The Acute Impact of the COVID-19 Pandemic on Children's Mental Health in Southwestern
Ontario

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Abstract

Objective: COVID-19 is an unprecedented global crisis. Research is critically needed to identify the acute and long-term impacts of the pandemic to children's mental health including psychosocial factors that predict resilience, recovery, and persistent long-term distress. The present study collected data in June-July 2020 to enumerate the acute impact of the pandemic on children's mental health, including the magnitude and nature of psychiatric and psychological distress in children, and to evaluate social support as a putative psychosocial correlate of children's distress.

Method: 190 families of children aged 8 to 13 from the Windsor-Essex region of Southwestern Ontario reported on the impact of the pandemic on children's well-being (e.g., worry, happiness); irritability; social support; and symptoms of anxiety, depressive, and posttraumatic stress disorder at baseline assessment of an ongoing longitudinal study of the COVID-19 pandemic.

Results: Children and parents reported worsened well-being and psychological distress during the pandemic compared to retrospective report of pre-pandemic well-being. Children and parents also reported higher depressive and anxiety symptoms, but fewer PTSD symptoms, compared to epidemiological samples that used the same measures prior to the pandemic. Finally, child-perceived social support from family and friends was associated with lower symptom severity.

Conclusions: Study findings indicate broad psychological impact of the COVID-19 pandemic and are consistent with prior research that indicates a protective role of social support to mitigate the negative psychological impact of the pandemic.

Keywords: COVID-19, anxiety, depression, irritability

The Acute Impact of the COVID-19 Pandemic on Children's Mental Health in Southwestern Ontario

The SARS-CoV-2 virus produced a global pandemic with wide-reaching effects. Beyond the immediate impact of the virus itself, the COVID-19 pandemic poses significant risks to public mental health that may persist long after the pandemic has subsided. Internationally, mental health problems (e.g., anxiety, depression, insomnia) may have increased since the virus was declared a global health crisis (Torales et al., 2020). Early research conducted on the initial outbreak in China reported a higher prevalence of posttraumatic stress disorder (PTSD), depressive episodes, and anxiety disorders in the months following the pandemic, perhaps as a result of the pandemic and associated necessary public health measures, such as quarantine (Liu et al., 2020; Wang, Pan, Wan, Tan, Xu, McIntyre, et al., 2020). Specifically, over half of adults surveyed reported a moderate to severe psychological impact of the outbreak; 16.5% reported depressive symptoms and 28.8% reported anxiety symptoms (Wang, Pan, Wan, Tan, Xu, Ho, et al., 2020). Similarly, among children in grades 2-6 residing in China during the pandemic, 22.6% and 18.9% reported depressive and anxiety symptoms, respectively, within two months of the start of provincial quarantine (Xie et al., 2020). Given that children have never previously experienced a global health crisis of this type and magnitude, the present study aimed to identify the magnitude of the impact of the COVID-19 pandemic to children's mental health and to clarify the types of psychological and psychiatric distress children experience during the pandemic.

Previous work indicates that traumatic events, such as hurricanes, can have both acute and long-term effects on the mental health of affected individuals. Although most individuals who are exposed to a traumatic event are affected briefly, a significant number of those exposed

develop psychopathology. The most common psychiatric outcome is the development of PTSD; up to a third of exposed individuals may meet criteria for a diagnosis immediately following a crisis (Foa et al., 2006; Galea et al., 2002, 2005; Green et al., 1992; Neria et al., 2008; North & Pfefferbaum, 2013). Traumatic experiences can also precipitate the emergence or worsening of other psychopathology, particularly anxiety and depressive disorders (North & Pfefferbaum, 2013), which are, respectively, the second and third most common mental health sequelae of traumatic events (Green et al., 1992). While psychiatric symptoms naturally subside for most people affected, for many others, PTSD, depressive, and anxiety symptoms can last for months following traumatic experiences and can have long-lasting effects on individuals' lives (Green et al., 1992; Ursano et al., 1995). Moreover, psychopathology severity is related to both the duration and severity of one's exposure to a traumatic event, such that individuals more severely impacted or impacted for a longer duration are at elevated risk of developing PTSD (Galea et al., 2002, 2005; Ursano et al., 1995).

While most research on the psychological sequelae of trauma has been conducted with adults, research on prior crises indicates similar or worse outcomes for children whose safety, health, and psychological well-being depend on the safety and well-being of parents and caregivers (Evans & Oehler-Stinnett, 2006; Koplewicz et al., 2002). Consistent with research on the impact to adult mental health, PTSD, depressive episodes, and anxiety disorders are, in order, the most common mental health sequelae of trauma in children (Goldmann & Galea, 2014). Traumatic events may also have distinct acute and long-term impacts on the mental health of children. For example, immediately following a traumatic event, over a quarter of children may meet criteria for a diagnosis of PTSD or another internalizing disorder (Evans & Oehler-Stinnett, 2006; Hoven et al., 2005; Russoniello et al., 2002; Silva et al., 2000). While acute symptoms

improve for many children (van Griensven et al., 2006), traumatic experiences can also have long-term effects for others. For example, one study conducted after the 1993 World Trade Center bombing found that 87% of children from the site showed sustained mild to severe PTSD symptoms nine months later (Koplewicz et al., 2002).

Children are also vulnerable to stressful events and distressing experiences in childhood (Pine & Fox, 2015). Beyond traumatic experiences, broadly defined stressful life events are associated with increased emergence of myriad psychiatric disorders in childhood (e.g., Luby et al., 2006) and adulthood (e.g., Fergusson et al., 2011; Kendler et al., 1998). Childhood also presents a series of sensitive developmental periods for psychosocial (e.g., Bagner et al., 2010; Colombo, 1982) and neural development (Fox et al., 2010; Romeo, 2017). Therefore, children may be particularly vulnerable to stressful events in addition to traumatic experiences. Indeed, prior research documents acute and long-term psychiatric sequelae of myriad distressing experiences in childhood including, but not limited to, maltreatment (see Jaffee, 2017 for review), parental psychopathology (e.g., Goodman et al., 2011), and parental loss (e.g., Agid et al., 1999). Despite secondary associations with depressive and anxiety symptoms, traumatic experiences may precipitate symptoms of PTSD. However, broad stressful events may precipitate a wide range of psychiatric and psychological distress without necessarily producing PTSD symptoms. For example, one study of individuals with major depression and panic disorder found that 35% of participants reported a history of childhood adversity (Young et al., 1997).

Given children's vulnerability to life stress and traumatic experiences, the impact of the COVID-19 pandemic on the mental health of children is of paramount importance (Courtney et al., 2020; Norris et al., 2002). Given limited prior research on the mental health impacts of a

global pandemic, it is unclear whether the COVID-19 pandemic will act as a broad life stress or specific traumatic experience. However, based on prior research on stress and traumatic events, the pandemic may precipitate the emergence and worsening of psychopathology in children. For example, Hawke and colleagues (2020) report that 39.9% of a community sample of youth aged 14 to 28 reported symptoms consistent with an internalizing disorder: 13.3% and 10.7% reported symptoms consistent with a depressive episode or anxiety disorder, respectively. The nature of the SARS-CoV-2 virus also necessitated public health measures that limited children's access to traditional sources of support in times of crisis (e.g., schools, peers; Fegert et al., 2020). For example, a recent American study reported that 35% of students ages 12-17 receive mental health services through their school (Ali et al., 2019). Thus, school closures may reduce access to mental health services and resources (Golberstein et al., 2020). Overall, the COVID-19 pandemic presents an extraordinary combination of acute risk for psychopathology in children and reduced resources to address the psychological sequelae of this global crisis.

The Present Study

The present study draws on baseline data from the Southwestern Ontario Children's Mental Health Study, a longitudinal study of the impact of the COVID-19 pandemic on the mental health of children in Southwestern Ontario, specifically the Windsor-Essex region. Given the urgent need for empirical data to inform public policy on education and social services for children, the present paper summarizes data from baseline assessment to document the acute mental health impact of the pandemic. Specifically, the present study addresses 2 questions: 1) What is the magnitude and nature of psychological distress that children are experiencing during the pandemic? For example, the present study was designed to clarify whether children are experiencing specifically PTSD-related symptoms consistent with exposure to a traumatic event

or broad symptoms of irritability, depressive and anxiety syndromes consistent also with life stress. 2) How might putative psychosocial correlates, such as perceived social support, mitigate the impact of the COVID-19 pandemic on children's mental health? For example, the COVID-19 pandemic may present a prolonged biopsychosocial stress for children while limiting typical sources of support, which prior research implicates as a buffer against the impact of life stressors (e.g., Cohen & Wills, 1985). Therefore, as a critical putative psychosocial correlate of children's well-being, the present study sought to evaluate whether the perceived availability of social support from family and friends during the pandemic may mitigate its impact on children's psychological distress.

Method

Participants

Families of children ($N=190$) aged 8 to 13 ($M=10.83$, $SD=1.45$) from grades 2 to 9 ($M=5.57$, $SD=1.68$) completed baseline assessment in June or July of 2020. Per parent report, 49.5% ($n=94$) children were female while 50.00% ($n=95$) children had ancestors from England, Ireland, Scotland or Wales; 25.26% ($n=48$) had ancestors of Western European descent; 25.26% ($n=48$) of Southern European descent; 24.21% ($n=46$) of North American, non-Aboriginal descent; 15.26% ($n=29$) of Eastern European descent; 8.42% ($n=16$) of Middle Eastern descent; 7.37% ($n=14$) of Aboriginal North American descent; 3.16% ($n=6$) of Northern European descent; 3.16% ($n=6$) of Eastern Asian descent; 2.11% ($n=4$) of South Asian descent; 1.58% ($n=3$) of Hispanic or Latinx descent; 1.58% ($n=3$) of Southeastern Asian descent; 1.58% ($n=3$) of African descent; and 4.74% ($n=9$) of other descent.

Of all 190 parents or caregivers, aged 21 to 58 ($M=41.34$, $SD=5.91$), 20 (10.53%) reported identifying as male. Most parents or caregivers who participated in the study ($n=67$;

35.26%) completed a graduate degree or some graduate education followed by 34.21% ($n=65$) who completed a 4-year university degree; 22.63% ($n=43$) who completed some college education or a 2-year degree; 7.37% ($n=14$) who completed high school or less; and 0.53% ($n=1$) who reported other education. Per parent report, children lived with 1 to 7 ($M=3.46$, $SD=1.02$) additional family members and 40.00% ($n=76$) lived with someone who was considered an essential worker. Finally, 47.89% ($n=91$) families received government assistance (e.g., Employment Insurance) in the 3 months prior to when the COVID-19 pandemic affected Southwestern Ontario. Thirty-two children (16.84%) chose not to complete the child-report portion of the study. Missing data on the child portion of the study was not robustly associated with participant age ($p=0.47$); sex ($p=0.61$); irritability ($p=0.95$); or symptoms of depression ($p=0.45$), PTSD ($p=0.26$), overall anxiety ($p=0.56$) or any anxiety syndrome ($ps>0.12$) per parent report.

Measures

The Screen for Child Anxiety Related Emotional Disorders (SCARED). Severity of symptoms of generalized anxiety, separation anxiety, panic/somatization, and social anxiety were assessed through parent- and child-report on the SCARED, which provides dimensional assessment of anxiety symptoms (Birmaher et al., 1997). The SCARED also includes items that assess school avoidance, which were omitted from the baseline assessment due to the provincial closure of schools. Reliability and validity of the SCARED for the assessment of anxiety symptom severity in community and clinical samples of children are supported by prior research including disorder-specific thresholds indicative of probable diagnosis (Birmaher et al., 1997, 1999). In the present study, interitem reliability of the total score and disorder-specific subscales

were high (see Table 1); the total score and subscales correlated with other measures as indicated in prior community samples (see Table 2).

The Short Mood and Feelings Questionnaire (SMFQ). Parents and children completed the SMFQ to assess child depressive symptom severity (Angold et al., 2005). The SMFQ consists of 13 items, which are a subset of items from the larger Mood and Feelings Questionnaire (Angold et al., 2005). Reliability and validity are supported by previous research including a threshold that indicates probable diagnosis of a major depressive episode (Klein et al., 2005). In the present sample, interitem reliability was high (see Table 1) and the total score correlated with other measures as indicated in prior community samples (see Table 2).

The Affective Reactivity Index (ARI). Child irritability was assessed through self- and parent-report on the ARI (Stringaris et al., 2012), which consists of 6 items rated on the ease and frequency with which the child becomes angry or irritated. Reliability and validity are supported by prior research, which also indicates separate thresholds for parent- and child-reported irritability that indicate probable Disruptive Mood Dysregulation Disorder (Stringaris et al., 2012). In the present sample, interitem reliability was high (see Table 1) and the total score correlated with other measures as indicated in prior community samples (see Table 2).

The Child PTSD Symptom Scale for DSM-5 (CPSS-5). To broadly assess symptoms of posttraumatic stress disorder, parents and children completed the CPSS-5, which is a version of the Child PTSD Symptom Scale Self-Report (CPSS-SR) modified for the DSM-5 (Foa et al., 2018). Along with separate items to assess functional impairment, the CPSS-5 assesses the severity of PTSD symptoms by asking the participant to indicate the frequency with which oneself or one's child experiences each of 20 PTSD symptoms. To be consistent with other measures in the study (e.g., the SCARED and SMFQ), the CPSS-5 was adapted to reference the

past 2 weeks. Prior research supports the reliability and validity of the CPSS-5 to assess the severity of PTSD symptoms in community and clinical samples of children including thresholds for minimal, mild, moderate, severe, and very severe symptom severity (Foa et al., 2018). In the present sample, interitem reliability was high (see Table 1) and the total score correlated with other measures as indicated in prior community samples (see Table 2).

The CoRonavIruS Health Impact Survey (CRISIS) and Perceived Social Support

Assessment. The CRISIS measure was developed to provide a comprehensive assessment of the impact of the COVID-19 pandemic on the daily lives of children, adolescents, and adults (Merikangas et al., 2020; Nikolaidis et al., 2020). Broadly, along with demographic information (e.g., child ancestry), the CRISIS consists of questions that assess exposure to the SARS-CoV-2 virus; daily behaviours (e.g., school closures); emotions, distress, and well-being (e.g., loneliness, worry; see Table 3); media use; and substance use (i) in the 3 months prior to the local impact of the COVID-19 pandemic and (ii) in the past 2 weeks. Merikangas and colleagues developed versions of the CRISIS for child-report about oneself and parent-report about a child. The child-report baseline assessment, which was used in the present study, includes four questions that assess a child's perception that family and friends would be available to help cope with psychological distress. In the present study, interitem reliability of the 4-item assessment of perceived social support was high (see Table 1).

Design, Procedure, and Data Analytic Plan

The present report describes baseline data from a longitudinal study of children's mental health from June 2020 through April 2021. Families were recruited in June and July of 2020 from advertisements in local news outlets, social media, and a local school board. From each family, one child and one parent were recruited to participate in the online study, which includes

baseline assessment, six monthly follow-up assessments through January 2021, and one 9-month follow-up assessment in March-April 2021. At each assessment, a parent or guardian will complete study measures about their child. At baseline, adults were asked to select one child in the study age range (i.e., 8 to 13) to also complete baseline and all follow-up assessments about themselves. Assessment of parent- and child-report is consistent with best practices in child clinical assessment (De Los Reyes et al., 2015) to capture the diverse impact of the pandemic on the child.

The present study used two-tailed independent and paired *t*-tests; correlation; and regression to compare study means to means of the same measures administered to epidemiological child samples prior to the pandemic and to evaluate change in children's distress (e.g., loneliness); the intercorrelation of internalizing syndrome severity measures (e.g., the SCARED); and the association of internalizing severity with perceived social support. Analyses used R version 4.0.2 (R Core Team, 2018) with the psych package for psychometric analyses (Revelle, 2015) and ggplot2 for figure generation (Wickham, 2009). The study was cleared by the University of Windsor Research Ethics Board.

Results

Descriptive Statistics

Descriptive statistics are presented in Tables 1 and 3. As compared to a large-scale community study (Rhew et al., 2010), both children and parents reported depressive symptoms higher than children with no depressive diagnosis (child-report: $t(155)=2.30, p=0.02$; parent-report: $t(188)=6.01, p<0.0001$) but lower than children with a depressive disorder (child-report: $t(155)=-8.21, p<0.0001$; parent-report: $t(188)=-5.06, p<0.0001$). Similarly, the number of children above a putative threshold is higher than the period prevalence of depressive disorders

in childhood (e.g., Costello et al., 2003) but does not suggest that most children reported a probable depressive episode. Children reported higher symptoms of generalized anxiety ($t(157)=3.39, p=0.0009$) and social anxiety ($t(157)=7.40, p<0.0001$), lower symptoms of separation anxiety ($t(157)=-3.94, p=0.0001$), and similar symptoms of panic/somatization ($t(157)=-0.12, p=0.91$) as a large Dutch community sample collected prior to the COVID-19 pandemic (Muris et al., 1999). Parents reported higher irritability ($t(188)=6.30, p<0.0001$) though children reported irritability ($t(156)=0.45, p=0.65$) similar to a large sample of children collected prior to the pandemic in the United States of America (USA; Carney et al., 2016). Similarly, children reported less severe PTSD symptoms than a large community sample of children in the USA who had experienced a variety of different traumatic events (Foa et al., 2018; $t(155)=-19.36, p<0.0001$).

Well-Being Change from Pre-Pandemic to Current

Distress increased from the 3-month period prior to the pandemic to the baseline assessment in June-July 2020. As indicated by both child- and parent-report, all individual indices of child well-being on the CRISIS indicate greater psychological distress (see Table 3 and Figure 1).

Associations of Symptom Severity with Social Support

Higher child perceived availability of social support from family and friends was associated with lower child-reported severity of irritability, total anxiety, generalized anxiety, panic/somatization, depressive, and PTSD symptoms (see Table 4). Associations of social support with lower severity of generalized anxiety, depressive, and PTSD symptoms were also evident when based on parent-report of children's distress. Associations were retained when adjusting for child age and sex, which was associated with child report of total anxiety,

generalized anxiety, panic/somatization, and PTSD symptom severity, such that male children reported, on average, lower symptom severity.

Discussion

The present study addressed two questions related to the mental health impact of the COVID-19 pandemic on children: What is the magnitude and nature of psychological distress children are experiencing during the pandemic? How might putative psychosocial correlates, such as perceived social support, mitigate the impact of the COVID-19 pandemic on children's mental health? Results indicated broad impact of the pandemic on children's psychological distress, as assessed by both children and parents, including reduced well-being across all indices evaluated and higher irritability, anxiety, and depressive symptoms. Moreover, social support from family and friends may mitigate the psychological impact of the pandemic; children who reported greater support from family and friends reported less severe symptoms of irritability, anxiety, depression, and PTSD.

Regarding the first research question, the pandemic appears to have had a broad impact on children's mental health across a wide array of indices. Results are consistent with prior research, which reported elevated rates of depressive and anxiety disorders (Cao et al., 2020; Hawke et al., 2020; Roy et al., 2020; Torales et al., 2020; Wang, Pan, Wan, Tan, Xu, Ho, et al., 2020; Wang, Pan, Wan, Tan, Xu, McIntyre, et al., 2020). For example, consistent with a study of children in China during the COVID-19 pandemic, in which 22.6% and 18.9% reported elevated depressive or anxiety symptoms (Xie et al., 2020), 25.64% and 21.52% of children in the present study reported depressive and anxiety symptoms above a clinically-indicative threshold, respectively. Moreover, a recent Canadian study reported that 13.3% and 10.7% of youth aged 14-28 reported symptoms consistent with a depressive or anxiety disorder (Hawke et al., 2020). The elevated

rates of symptomology in the present study suggest that children may be especially vulnerable to the acute psychological impact of the pandemic. Finally, as a prolonged stressor with myriad impacts to children's daily lives, extant theory on stress and child psychopathology is consistent with a broad impact of the COVID-19 pandemic on children's mental health (e.g., Harkness & Hayden, 2020). For example, research implicates other forms of life stress or adverse childhood experiences in the etiology of myriad psychopathologies (Chapman et al., 2004; Cicchetti & Rogosch, 2002; Gottbrath Flaherty et al., 2009).

Regarding the second question, higher perceived social support availability from family and friends was associated with lower severity of irritability, anxiety, depressive, and PTSD symptoms. This is consistent with prior research, which documents an association of social support with well-being in children and adolescents (e.g., Chu et al., 2010; Flannery, 1990). That social support may mitigate the mental health impact of the COVID-19 pandemic is consistent with prior theory that implicates social support as a critical protective factor in child development (Thompson et al., 2006). For example, the buffering hypothesis summarizes extant research on social support to suggest that it may act as a buffer to mitigate psychological distress following exposure to myriad forms of life stressors (Cohen & Wills, 1985; Dalgard et al., 1995). The association of social support with children's mental health encourages creative approaches to facilitate safe social interaction of children with friends and family where possible. For example, ongoing research may clarify how technological developments can facilitate supportive interactions.

Limitations and Future Directions

Results of the present study should be considered in light of several notable limitations, which suggest directions for future research. First, data collection of symptoms relied on self-

and parent-report in place of clinician-assessed psychiatric or psychological diagnoses. However, we note that clinical assessment is largely dependent on child and parent report of symptoms. Moreover, child- and parent-report of symptoms allowed for dimensional assessment of psychological distress and well-being in a community sample, which may reflect dimensional risk for psychopathology and subthreshold symptoms that still produce distress or impairment for the individual (e.g., Kotov et al., 2017; Wakschlag et al., 2015). However, future research is needed to investigate changes in the prevalence and incidence of psychiatric disorders in children following the COVID-19 pandemic to more directly inform clinical applications.

Second, to limit participant burden while collecting data from both children and parents, the present study was limited to investigating the effects of the pandemic on anxiety, depressive, PTSD, and irritability symptoms. Given the present indications of broad psychological sequelae of the COVID-19 pandemic, future research is needed to investigate the scope of psychological distress. For example, given increased child- and parent-reported irritability in the present study, future research is needed to evaluate the potential impact on the emergence of externalizing syndromes.

Third, due to the urgency to disseminate findings on the acute impact of the pandemic on children's mental health, the present study was limited to cross-sectional assessment at baseline. However, previous research has documented long-term impacts of other prolonged stressors and adverse childhood experiences on adolescent and adult mental health (Chapman et al., 2004; Gottbrath Flaherty et al., 2009). As compared to the adolescent sample collected by Hawke and colleagues (2020), the present study suggests that children may be at increased vulnerability to the negative psychological effects of the pandemic. However, future research is needed to clarify the long-term impact of the COVID-19 pandemic on the mental health of children and the

psychosocial factors that contribute to the persistence of, or recovery from, psychological distress.

Lastly, child- and parent-reported symptom scores were compared against large samples from research conducted prior to the pandemic, of which demographics were not identical to those of the present study. No previous research has been conducted with the measures used in the present study or similar measures with a large sample of children from the Windsor-Essex area of Southwestern Ontario prior to the COVID-19 pandemic. Thus, we used, as a comparison group, large community samples from previous research in which children completed the same measures used in the present study.

Conclusion

The present study identifies robust, broad psychological distress following the COVID-19 pandemic. Children and parents reported worsened distress on all indices of well-being assessed along with elevated symptoms of depressive and anxiety disorders as compared to large samples of children assessed prior to the pandemic (e.g., Carney et al., 2016). Finally, as a putative psychosocial correlate of psychological distress, children's perceived social support from family and friends was associated with lower irritability, PTSD, depressive, and anxiety symptoms, specifically lower total anxiety, generalized anxiety, and panic/somatization. Overall, the present study documents broad acute impact of the COVID-19 pandemic on the mental health of children in Southwestern Ontario. Results highlight the context for education and clinical assessments during the COVID-19 pandemic in which elevated irritability, anxiety, and depressive symptoms may be a product of this unprecedented, unique environmental stressor. Results also document the need for broad psychosocial supports and resources to help children recover from the COVID-19 pandemic.

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Table 1
Descriptive Statistics of Perceived Social Support and Internalizing Symptom Severity

Measure	α		$M (SD)$		$n (%)$ above threshold ^a	
	Parent	Child	Parent	Child	Parent	Child
SCARED: Total Score ^b	0.96	0.96	19.40 (13.18)	18.76 (14.06)	40 (21.05)	34 (21.52)
SCARED: Generalized Anxiety	0.92	0.93	6.39 (4.56)	5.42 (4.72)	60 (31.58)	36 (22.78)
SCARED: Separation Anxiety	0.88	0.90	4.05 (3.58)	3.96 (3.72)	68 (35.79)	54 (34.18)
SCARED: Panic/Somatization	0.93	0.93	3.68 (4.31)	3.86 (4.50)	37 (19.47)	35 (22.15)
SCARED: Social Anxiety	0.93	0.95	5.30 (3.97)	5.55 (4.39)	52 (27.51)	49 (31.01)
Depressive Symptoms (SMFQ)	0.94	0.95	5.38 (5.21)	4.78 (5.23)	49 (25.93)	40 (25.64)
Irritability (ARI)	0.94	0.92	3.19 (3.11)	2.95 (2.84)	65 (34.39)	80 (50.96)
PTSD Symptom Severity (CPSS-5)	0.93	0.96	10.60 (10.32)	11.86 (13.46)	74 (39.15)	61 (39.1)
Perceived Social Support	--	0.75	--	12.15 (2.70)	--	--

Note. ^a the number and percentage of the sample who completed the given measure above the established threshold for a probable diagnosis (e.g., the threshold of the SMFQ that indicates a probable major depressive episode); 30 was used as a conservative threshold for the SCARED total score while 10 was used as a liberal threshold for mild PTSD symptoms. ^b SCARED Total Score reflects the total of the four subscales included in the present study. SCARED indicates the Screen for Child Anxiety Related Emotional Disorders; SMFQ indicates the Short version of the Mood and Feelings Questionnaire; ARI indicates the Affective Reactivity Index; CPSS indicates the Child PTSD Symptom Scale.

Table 2
Correlation Table of Symptom Severity

Measure	Age	Sex	Total Anxiety ^a	Generalized Anxiety	Separation Anxiety	Panic	Social Anxiety	Depressive	Irritability	PTSD
Age	--	-0.04	-0.03	-0.02	-0.19	0.01	0.06	-0.06	-0.05	-0.05
Sex	-0.04	--	0	-0.01	-0.01	-0.03	0.04	-0.06	-0.05	-0.02
Total Anxiety ^a	-0.02	-0.15	--	0.86	0.81	0.81	0.73	0.61	0.30	0.61
Generalized Anxiety	0.09	-0.17	0.88	--	0.62	0.61	0.48	0.64	0.35	0.60
Separation Anxiety	-0.20	-0.10	0.79	0.58	--	0.56	0.47	0.48	0.25	0.54
Panic	0.02	-0.17	0.82	0.68	0.56	--	0.40	0.51	0.26	0.50
Social Anxiety	-0.03	-0.02	0.75	0.56	0.47	0.38	--	0.29	0.09	0.31
Depressive	0.01	-0.09	0.62	0.65	0.45	0.48	0.39	--	0.59	0.80
Irritability	-0.07	-0.10	0.37	0.41	0.36	0.33	0.11	0.56	--	0.47
PTSD	-0.01	-0.13	0.66	0.65	0.59	0.57	0.34	0.75	0.62	--

Note. Correlations based on child-report are provided below the diagonal; correlations based on parent-report are provided above the diagonal. Bold indicates correlations that are statistically significant at $p \leq 0.01$. Sex is coded such that female is the reference group.^a Total Anxiety reflects the total of the four SCARED subscales included in the present study. Total Anxiety, Generalized Anxiety, Separation Anxiety, etc. refer to the dimensional severity of symptoms (see Measures for specific assessment measures used).

Table 3
Descriptive Statistics for Well-Being Indices on the CRISIS Measure

Item	Child Report			Parent Report About Child		
	Pre-pandemic <i>M (SD)</i>	Current <i>M (SD)</i>	Difference	Pre- pandemic <i>M (SD)</i>	Current <i>M (SD)</i>	Difference
Worry	0.84 (0.96)	1.19 (1.14)	$t(156)=4.26 +$	0.84 (0.99)	1.19 (0.98)	$t(189)=4.10 +$
Happiness	2.66 (0.98)	2.18 (1.08)	$t(157)=-5.55 +$	2.90 (0.93)	2.23 (1.00)	$t(188)=-8.14 +$
Enjoyment	2.81 (1.05)	1.77 (1.18)	$t(157)=-8.94 +$	2.99 (0.93)	1.73 (0.99)	$t(187)=-13.69 +$
Felt relaxed	2.58 (1.11)	2.35 (1.22)	$t(157)=-2.75 **$	2.52 (1.08)	2.25 (1.05)	$t(189)=-3.21 **$
Restlessness	1.00 (1.01)	1.25 (1.12)	$t(157)=3.62 ***$	0.92 (1.00)	1.31 (1.10)	$t(189)=5.74 +$
Fatigue	0.85 (0.95)	1.20 (1.17)	$t(156)=4.31 +$	0.68 (0.76)	1.16 (1.03)	$t(188)=7.05 +$
Concentration	2.93 (1.05)	2.56 (1.10)	$t(156)=-4.83 +$	2.91 (1.09)	2.36 (1.08)	$t(189)=-6.60 +$
Irritability	1.03 (1.02)	1.41 (1.18)	$t(156)=5.10 +$	1.11 (0.94)	1.69 (1.05)	$t(189)=8.20 +$
Loneliness	0.48 (0.83)	1.06 (1.10)	$t(157)=7.60 +$	0.57 (0.83)	1.46 (1.14)	$t(189)=10.91 +$
Negative thoughts	0.89 (0.95)	1.12 (1.13)	$t(157)=3.84 ***$	1.18 (0.90)	1.45 (1.06)	$t(189)=3.98 +$

Note. * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$, + $p \leq 0.0001$.

Table 4
Regression of Symptom Severity on Perceived Social Support – B [β] (95% CI)

	Total Anxiety ^a	Generalized Anxiety	Separation Anxiety	Panic	Social Anxiety	Depressive	Irritability	PTSD
<u>Child-Report</u>								
Perceived Social Support	-0.98 [-0.19] *	-0.41 [-0.23] **	-0.10 [-0.08]	-0.27 [-0.16] *	-0.21 [-0.13]	-0.75 [-0.39] +	-0.34 [-0.32] +	-1.5 [-0.3] ***
Child Age	-0.35 [-0.04]	0.26 [0.08]	-0.54 [-0.21] **	0.01 [0]	-0.08 [-0.03]	0.04 [0.01]	-0.15 [-0.07]	-0.16 [-0.02]
Sex	-4.69 [-0.17] *	-1.73 [-0.18] *	-0.94 [-0.13]	-1.66 [-0.19] *	-0.29 [-0.03]	-1.35 [-0.13]	-0.76 [-0.13]	-4.13 [-0.15] *
	(-9.05, -0.33)	(-3.17, -0.3)	(-2.09, 0.21)	(-3.06, -0.27)	(-1.68, 1.1)	(-2.89, 0.19)	(-1.62, 0.09)	(-8.21, -0.04)
<u>Parent-Report</u>								
Perceived Social Support	-0.61 [-0.12]	-0.35 [-0.21] **	-0.13 [-0.1]	-0.1 [-0.06]	-0.02 [-0.01]	-0.41 [-0.21] **	-0.13 [-0.11]	-0.99 [-0.26] ***
Child Age	-0.54 [-0.06]	-0.08 [-0.02]	-0.55 [-0.21] **	-0.03 [-0.01]	0.1 [0.04]	-0.15 [-0.04]	-0.11 [-0.05]	-0.47 [-0.07]
	(-2.02, 0.94)	(-0.57, 0.42)	(-0.94, -0.15)	(-0.5, 0.45)	(-0.36, 0.56)	(-0.72, 0.43)	(-0.45, 0.23)	(-1.56, 0.62)
Sex	-2.00 [-0.07]	-0.68 [-0.07]	-0.32 [-0.04]	-0.93 [-0.11]	-0.08 [-0.01]	-0.97 [-0.09]	-0.28 [-0.05]	-1.17 [-0.06]
	(-6.29, 2.28)	(-2.12, 0.75)	(-1.46, 0.82)	(-2.31, 0.44)	(-1.40, 1.24)	(-2.64, 0.70)	(-1.27, 0.71)	(-4.32, 1.98)

Note. ^a Total Anxiety reflects the total of the four SCARED subscales included in the present study. Sex is coded such that female is the reference group. Panic refers to the panic/somatization subscale of the SCARED; all outcome variables (e.g., PTSD) refer to dimensional symptom severity.

* $p \leq 0.05$. ** $p \leq 0.01$. *** $p \leq 0.001$. + $p \leq 0.0001$.

Figures

Figure 1. Well-Being Indices on the CRISIS Measure

Panel A reflects child report on each emotion and well-being item on the CRISIS; Panel B reflects parent report about the child.