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Emotion Regulation and Distress During the COVID-19 Pandemic: The Role of Childhood Abuse

Alana Siegel,[1] and Yael Lahav[1]

Abstract

The COVID-19 pandemic may be experienced as traumatogenic and may fuel or exacerbate psychological distress and trauma-related symptoms. Based on trauma research, one might expect that survivors of childhood abuse would be susceptible to these negative outcomes during the pandemic, and that among this population a stronger relation between emotion regulation difficulties and symptomatology would be found. Aiming to explore these suppositions, an online survey was conducted among 710 Israeli adults. Of them, 370 were childhood abuse survivors. A history of childhood abuse, COVID-19-related stressors, overall psychological distress, and peritraumatic stress symptoms during the pandemic were assessed via self-report measures. Participants with a history of childhood abuse had elevated overall psychological distress as well as peritraumatic stress symptoms during the pandemic, compared to nonabused participants, above and beyond demographic characteristics and COVID-19-related stressors. Emotion regulation difficulties were related to elevated psychological distress and peritraumatic stress symptoms among both childhood abuse survivors and nonabused participants. Nonetheless, a history of childhood abuse moderated the relations between the emotion regulation difficulty of being unable to engage in goal-directed behaviors when distressed (on one hand)

[1] Tel Aviv University, Tel Aviv, Israel

Corresponding Author:
Yael Lahav, Department of Occupational Therapy, The Stanley Steyer School of Health Professions, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv 69978, Israel.
Email: yaellah1@tauex.tau.ac.il

and mental outcomes (on the other): Although the associations between inability to engage in goal-directed behaviors, overall psychological distress, and peritraumatic stress symptoms were nonsignificant among nonabused participants, they were significant among childhood abuse survivors. The current findings suggest that a history of childhood abuse might be a risk factor for distress in the face of COVID-19, and that childhood abuse survivors would benefit from clinical interventions that promote emotion regulation skills during this ongoing global health crisis.

Keywords
COVID-19, childhood abuse, childhood maltreatment, emotion regulation, peritraumatic stress symptoms

Introduction

In the 14 months (at the time of this writing) since the outbreak of a novel corona virus in Wuhan, China, in December 2019, the world has been confronted with a highly infectious respiratory virus that presents with a host of challenging complications (Center for Disease Control, 2020). COVID-19 has taken a staggering toll on global public health, with over 111.9 million ill and more than 2.48 million deaths worldwide as of mid-February 2021 (Johns Hopkins University & Medicine, 2021). The global ramifications of the pandemic have been enormous: crippling economies, overwhelming health care systems, and unleashing historically high levels of unemployment (World Trade Organization, 2020). COVID-19 was first identified in Israel in February 2020. By April 28th, there were 15,728 individuals ill and 210 deaths (Israel Ministry of Health, 2020). The government of Israel issued shelter-in-place orders (Israel Ministry of Health, 2020), required most businesses and all educational establishments to close, and banned the gathering of groups.

The ramifications of the pandemic are wide and multifold, and humanity has had to contend with the new found demands of lockdown, physical distancing, and social isolation (American Psychological Association, 2020). Myriad stressors are involved in the pandemic and may take a toll on individuals' well-being, with the following factors reflecting only some of them. Being diagnosed with the disease, belonging to a risk group for COVID-19 complications, evaluating one's own physical health negatively, and having close others who belong to a COVID-19 risk group may all act as significant burdens, arousing or intensifying fears and worries (Fiorillo & Gorwood, 2020; Wang et al., 2020b). Experiencing negative financial changes, such as

loss of income, may result in elevated emotional distress (Bareket-Bojmel et al., 2020). Being quarantined or living alone during the pandemic may hamper feelings of belonging and limit one's ability to enjoy the beneficial effects of social support, thus fueling psychological distress (Brooks et al., 2020). Lastly, having close others who were diagnosed with the disease or who suffer from complications, or losing close others as a result of the disease, may take a serious toll, resulting in grief and misery (Zhai & Du, 2020).

It is not surprising that the COVID-19 pandemic has had a negative impact on mental health (Vindegaard & Benros, 2020; Xiong et al., 2020), as indicated by elevated levels of specific psychiatric symptoms such as depression and anxiety (Gao et al., 2020; Mazza et al., 2020; Qiu et al., 2020), as well as by high scores on indexes that reflect overall psychological distress such as the General Severity Index (GSI; Bitton & Laufer, 2020; Tian et al., 2020), which was assessed in this study. Moreover, given that the pandemic could be experienced as traumatic, it could result, in some cases, in trauma-related symptoms (Wang et al., 2020b). Peritraumatic stress symptoms—which the present investigation also explored—are responses that occur during and immediately following a traumatic event. Peritraumatic stress symptoms consist of intrusion symptoms, which reflect re-experiencing the trauma (e.g., intrusive memories, flashbacks, nightmares); avoidance symptoms, which reflect efforts to avoid stimuli associated with the event (e.g., avoidance of trauma-related thoughts or feelings and reminders); changes in mood and cognition (e.g., overly negative thoughts and negative mood states); and hyperarousal symptoms, which reflect increased reactivity to stimuli (e.g., irritability and aggression, difficulty sleeping; American Psychiatric Association, 2013).

Initial research on the pandemic has documented peritraumatic stress symptomatology. In a study conducted in China among 6,049 participants between the ages of 17 and 63, it was found that 13.0% of the participants exhibited moderate levels of peritraumatic stress symptoms, and 6.1% of the participants displayed high levels of such symptoms (Jiang et al., 2020). Another study conducted in China examined the COVID-19 outbreak over a four-week period and found clinically significant peritraumatic stress symptoms in addition to moderate-to-severe stress, anxiety, and depression, all of which remained stable throughout that period (Wang et al., 2020b). Lastly, results from a study conducted among young adults (18-30 years) in the United States revealed that around a third of the participants (31.8%) reported high levels of peritraumatic stress symptoms during the pandemic (Liu et al., 2020).

Psychological distress and trauma-related symptomatology in the face of the pandemic, however, may vary across individuals. According to the trauma literature, trauma survivors and especially individuals who were subjected to

protracted interpersonal maltreatment during critical developmental periods, such as survivors of sexual, physical, and emotional childhood abuse, might have a lower tolerance for additional stressors and thus might be more susceptible to subsequent psychopathology compared to nonabused individuals (Hammen et al., 2000). Research has provided support for this line of thought, indicating associations between abuse during childhood and alterations of the hypothalamic-pituitary-adrenocortical (HPA) axis, which is the area of the neuroendocrine system responsible for stress regulation (Neigh et al., 2009). Additionally, evidence has revealed relations between childhood abuse and increased vulnerability to the deleterious mental health effects of stressors during adulthood, manifested in psychopathology such as depression, PTSD, and anxiety disorders (Breslau et al., 1999; Hammen, 2006; Kessler et al., 2010; McLaughlin et al., 2010).

The notion of childhood abuse survivors' presumed vulnerability in the face of additional stressors is likely applicable to the current pandemic. The harsh and recurrent attacks that characterize childhood abuse have been argued to eventuate in deep and enduring difficulties, which go beyond posttraumatic reactions such as PTSD. As part of these multifaceted implications, the damage to individuals' sense of self and relational world, as well as their heightened propensity for somatization (Cloitre et al., 2013; Van der Kolk et al., 2005), might adversely color childhood abuse survivors' experience of COVID-19-related stressors and further their distress during these times.

Furthermore, difficulties in emotion regulation subsequent to childhood abuse might also contribute to their distress during the pandemic. Emotion regulation generally denotes intrinsic and extrinsic processes implicated in monitoring, evaluating, and modulating emotional reactions as a way to achieve individuals' goals (Thompson, 1994). According to the theoretical model of Gratz and Roemer (2004), emotion regulation involves the following: an understanding and also an awareness of emotions; an acceptance of one's emotions; an ability to control behaviors that are impulsive, and to behave in line with predetermined goals even when experiencing negative emotions; an ability to control impulsive behaviors even when distressed; and an ability to flexibly apply various strategies to modulate emotions that are appropriate for the demands and goals of a situation. According to this perspective, emotions serve as an important source of information regarding current circumstances and promote actions that may enable adjustment to specific situations (Izard & Ackerman, 2000). Individuals who struggle with being aware, and with understanding and modulating their emotions, may tend to view internal reactions as unmanageable; they may also find it hard to choose suitable strategies with which to regulate their emotions and may over-rely on maladaptive strategies that intensify their emotional distress

over time (Seligowski et al., 2015). These patterns, in turn, may hamper adjustment and could lead to various negative outcomes (Gross & Jazaieri, 2014; Sheppes et al., 2015).

Difficulties in emotion regulation may impede individuals' adjustment in the face of the current pandemic. Individuals who suffer from difficulties in emotion regulation are thought to experience intensified physiological arousal and distress in response to stressors and to rely on maladaptive coping strategies, all of which increase their risk for psychopathology (Cisler et al., 2010). Although few in number, studies that have explored the relations between emotion regulation and psychological distress in the context of this pandemic provide some support for this view. A study conducted in China among 6,049 participants revealed associations between emotion regulation strategies and peritraumatic stress symptoms during the pandemic: Although an adaptive strategy of emotion regulation (cognitive reappraisal) was negatively related to belonging to a profile that was characterized by high levels of peritraumatic stress symptoms, a maladaptive strategy of emotion regulation (expression inhibition) revealed the opposite direction of relations (Jiang et al., 2020). Similarly, a study conducted among 127 healthy individuals who exhibited increased trait anxiety indicated that maladaptive emotion regulation strategies measured before the pandemic predicted state anxiety and perceived stress during the pandemic (Brehl et al., 2021).

Childhood abuse may substantially impede emotion regulation abilities (Powers et al., 2015), with some survivors experiencing emotion dysregulation, manifested in difficulties in identifying and labeling feelings, excesses in emotional reactivity, and difficulties in the inhibition, navigation, and expression of negative emotions (Messman-Moore & Bhuptani, 2017). Emotion dysregulation can contribute to the development and maintenance of various psychiatric disorders (Berking & Wupperman, 2012). Moreover, evidence suggests that childhood abuse survivors' emotion dysregulation can increase their susceptibility to psychological distress when they face new stressors (Kim & Cicchetti, 2010).

The Present Study

Although research has provided support for the notion of increased vulnerability of childhood abuse survivors when faced with additional stressors during adulthood, to the best of our knowledge no study has explored this claim in the context of a global crisis. Furthermore, the role of a childhood abuse history within the relations between emotion regulation difficulties and psychological distress in the face of such an ongoing stressor is not known. One may postulate that although emotion dysregulation may be related to

individuals' overall psychological distress and peritraumatic stress symptoms when facing a significant stressor such as the current pandemic, these relations may be even more substantial among childhood abuse survivors. The ability to identify and accept emotional states as well as to choose suitable strategies to regulate them may be particularly important for childhood abuse survivors who, due to their traumatic past, may experience frequent and intense negative emotions during the pandemic. Hence, the lack of such abilities may be more strongly associated with elevated psychological distress and trauma-related symptoms.

The COVID-19 pandemic has, unfortunately, provided us with an opportunity to explore these questions. The current cross-sectional study explored overall psychological distress (manifested in GSI) and peritraumatic stress symptoms during the COVID-19 pandemic, and their associations with a history of childhood abuse and emotion regulation. Based on the aforementioned literature review, the following three main hypotheses are formulated:

1. Childhood abuse survivors would report elevated overall psychological distress and peritraumatic stress symptoms during the COVID-19 pandemic, compared to individuals with no history of childhood abuse.
2. Emotion regulation difficulties would be related to overall psychological distress and peritraumatic stress symptoms during the COVID-19 pandemic: The higher the levels of emotion regulation difficulties, the higher the levels of overall psychological distress and peritraumatic stress symptoms.
3. A history of childhood abuse would moderate the associations between emotion regulation difficulties, overall psychological distress, and peritraumatic stress symptoms in the following way: The associations between emotion regulation difficulties, overall psychological distress, and peritraumatic stress symptoms would be significantly stronger among childhood abuse survivors compared to individuals with no history of childhood abuse.

Methods

Participants and procedure. An online survey was conducted among a convenience sample of Israeli adults. The survey was posted on Facebook and was accessible through Qualtrics, a secure web-based survey data collection system. Participants were invited to participate in a study on coping in the face of the pandemic. The survey took an average of 25 minutes to complete and was open from April 2, 2020 to April 19, 2020. It was anonymous and no

data were collected that linked participants to recruitment sources. The Tel Aviv University institutional review board (IRB) approved all procedures and instruments. Clicking on the link to the survey guided potential respondents to a page that provided information about the purpose of the study, the nature of the questions, and a consent form (stating that the survey was voluntary, respondents could quit at any time, and responses would be anonymous). The first page also offered researcher contact information. Each participant was given the opportunity to take part in a lottery that rewarded four $60 gift vouchers to the winners. A total of 1,500 people began the survey, and 976 answered some of the questionnaires. Of them, 710 participants (47.3%) who provided data concerning the study variables were included in this study.

Participants' ages ranged from 18 to 81 ($M = 45.27$, $SD = 14.41$), with the majority of the sample being below the age of 50 (58.6%). Most of the sample were women (81.2%); secular (70.5%); had a high school education or under (51.5%); and were in a relationship (63.7%). One half of the sample had an average or above-average income (50.0%).

Of the total sample, 370 participants (52.1%) were classified as having a history of childhood abuse based on the Childhood Trauma Questionnaire (CTQ; Bernstein et al., 2003). Participants were classified as having a history of abuse if they had scores that were higher than the cutoff scores suggested by Tietjen et al. (2010): physical abuse ≥ 8; sexual abuse ≥ 6; and emotional abuse ≥ 9. Sensitivity and specificity for these cutoff scores have been found to reach 89% and 97%, respectively (Tietjen et al., 2010).

Of the total 370 participants who were classified as having a history of childhood abuse, 257 participants (69.5%) were classified as having a history of childhood emotional abuse, 217 (58.6%) were classified as having a history of childhood sexual abuse, and 98 (26.5%) were classified as having a history of childhood physical abuse. Thus, the majority of this group, 223 (60.3%), was classified as having a history of one type of abuse, whereas the rest reported two (24.8%) or three (14.9%) types of abuse.

Table 1 presents background information among participants with a history of childhood abuse and participants with no such history. As can be seen in the table, no differences were found between the two groups in terms of education and religiosity. Yet there were significant differences between the groups in terms of age, gender, relationship status, and income. The average age was lower among participants with a history of childhood abuse than among participants with no such history. Additionally, the percentage of women, of individuals who were not in a relationship, and of individuals with a below-average income among participants with a history of childhood abuse was higher than among participants with no such history.

Table 1. Background Variables Among the Study Groups (n = 710).

Background Variables	Participants With a History of Childhood Abuse (n = 370)	Participants Without a History of Childhood Abuse (n = 340)	t or χ^2
Age, M (*SD*)	44.16 (14.31)	46.47 (14.44)	2.13*
Gender, *n* (%)			
Female	317 (86.4)	257 (75.6)	13.45***
Male	50 (13.6)	83 (24.4)	
Relationship status, *n* (%)			
In a relationship	212 (57.5)	239 (70.5)	13.01***
Not in a relationship	157 (42.5)	100 (29.5)	
Education, *n* (%)			
High school or under	198 (53.5)	168 (49.4)	1.19
Post high school and up	172 (46.5)	172 (50.6)	
Religiosity, (%)			
Secular	250 (69.8)	238 (71.3)	.17
Religious/traditional	108 (30.2)	96 (28.7)	
Income, (%)			
Below-average income	209 (56.5)	146 (42.9)	13.00***
Average income or above	161 (43.5)	194 (57.1)	

Note. *p < .05, ***p < .001.

Measures

Background variables. Participants completed a brief demographic questionnaire that assessed age, gender, education, relational status, religiosity, and income. Of the background variables, only age, gender, relationship status, education, and income were related to distress outcomes (ps < .05), and thus were included in the current analyses.

COVID-19-related stressors. Specific stressors related to the COVID-19 pandemic were measured via nine items designed by the research team (Hamam et al., 2021; Lahav, 2020). Participants were asked to indicate (1) how they perceived their own physical health, (2) whether they were currently in quarantine, (3) whether they were living alone during the outbreak, (4) whether they belonged to a high-risk group for COVID-19, (5) whether they had close others who belonged to a high-risk group, (6) whether they

were diagnosed with the disease, (7) whether they had close others diagnosed with the disease, (8) whether they had close others who were hospitalized due to the disease, (9) whether they had experienced the loss of close others due to the disease. In addition, in order to assess a pandemic-related economic stressor, participants were asked whether they had become unemployed or furloughed since the outbreak of the pandemic. All stressors, apart from the perception of one's health, were coded as dummy variables, with "0" reflecting the stressor's absence and "1" reflecting the stressor's presence. Participants' perceptions regarding their own health ranged from 1 (*bad*) to 5 (*excellent*). Given that only six participants reported experiencing any one of the last four stressors (being diagnosed with the disease, having close others who were diagnosed with the disease, having close others who were hospitalized due to the disease, experiencing the loss of close others due to the disease), these specific stressors were not included in the present analyses.

General distress during the pandemic. General distress during the pandemic was assessed by the GSI of the Brief Symptom Inventory-18 (BSI-18; Derogatis, 2001). The BSI-18 is a self-report symptom checklist measure consisting of 18 items that describe depression (e.g., "feeling hopeless about the future"), anxiety (e.g., "suddenly scared for no reason"), and somatization (e.g., "feeling weak in parts of your body") symptoms. Participants were asked to indicate the extent to which they had been bothered by each of the symptoms in the prior week, on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*). Scores on all 18 items are summarized on the GSI. GSI raw scores are converted to T scores, with an accepted cutoff point of 63 (Derogatis, 2001). The BSI-18 has been found to have adequate convergent and discriminant validity and good reliability (Derogatis, 2001). Internal consistency reliability in this study for the GSI was excellent ($\alpha = 0.93$).

Peritraumatic stress symptoms during the pandemic. Peritraumatic stress symptoms were measured via a modified version of the PTSD Checklist for the DSM-5 (PCL-5; Weathers et al., 2013). This 20-item self-report measure asks participants to indicate the extent to which they experienced each PTSD symptom, on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*). The original version was adapted so that the timeframe for experiencing each symptom was changed from "in the past month" to "since the outbreak of the COVID-19 pandemic," and the index event was the COVID-19 pandemic (example items: "feeling very upset when something reminded you of the pandemic;" "avoiding memories, thoughts, or feelings related to the pandemic;" "having strong negative feelings such as fear, horror, anger, guilt, or shame;" "irritable behavior, angry outbursts, or acting aggressively"). A total score of peritraumatic stress symptoms was calculated by summing all 20 items. Although not a definitive diagnostic measure,

preliminary research suggests a cutoff score of 33 is a useful threshold to indicate symptomatology which may be at clinical levels (Bovin et al., 2016). The PCL-5 demonstrates high internal consistency and test-retest reliability (Bovin et al., 2016). Internal consistency reliability in this study for the PCL-5 total score was excellent ($\alpha = 0.94$).

Childhood trauma questionnaire (CTQ; Bernstein et al., 2003). This questionnaire includes self-reported items that indicate childhood maltreatment. In this study, only 15 of the items referring to childhood abuse were utilized, including physical abuse (e.g., "hit hard enough to see a doctor"); sexual abuse (e.g., "was molested"); and emotional abuse (e.g., "felt that parents wished they were never born"). The items were rated on a 5-point, Likert-type scale with response options ranging from 1 (*never true*) to 5 (*very often true*). Participants were classified as having a history of childhood abuse if they had scores which were higher than one of the cutoff scores suggested by Tietjen et al. (2010): physical abuse ≥ 8; sexual abuse ≥ 6; and emotional abuse ≥ 9. Internal consistency reliability in this study was excellent ($\alpha = 0.91$).

Difficulties in emotion regulation. Difficulties in emotion regulation were measured via the 16-item Difficulties in Emotion Regulation Scale (DERS-16; Bjureberg et al., 2016). The DERS-16 was designed to assess individuals' typical levels of emotion dysregulation across five domains: non-acceptance of negative emotions (e.g., "when I am upset, I become irritated with myself for feeling that way");being unable to engage in goal-directed behaviors when distressed (e.g., "when I am upset, I have difficulty getting work done"); having difficulties controlling impulsive behaviors when distressed (e.g., when I am upset, I have difficulty controlling my behaviors");having limited access to effective emotion regulation strategies (e.g., "when I am upset, I believe that there is nothing I can do to make myself feel better"); and having a lack of emotional clarity (e.g., "I have difficulty making sense out of my feelings"). Participants are asked to rate the extent to which each item applies to them on a 5-point Likert-type scale from 1 (*almost never*) to 5 (*almost always*). Higher scores on the DERS-16 are indicative of greater emotion dysregulation. The DERS-16 has been found to have good test-retest reliability and adequate convergent validity (Bjureberg et al., 2016). Internal consistency reliabilities in this study for the subscales were good (α ranged from 0.78 to 0.86).

Analytic Strategy

The current analyses were conducted using SPSS 25 and PROCESS computational macro (Hayes, 2012). To compare participants with a history of

childhood abuse to participants without such a history, in terms of overall psychological distress and peritraumatic stress symptoms, two one-way analyses of covariance (ANCOVAs) were conducted. A history of childhood abuse was treated as the independent variable; overall psychological distress and peritraumatic stress symptoms were treated as dependent variables; and demographic characteristics (age, gender, relationship status, education, and income) and COVID-19-related stressors (i.e., being in quarantine, living alone during the outbreak, belonging to a high-risk group for COVID-19, becoming unemployed or furloughed since the outbreak, perceiving one's health as poor, and having close others belonging to a high-risk group) were treated as covariates.

To assess the associations between emotion regulation, on one hand, and overall psychological distress and peritraumatic stress symptoms during the pandemic, on the other, Pearson correlation analyses were conducted. To assess the moderating role of childhood abuse within the associations between emotion regulation difficulties, overall psychological distress, and peritraumatic stress symptoms, two regression analyses for overall psychological distress and peritraumatic stress symptoms were conducted. The analyses consisted of the following: five domains of emotion regulation, which were treated as independent variables; childhood abuse, which was treated as a moderator; and the interactions between emotion regulation and childhood abuse. In addition, specific background variables and COVID-19-related stressors that were found to be related to the dependent variables were included in the analyses as covariates. Significant interactions were probed using the PROCESS (Model 1) computational macro (Hayes, 2012).

Results

Stressors During the Pandemic

Several COVID-19-related stressors were reported by the respondents. These included being in quarantine ($n = 59$, 8.3%), living alone during the outbreak ($n = 119$, 16.8%), belonging to a high-risk group for COVID-19 ($n = 243$, 34.2%), perceiving one's health as not good or as poor ($n = 48$, 6.8%), having close others who belonged to a high-risk group ($n = 590$, 83.1%), and becoming unemployed or furloughed since the pandemic's outbreak ($n = 148$, 20.8%).

Overall Psychological Distress and Peritraumatic Stress Symptoms During the Pandemic

The average levels of overall psychological distress, manifested in GSI score, was 0.68 (±.61), and 10.1% of the total sample ($n = 72$) met the GSI criteria

for clinical psychological distress. The average level of peritraumatic stress symptoms was 15.21(±13.12). Furthermore, 76.1% (n = 540) reported experiencing at least one peritraumatic stress symptom during the pandemic, and 10.8% of the total sample (n = 77) had a peritraumatic stress symptom total score of 33 or above, indicating that these participants' symptoms were clinically significant.

Childhood Abuse, Psychological Distress, and Peritraumatic Stress Symptoms During the Pandemic

Two ANCOVAs exploring the differences between survivors of childhood abuse and participants without such a history, in terms of overall psychological distress, and peritraumatic stress symptoms during the pandemic, were conducted. Demographic characteristics and COVID-19-related stressors were treated as covariates. Results of the analyses are presented in Table 2. As can be seen in the table, age as well as having negative health perceptions had significant effects in explaining overall psychological distress and peritraumatic stress symptoms during the pandemic. Additionally, being female and having a lower-than-average income had significant effects in explaining psychological distress. Also, becoming unemployed or furloughed since the outbreak of the pandemic had significant effects in explaining peritraumatic stress symptoms.

More importantly, there were significant differences between the study groups in overall psychological distress and peritraumatic stress symptoms. Childhood abuse survivors reported elevated psychological distress (M = 0.82, SD = 0.66) and peritraumatic stress symptoms (M = 17.75, SD = 13.79) compared to participants without such a history (M = 0.51, SD = 0.52; M = 12.44, SD = 11.77, respectively). Supplementary logistic regression analyses indicated that the risk for clinically significant psychological distress or peritraumatic stress symptoms during the pandemic was more than twice as high among participants with a history of childhood abuse than among participants without such a history (odds ratio = 2.46, 95% confidence interval: 1.41-4.28; odds ratio = 2.20, 95% confidence interval: 1.33-3.65, respectively).

Emotion Regulation, Distress, and Peritraumatic Stress Symptoms During the Pandemic

Results of the Pearson correlations are presented in Table 3. As can be seen in the table, there were significant correlations with a medium-to-high effect

Table 2. One-way Analyses of Covariance Models Explaining Overall Psychological Distress and Peritraumatic Stress Symptoms During the Pandemic (n = 710).

	GSI		Peritraumatic Stress Symptoms	
	$F(1, 697)$	η^2_p	$F(1, 697)$	η^2_p
Age	32.83***	.05	12.99***	.02
Gender	4.09*	.01	1.31	.00
Relationship status	3.75	.01	2.06	.00
Education	.16	.00	.01	.00
Income	3.93*	.01	3.34	.01
In quarantine	.04	.00	.37	.00
Belong to risk group	.16	.00	1.10	.00
Negative perceived health	46.20***	.06	13.57***	.02
Living alone during outbreak	2.38	.00	.15	.00
Have close other in risk group	2.84	.00	1.78	.00
Unemployed or furloughed	3.80	.00	5.48*	.01
Childhood abuse	23.61***	.03	14.60***	.02

Note. *p < .05, ***p < .001.

Table 3. Intercorrelations Between Emotion Regulation Difficulties, Overall Psychological Distress, and Peritraumatic Stress Symptoms During the Pandemic (n = 710).

Measure	1	2	3	4	5	6	7
1. Emotion regulation — clarity	–						
2. Emotion regulation — goals	.41***	–					
3. Emotion regulation — impulsiveness	.44***	.64***	–				
4. Emotion regulation — strategies	.50***	.75***	.71***	–			
5. Emotion regulation — nonacceptance	.44***	.59***	.63***	.76***	–		
6. GSI	.36***	.46***	.44***	.55***	.45***	–	
7. Peritraumatic stress symptoms	.32***	.38***	.38***	.45***	.41***	.85***	–

Note. ***p < .001.

size between emotion regulation difficulties, on one hand, and psychological distress and peritraumatic stress symptoms during the pandemic, on the other: The greater the emotion regulation difficulties (manifested in lack of emotional clarity, inability to engage in goal-directed behaviors when distressed, difficulties controlling impulsive behaviors when distressed, limited access to effective emotion regulation strategies, and higher levels of nonacceptance of negative emotions), the higher the levels of psychological distress and peritraumatic stress symptoms.

Emotion Regulation and Distress During the Pandemic: The Role of Childhood Abuse

To explore the moderating role of childhood abuse in the relations between emotion regulation difficulties, overall psychological distress, and peritraumatic stress symptoms, regression analyses were conducted. Overall psychological distress and peritraumatic stress symptoms were treated as dependent variables; emotion regulation domains were treated as independent variables; and childhood abuse was treated as a moderator. Age, income, and negative perceptions regarding one's health—all three of which had a significant contribution in explaining overall psychological distress and peritraumatic stress symptoms compared to the other background variables and COVID-19-related stressors—served as covariates. Results of the analyses are presented in Table 4.

As can be seen in the table, the models explained 36.9% of the variance of overall psychological distress, $F(14,695) = 29.01$, $p < .001$, and 23.9% of the variance of peritraumatic stress symptoms, $F(14,695) = 18.88$, $p < .001$. Low income and having negative health perceptions had significant effects in explaining psychological distress and peritraumatic stress symptoms, and age had significant effects in explaining psychological distress. Two out of five domains of regulation difficulties also had significant effects. Limited access to effective emotion regulation strategies significantly explained psychological distress and peritraumatic stress symptoms, and difficulties controlling impulsive behaviors when distressed significantly explained peritraumatic stress symptoms.

More importantly, the interaction between childhood abuse and the goals dimension of emotion regulation difficulties was significant in explaining both overall psychological distress and peritraumatic stress symptoms. Probing these interactions revealed the following: Although the relations between inability to engage in goal-directed behaviors and psychological distress and peritraumatic stress symptoms were nonsignificant among

Table 4. The Role of Childhood Abuse in the Relations Between Emotion Regulation Difficulties, Overall Psychological Distress, and Peritraumatic Stress Symptoms During the Pandemic (n = 710).

	GSI		Peritraumatic Stress Symptoms	
	β	R^2	β	R^2
Age	–.12**	36.9	–.05	23.9
Income	–.09**		–.09**	
Negative perceived health	–.16***		–.08*	
Clarity	.08		.12	
Goals	–.08		–.10	
Impulsiveness	.14		.17*	
Strategies	.32**		.24*	
Nonacceptance	.09		.09	
Childhood abuse	.06		.05	
Clarity × childhood abuse	.01		–.05	
Goals × childhood abuse	.32*		.37*	
Impulsiveness × childhood abuse	–.21		–.21	
Strategies × childhood abuse	.04		–.18	
Nonacceptance × childhood abuse	.07		.06	

Note. *p < .05, **p < .01, ***p < .001.

individuals without a history of childhood abuse (β = –.02, p = .33; β = –.44, p = .25, respectively), they were significant among childhood abuse survivors, such that greater inability to engage in goal-directed behaviors was related to higher levels of psychological distress and peritraumatic stress symptoms during the pandemic (β = .03, p = .02; β = 67, p = .03, respectively).

Discussion

The COVID-19 pandemic carries with it substantial stressors and is likely to be experienced by many as traumatic. A majority of the present sample reported experiencing at least one peritraumatic stress symptom during the pandemic, and around a tenth of the sample had clinically significant peritraumatic stress symptoms or GSI scores. These findings are consistent with other studies that have documented elevated psychological distress and

peritraumatic stress symptoms among the general population during the COVID-19 outbreak (Jiang et al., 2020; Mazza et al., 2020; Qiu et al., 2020). Although research has suggested that the vast majority of individuals will exhibit a remission of trauma-related symptoms after the threat is removed (APA, 2013), peritraumatic reactions are known to be a risk factor for long-lasting distress (Gelkopf et al., 2019).Thus, the present findings point to the need to view the COVID-19 pandemic through the lens of psychological trauma as well.

In accordance with earlier research (Bareket-Bojmel et al., 2020; Wang et al., 2020b), having negative health perceptions was related to both psychological distress and peritraumatic stress symptoms, and experiencing negative changes such as becoming unemployed or furloughed since the outbreak was found to be related to elevated levels of peritraumatic stress symptoms. Nevertheless, in our final models, having negative health perceptions was the only stressor that had a significant effect in explaining overall psychological distress and peritraumatic stress symptoms. In times such as these, when there is a real and present health threat, perceiving one's own health in a negative fashion might increase this experience of threat, potentially fueling or exacerbating distress and trauma-related symptoms (Wang et al., 2020a).

Our results indicated that adult childhood abuse survivors had elevated overall psychological distress and peritraumatic stress symptoms during the pandemic, compared to participants without a history of childhood abuse, above and beyond demographic characteristics and COVID-19-related stressors. Furthermore, the risk for clinically significant distress or peritraumatic stress symptoms during the pandemic was more than twice as high among participants with a history of childhood abuse as among participants without such a history. Several explanations might be offered for the present findings. First, the cross-sectional design of this study and the lack of assessment prior to the outbreak of the pandemic make it impossible to disentangle the potential link between former and present levels of psychological distress and trauma-related symptoms. In other words, it might be that the higher levels of overall psychological distress and peritraumatic stress symptoms among childhood abuse survivors during the pandemic reflect pre-existing psychopathology or its exacerbation as a result of the current pandemic.

The present findings might also be explained via *the stress sensitization model* which suggests that childhood abuse sensitizes individuals to stress and impedes their ability to cope with additional stressors (Hammen et al., 2000). The trauma literature points to various implications of childhood abuse that might contribute to survivors' sensitization to stress. Abuse-related alterations in brain functioning may increase survivors' vulnerability to additional stressors (Sachs-Ericsson et al., 2009). For example, evidence has

indicated relations between childhood abuse and alterations of the HPA axis, which is the area of the neuroendocrine system responsible for stress regulation (Neigh et al., 2009).

Psychopathology subsequent to childhood abuse might also further intensify survivors' vulnerability during stressful times. Childhood abuse survivors have been found to be at risk for psychiatric symptomatology such as PTSD, depression, anxiety, substance use disorders, borderline personality disorder, and suicidality (Angelakis et al., 2019; Gilbert et al., 2009; Lindert et al., 2014; Messman-Moore & Bhuptani, 2017). These conditions substantially weaken individuals' functioning and thus might hamper survivors' ability to cope effectively with the multifold challenges involved in the COVID-19 pandemic.

The elusiveness of the virus, and the fact that its spread is very much dependent on the behavior of other people (World Health Organization, 2020), might be particularly challenging for childhood abuse survivors. Given that childhood abuse often involves a betrayal of trust at the hands of close others (Freyd, 2003), the experience in which one is dependent on others' adherence to formal guidelines and in which one could be easily infected by others, could reactivate traumatic memories and lead to feelings of defenselessness and powerlessness, as well as subsequent emotional pain. Similarly, facing the "invisible enemy" of COVID-19 (WHO, 2020) might intensify feelings of helplessness, and might in some cases be triggering.

Our findings further suggest that childhood abuse survivors might not only exhibit elevated distress during the pandemic but also a particular relationship between emotion regulation difficulties on one hand and psychological distress and peritraumatic stress symptoms on the other. Consistent with former studies (Brehl et al., 2021; Jiang et al., 2020), we found that emotion regulation difficulties were related to elevated *overall psychological distress* and peritraumatic stress symptoms during the pandemic, and that limited access to effective emotion regulation strategies as well as difficulty in controlling impulsive behaviors made a unique contribution to explaining distress and trauma-related symptoms among both childhood abuse survivors and nonabused participants. Nevertheless, the final model which explored childhood abuse as a moderator indicated that such abuse might shape the relations between emotion regulation, overall psychological distress, and peritraumatic stress symptoms. Specifically, our findings revealed that although the associations between inability to engage in goal-directed behaviors, psychological distress, and peritraumatic stress symptoms were nonsignificant among individuals without a history of childhood abuse, they were significant among childhood abuse survivors: Greater inability to engage in goal-directed behaviors when experiencing negative emotions was

associated with elevated distress and peritraumatic stress symptoms during the pandemic.

The inability to concentrate and focus on goal-directed behaviors when experiencing negative emotions reflects a substantial impairment in individuals' capacity to modulate emotions, which may negatively affect their adjustment to current situations (Gratz & Roemer, 2004). The present finding, which indicated that this difficulty was related to psychological distress and peritraumatic stress symptoms during the pandemic solely among childhood abuse survivors, implies that its negative implications might be particularly prominent in this group of individuals.

Failure to engage in goal-directed behaviors when experiencing adverse emotions may deepen childhood abuse survivors' vulnerability in the face of the varied stressors involved in the pandemic. Specifically, this incapacity could potentially exacerbate or eventuate in functioning difficulties and further produce additional problems in various life domains. In this way, childhood abuse survivors who are overwhelmed with negative emotions may not only fail to complete important tasks in their lives but may also experience, as a result, additional vocational, academic, or familial difficulties, which may serve as source of stress in addition to the current pandemic-related challenges.

On the other hand, it could be that past traumatic experiences of childhood abuse survivors contribute to the negative impact of this specific emotion regulation difficulty on their current distress. The inability to engage in goal-directed behaviors when one is distressed might lead childhood abuse survivors to experience themselves during these moments as helpless and out of control. Although these experiences are likely unpleasant and frustrating for most people, they seem to be particularly distressing for childhood abuse survivors. Given their traumatic past, during which they underwent psychological pain while being helpless, defenseless, and powerless, these experiences might be threatening and even triggering, and thus might exacerbate their distress and trauma-related symptoms in the face of the pandemic.

The findings of the present study should be considered in light of its limitations. First, our sample was gathered online, potentially leading to a self-selection bias. Second, this study was based on self-report measures that may have been subject to response biases and shared method variances. Third, although gender was not related to distress outcomes, the sample was predominantly female. Previous studies have found gender differences in response to the experience of childhood abuse (MacMillan et al., 2001). Fourth, our analyses focused on Israeli participants. This focus limits the generalizability of the study and points to the need to explore the relations between a history of childhood abuse and COVID-19-related distress among

a variety of populations, and specifically among clinical samples of male and female survivors of childhood abuse with diverse cultural backgrounds. Fifth, the present data was collected over a short period of time, on April 2020, when the COVID-19 pandemic had just begun. Thus, the present results may reflect initial turmoil that individuals faced, which they may have been able to cope with later on. Finally, due to the study's cross-sectional design, readers should be cautious in assuming causal relationships between the study's variables. Furthermore, due to the lack of measurement prior to the pandemic, one cannot disentangle the effect of the pandemic from other negative mental health outcomes which resulted from participants' past abuse.

Future longitudinal studies should continue examining this population in light of stresses ahead. The pandemic is considered to be a Black Swan—an unpredictable and devastating event with extreme consequences—and, as such, experts are anticipating severe global economic and societal repercussions that could last for decades (Brown, 2020). Although it is too early to know whether predictions of unemployment, homelessness, instability, and food shortages will be realized, the stress of the forecasts may be overwhelming, and the actual need to navigate the aftermath of the pandemic in the coming years (Goodman, 2020) may be an even more intense experience for survivors of childhood abuse. Additional studies would do well to examine the coping strategies of childhood abuse survivors as they navigate the many potential complexities, repercussions, and fallouts in the aftermath of the pandemic.

Notwithstanding the limitations above, the present results have important clinical implications. Our findings imply that childhood abuse survivors might suffer from elevated distress and peritraumatic-stress symptoms during the COVID-19 pandemic, and that their impeded ability in engaging in goal-directed behaviors might be related to these negative outcomes. Given that there are many survivors of childhood abuse globally, with estimates as high as one in four adults worldwide reporting a history of childhood abuse (World Health Organization, 2014), these findings suggest that numerous individuals throughout the world might be at risk for distress and trauma-related symptomatology during the pandemic and that their emotion regulation difficulty of being unable to engage in goal-directed behaviors may contribute to these adverse results. Policymakers should seek to make therapeutic support services both financially and practically accessible to former and current patients recognized with a history of childhood abuse. It is recommended that screening for past or present abuse should be part of medical annual physical exams or psychological intakes with mental health services. It is also imperative to use the social security and public social welfare systems to identify individuals with a history of childhood abuse who are eligible for services and develop

outreach services to deliver *ad hoc* interventions to this specific vulnerable population.

Providing evidence-based therapy that promotes emotion regulation skills during this time would seem to be critical for childhood abuse survivors. Evidence-based interventions that are suitable for the complex presentation and emotion dysregulation often found among childhood abuse survivors (Wagner et al., 2007), such as the Dialectical Behavior Therapy Prolonged Exposure protocol (Harned et al., 2014), may be particularly effective. These treatments, which should be adapted to the current conditions, as well as be provided online (Wind et al., 2020), may help survivors reprocess their past abuse and obtain new coping skills to regulate their emotions while facing the challenges of the pandemic.

It is clear that the current pandemic has led to extensive levels of stress, illness, and hardship around the world (WHO, 2020). That said, one group in need of extra support during this period are survivors of childhood abuse. Given the predictions of societal and economic instability and hardships in the months and years to come, survivors will likely need continued support as they navigate this crisis going forward.

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ORCID ID


Yael Lahav https://orcid.org/0000-0003-1242-9042

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Author Biographies

Alana Siegel, PsyD, is a research fellow in the Department of Occupational Therapy, The Stanley Steyer School of Health Professions, Sackler Faculty of Medicine, Tel Aviv University. Her research focuses on trauma, resilience, and secondary traumatic stress.

Yael Lahav, PhD, is a senior lecturer in the Department of Occupational Therapy, The Stanley Steyer School of Health Professions, Sackler Faculty of Medicine, Tel Aviv University. Her research interests revolve primarily around the unique relations between the psychological, interpersonal, somatic, and physiological facets of psychological trauma.