covered in this review offered insights into the unique challenges associated with the pandemic either by comparing student outcomes prior to and after the outbreak (e.g., Magson et al., 2021) but more commonly to explore their experiences after its onset, thus limiting the ability to draw inferences about change over time. There is a clear need for additional longitudinal research spanning pre- and postpandemic to gain sufficient empirical evidence of the mental health impacts of COVID-19.

Additionally, the overwhelming majority of studies included in this review used survey methods, which is reasonable given the need to conduct rapid research at the onset of the pandemic. Future research should prioritize qualitative and mixed-methods studies that offer nuanced insights into the lived experiences of students and their perceptions of the impact of the pandemic on their mental health. This could also lead to deeper exploration of the experiences of students of color and low-income students who research suggests had disproportionate exposure to COVID-19-related stressors, but there is yet limited research evidence of how the pandemic has uniquely affected their mental health. Researchers should also seek opportunities to conduct experimental studies, not only by leveraging the pandemic as a natural comparison point, but also by exploring which interventions appear to be most beneficial for offering mental health support for students, particularly those most affected as identified in this review. Regardless of the methods used, it will be critical for researchers to continue to explore the mental health impacts of COVID-19, as they are likely to endure, and schools will be in need of evidence-based practices to respond in kind.

Limitations

In addition to the limitations discussed in the collected literature, there are a few others to note related to the methods used in this review. First, the final literature pull in this systematic review was conducted in mid-May 2021, excluding any relevant studies published since that date. Second, several studies in this review were based on parental perceptions of their children's mental health. Although these offered valuable insights into the connections between caregiver and student well-being, their perspectives likely included some biases or inaccuracies. Third, the research included in this review skewed toward offering insights about the experiences of adolescent students, perhaps because of the overwhelming reliance on survey methods that were often administered with secondary students. There are therefore relatively little insights gleaned about the experiences of pre-K and

elementary-aged youth outside of parent perspective. Finally, this review was intentional about excluding studies that did not focus specifically on PK–12 aged youth, omitting literature about the experiences of college students as well as PK–12 educators. Both of these populations are worthy of their own systematic literature reviews to offer evidence of how to best respond to their needs in unprecedented times.

Conclusion

Although the research on the mental health impacts of COVID-19 on PK–12 students is still emergent, the evidence presented herein is clear that the pandemic has proved massively disruptive and is likely to continue its influence for the foreseeable future. Those tasked with meeting this rising need will require an understanding of current trends that clearly illustrate the problem to properly ameliorate it. This review is intended as a starting point for future inquiry into this enduring issue, as well as an opportunity for policy makers and educational leaders to leverage empirical evidence when making decisions about how to best offer support. Perhaps most importantly, it is intended to guide the practice of school-based mental health providers as well as teachers who will be tasked with rising to the challenge of meeting this growing need in their students during and after COVID-19.

Authors' Note

Ms. Williams, Dr. Furman-Darby, and Dr. Young are co-second authors.

ORCID iD

Jenna Furman-Darby  <https://orcid.org/0000-0003-1072-3061>

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Authors

DAVID NAFF is the associate director of the Metropolitan Educational Research Consortium and an assistant professor of foundations of education in the School of Education at Virginia Commonwealth University. His research focuses on equitable access and support for advanced coursework across K–12 education, supporting mental health in schools, and promoting research use through researcher-practitioner partnerships.

SHENITA WILLIAMS is a PhD candidate in educational leadership, policy, and justice at Virginia Commonwealth University and a school social worker for Henrico County Public Schools. Her research focuses on developing school-based mental health systems that meet the unique cultural needs of Black students.

JENNA FURMAN-DARBY is the research and evaluation specialist for Chesterfield County Public Schools in Virginia. Her research focuses on K–12 teacher preparation for using trauma-informed practices in K–12 schools and supporting research to promote equitable education and student success in her division.

MELISSA YEUNG is the student services coordinator for the School of Physical Therapy at Bowling Green State University. Her research focuses on equitable access to health care education for students across all education levels and supporting mental health in schools.