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The COVID-19 Pandemic as Traumatic Stressor: Distress in Older Adults Is Predicted by Childhood Trauma and Mitigated by Defensive Functioning

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Objective: It has been broadly anticipated that COVID-19 pandemic-related experiences may constitute traumatic stressors, and that older adults' might be especially at risk of experiencing mental health symptoms during the pandemic. The present study aimed to examine older adults' psychological distress: posttraumatic stress, Covid-related fears, anxiety, and depression during the pandemic, and the relationship between present distress, defensive functioning, and childhood trauma. We also explored potential differences between older adults (between 65 and 74 years), and older-older adults (75 years and above). ***Method:*** A large-scale online survey was conducted during the early months of the pandemic, for the present study, we included participants above 65 years old (N = 1,225) mainly from the United States and Canada. ***Results:*** Results showed that age, adverse childhood experiences, and overall defensive functioning were significantly related to posttraumatic stress, anxiety, and depression. Specifically, younger age and more reported childhood adversity were related to higher distress, whereas the use of more adaptive defenses was related to less distress. Covid-related fears were not associated with age. Our final model showed that defensive functioning mediated the relationship between childhood trauma and distress. ***Conclusions:*** Our results support the relative resilience of older-older adults compared to older adults, as well as the long-lasting impact of childhood adversity through defensive functioning later in life, specifically in times of heightened stress, such as the COVID-19 pandemic. Future studies are warranted to identify further factors affecting defensive functioning as adults age, as well as processes that are associated with resilience in response to stressors in older adulthood.

Clinical Impact Statement
Our findings suggest that within the older adults age group, older-older adults (75 years and above) experienced less psychological distress (posttraumatic stress, Covid-fear, anxiety, and depression) during the Covid-19 pandemic compared to older adults (between 65 and 74 years). Participants who were able to use more adaptive defense mechanisms experienced less distress, whereas participants with more childhood traumas experienced more distress during the pandemic; we found that childhood trauma was associated with the use of less adaptive defenses, which, in turn, was related to experience higher distress. Our results imply the relative resilience of older-older adults compared to older adults, the long-lasting impact of childhood trauma, and the mitigating effect of defense mechanisms between these two.

Keywords: COVID-19, older adults, childhood trauma, defense mechanisms, posttraumatic stress

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The ongoing COVID-19 pandemic has negatively impacted mental health in the general population, including more posttraumatic stress symptoms, anxiety, and depression (e.g., Prout et al., 2020). Mortality rates due to coronavirus have been higher among older adults, and associated health worry has been found to relate to more anxiety among older adults (Bergman et al., 2020). In addition to increased health anxiety and the general stress of a global pandemic, the necessary self-isolation created an additional major stressor for older adults. Although an effective measure to prevent infection, self-isolation put older adults

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under increased psychological stress, as it resulted in separation from friends and family members, missing their children and grandchildren, declined physical activity, increased dependence on others (e.g., grocery shopping), and a general sense of loss of freedom. In addition, limited access to and lesser skills with using technology for keeping contact with loved ones, also often meant more social isolation for older adults than other age groups. Previous studies have shown that social isolation may lead to increased mental health problems through perceived isolation and loneliness (Santini et al., 2020). In community samples of older adults, perceived isolation during the pandemic was associated with higher anxiety, depression, and mental health symptoms (Fiordelli et al., 2020; Santini et al., 2020).

Outside of the pandemic, mental health problems are relatively common in older adults. Prepandemic studies show that approximately 15% of adults aged 60 and over suffer from a psychological or psychiatric disorder (World Health Organization, 2017). Research evidence shows that the most common mental disorder experienced by older adults in the United States are anxiety disorders (Kessler et al., 2005). However, there is little empirical data specific to the prevalence of posttraumatic stress symptoms (PTSS) or posttraumatic stress disorder (PTSD) among older adults in the general community (Böttche et al., 2012) before the pandemic, and we know even less from during the pandemic. Most prepandemic studies of PTSD among older adults have focused on military veterans, nonmilitary survivors of war (e.g., the Korean or Vietnam Wars, World War II, Holocaust survivors), or survivors of recent traumas (accidents, violence etc.). Estimates show that about 50% to 90% of older adults in the United States have been exposed to at least one type of potentially traumatic event (Monson et al., 2016), and the estimated lifetime prevalence of PTSD in older adults is between 4.5% and 5.5% (Pietrzak et al., 2012).

It is broadly anticipated that pandemic-related experiences may constitute traumatic stressors among many individuals. Some researchers theorize that exposure to disturbing news and images, as well as more personal distressing experiences may lead to the development or recurrence of PTSS or PTSD specifically (Girdhar et al., 2020). During the pandemic, experiences differed widely; many individuals only experienced mild distress, whereas others were exposed to different types and varying degrees of trauma, such as acute illness, hospitalization in intensive care and intubation, loss of a loved one, and so forth Beyond these potentially new traumatic events, some also experienced reminders of previous traumatic exposure, for example, lockdowns could be associated with previous traumatic experiences, such as wartime restrictions (Ellis & Rawicki, 2020). Therefore, even if these events did not meet the criteria for a traumatic event according to the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM–5*; American Psychiatric Association, 2013), pandemic-related experiences could trigger posttraumatic reactions in many.

However, in contrast with a multitude of conceptual studies warning about the increased fragility of older people's mental health during the pandemic (Buenaventura et al., 2020; Troutman-Jordan & Kazemi, 2020), empirical studies conducted during the pandemic showed that older adults demonstrated less emotional distress in comparison to their younger counterparts (e.g., Czeisler et al., 2020; García-Portilla et al., 2021; Kobayashi et al., 2021; Nwachukwu et al., 2020). However, although there is some evidence for the resilience of older adults in general during the COVID-19 pandemic, we know little about differences in resilience between age groups of older adults, as many of these studies either included older adults as one homogeneous group (those above 60 or 65 years of age; Czeisler et al., 2020; García-Portilla et al., 2021; Nwachukwu et al., 2020), or used age as a continuous variable across all individuals (Kobayashi et al., 2021). We found one exception, López and colleagues' study (2020), which found no difference in the psychological well-being of individuals between 60 and 70, compared to those 71 to 80 years old. Therefore, research is needed to discern whether there are mental health differences across different older adult groups during the pandemic, as well as to identify factors that foster resilience or pose a risk to mental health problems in older adulthood (Rutherford et al., 2021).

Resilience in Older Adulthood

Despite supposed vulnerability in older adulthood due to increased social, financial, and health challenges, several studies have found that older adults, in comparison to their younger counterparts, are more resilient when experiencing disasters (e.g., Acierno et al., 2006; Böttche et al., 2012). Two major hypotheses have been proposed to explain this heightened resilience (i.e., lower distress levels) of older adults. The stress inoculation hypothesis argues that earlier trauma fosters resilience to subsequent traumas (Kohn et al., 2015). In this view, older adults may be resilient to adverse events because of greater cumulated experiences of prior negative life events, which leads to the development of more tolerance to new stressors (Eysenck, 1983). The second hypothesis posits that postdisaster resilience among older adults is due to increased quality of coping and regulation that comes with aging (Diehl et al., 2014). In other words, older adults may have more adaptive, mature defensive functioning, which enables them to cope with present stressors more effectively, and therefore experience less distress and mental health symptoms after traumatic life events (Kohn et al., 2015). There is some evidence to support the inoculation hypothesis. For example, Shrira and colleagues (2014) found that the link between previous trauma exposure (WTC terrorist attacks) and postdisaster (Hurricane Sandy) distress was weaker among older adults compared to younger participants. Specifically, a high degree of exposure to earlier disaster was linked to less distress following the later disaster, but only in older adults. Similarly, number of stressful life events has been shown to be associated with higher depressive and anxious symptoms, as well as reduced life satisfaction among 50–64 year-olds but there was no relationship between stressful life events and mental health symptoms in older adults above 65 years (Hannaford et al., 2018).

Whereas research on life stress and older-adult resilience is scarce, we know much more about the impact of childhood trauma on mental health throughout the life span. Adverse Childhood Experiences (ACEs), including physical, sexual, emotional abuse and neglect, and trauma, have been shown to result in a variety of negative mental health consequences across the life span. There is robust evidence for a dose-response relationship between the number of ACEs and later psychological problems (Hughes et al., 2017). However, the majority of existing research examined the impact of childhood trauma on adolescents and

young adults, and there is limited research in older adults. In the few studies conducted on older adults, number of childhood traumas was related to depression (Ege et al., 2015), suicidal ideation (Talbot et al., 2004), and substance abuse in late life (Kim et al., 2021). Moreover, childhood adversity was related to diminished psychosocial adjustment (Wilson et al., 2006), poor sleep quality, and increased emotional distress (Ege et al., 2015) in older adulthood.

According to the maturation hypothesis, the use of more adaptive defense mechanisms is responsible for older adults' resilience to stressful life events. Indeed, strong research evidence shows that the use of adaptive defense mechanisms is a key contributor to resilience and is associated with lower levels of psychological distress across the life span in various populations. Defense mechanisms are mostly automatic, involuntary reactions to internal and external stressors, and individuals tend to have certain default defense patterns that they use to manage distressing emotions and thoughts. Defenses can be arranged hierarchically based on their general adaptiveness, ranging from immature, maladaptive defenses such as acting out or passive aggression to high mature, adaptive defenses like self-observation or altruism; the level of defensive functioning indicates the overall maturity of one's defense mechanisms (Perry, 2014). Multiple studies have shown that individuals use more adaptive, mature defenses with age, especially from childhood to adolescence (e.g., Cramer, 2007), and a few studies have also shown a continued maturation of defense use from adolescence to midlife (Vaillant, 1976), and from middle age to older age (Diehl et al., 2014; Martin-Joy et al., 2017). However, some studies have found no age differences in defenses beyond initial maturation across age cohorts (Labouvie-Vief et al., 1987), moreover, in Diehl and colleagues' 2014 study, lifelong improvement in defensive functioning began to reverse in late old age, although it should be noted that the defense strategies of the oldest individuals were still more adaptive than those of the youngest ones.

Thus, most studies focus on defensive functioning and vulnerability to stress in older adults in comparison with their younger counterparts, such as middle-aged adults, but we know very little about differences in vulnerability to distress after late exposure to stressors within the older adult population, and we know even less about this in the context of the ongoing pandemic. Moreover, according to our knowledge, there are no studies investigating the impact of early traumatic experiences on defensive functioning later in life, and the potential relationship between early traumatic experiences on distress experienced in response to a new traumatic stressor in older adulthood.

The present study aimed to investigate predictors of distress in older adults during the COVID-19 pandemic. More specifically, we aimed to identify the relationship of age, childhood trauma, and defensive functioning to posttraumatic stress symptoms, Covid-related fears, and anxious and depressive symptoms in individuals above 65 years old. We had the following research questions: (a) Did older adults (OA, 65–74 years old) or older-older adults (OOA, 75+ years old) experience higher distress levels during the initial phase of the pandemic, including more Covid-related fears, PTSS, depression, and anxiety symptoms? We hypothesized that OA would report more distress than their older counterparts; (b) is childhood trauma a vulnerability factor, and higher defensive functioning a resilience factor in older adults who experienced distress during the pandemic? We hypothesized that more childhood trauma will be associated with more distress, whereas higher defensive functioning will be associated with less distress, over and above the variance explained by the age of the participants; and (c) what is the relationship between childhood trauma, defensive functioning, and distress? We hypothesized that defensive functioning would mediate the relationship between childhood trauma and current distress, over and above the variance explained by the age of the participants.

Method

Participants and Procedures

Participants (N = 1,225) were mostly White (95.6%) female (83.2%), and from the United States (52.7%) and Canada (44.6%). Participants provided altogether less than 1.7% of the data from nine other countries (e.g., France, Belgium). The OA group consisted of 1,019 participants between 65 and 74 years old, and the OOA group consisted of altogether 206 participants, of whom 183 were between ages 75 and 84, and 23 were 85 years or older. The majority had a college or professional degree (74.5%), and more than half of the participants had at least one chronic illness (53.7%). About half the participants were in relationship (47.2%). Participants in the OA group were more often in relationship compared to the OOA group, X2 (1, N = 1278) = 9.59, p = .001, but there was no significant differences in gender, ethnicity (proportion of White participants), education, socioeconomic status, and chronic illness between the OA and OOA groups. For further characteristics of the sample, see the online supplemental materials.

Participants were recruited via social media and e-mail listservs in English & French languages between April 10 and May 19, 2020. Interested participants were directed to an online platform hosted by Qualtrics, with additional information about the study. After providing consent, participants completed demographic data and standardized measures in a random order. The survey took about 30 minutes to complete. The study was approved by the [the local - omitted for peer review] Institutional Review Board. The present study focuses on those participants who were 65 years or older (N = 1288). Detailed demographic data about the sample is presented in the online supplemental materials.

Measures

Patient Health Questionnaire (PHQ; Spitzer et al., 1999)

To assess depressive symptoms, we utilized the PHQ-9 (Kroenke et al., 2001). The PHQ-9 measures the nine DSM depressive symptoms and has well-established psychometric properties (e.g., Manea et al., 2015). The Cronbach's alpha in the present study was α = .89. For anxious symptoms, we utilized the PHQ-GAD-7 (Spitzer et al., 2006). The GAD-7 is a sensitive and specific measure of generalized anxiety symptoms (Kroenke et al., 2007). The internal reliability alpha of the GAD-7 in the present sample was α = .83.

Impact of Events Scale-6 (IES-6, Thoresen et al., 2010)

We used the IES-6 to assess Covid-related posttraumatic stress symptoms, and adjusted the instruction to reflect Covid-related

traumatic distress: "For the past week, how much have you been distressed or bothered by the following difficulties related to coronavirus/COVID-19?" The IES-6 is an abbreviated 6-item version of the widely used IES-R (Creamer et al., 2003; Weiss & Marmar, 1997) scale, reflecting three aspects of distress in response to traumatic events: intrusion (e.g., intrusive thoughts, feelings), avoidance (avoidance of thoughts or feelings), and hyperarousal (trouble concentrating, feeling on-guard). Items are rated on a 5-point scale (1 = not at all, to 5 = extremely). This abbreviated version has been shown to be a valid and reliable measure of posttraumatic stress reactions (Thoresen et al., 2010), and it demonstrated very good internal consistency (Cronbach's $\alpha = .86$) in our study.

COVID19 Fear Scale (CVD19FS)

This measure is a derived from the SARS Fear Scale (Ho et al., 2005) that was created to measure fears in health care workers taking care of SARS patients (e.g., fear of becoming infected, fear of infecting others etc.). We modified the items to fit COVID-19 instead of SARS, for example: COVID-19 makes me fear that... "I will be infected," "the virus will get out of control and spread continuously." The scale comprises 18-items with responses range from 0 = *definitely false* to 3 = *definitely true*. The SARS Fear Scale has shown strong internal consistency ($\alpha = .92$). Cronbach's alpha in the current study $\alpha = 86$.

Adverse Childhood Experiences (ACE; Dube et al., 2003)

To assess history of traumatic experiences we used the ACE questionnaire, a widely used measure that assesses exposure to 10 types of ACEs. These include abuse (emotional, physical, and sexual), neglect (physical and emotional), and dysfunctional family environment (mentally ill or substance-abusing member of household, physical violence in the household, parental separation/divorce, incarcerated family member(s) prior to age 18. The total ACE score is calculated by summing up all 10 ACE variables and may range from 0 to 10. The ACE has been shown to be a valid measure of childhood traumatic events (Felitti et al., 1998), with good to excellent reliability and moderate to substantial test–retest reliability, indicating that retrospective responses to the forms of childhood maltreatment and household dysfunction are generally stable over time (Dube et al., 2004). The Cronbach's alpha for the current study was $\alpha = 74$.

Defense Mechanisms Rating Scales Self-Report-30 (DMRS-SR-30; Di Giuseppe et al., 2020)

This 30-item scale reflects the complete hierarchy of defense mechanisms as described in the *DSM–IV*, and empirically developed in the Defense Mechanisms Rating Scale (DMRS; Perry, 1990). DMRS-SR-30 items were extracted from the Q-sort version of the DMRS (DMRS-Q; Di Giuseppe et al., 2014) and adapted for self-report. The scale provides a summary score of Overall Defensive Functioning (ODF), where higher scores refer to more mature, adaptive defensive functioning. Internal consistency has been found good in earlier studies (Di Giuseppe et al., 2020), and the Cronbach's alpha in the present study was .84.

Data Analysis

To investigate for multivariate outliers in our data, we used Mahalanobis distances. After cleaning the data, we included those participants who completed the demographic questions and at least one of the outcome measures of this study. This yielded to N = 1,225 participants who were at least 65 years old in the analyses. Age was a categorical variable in the study (65 – 74, 75–84, and 85+ years old), and we designated participants between 65 and 74 years at the younger older adult (OA) group, and participants above 75 years at the older-older adult (OOA) group.

Chi-square tests were used to compare differences in demographic variables between the OA and OOA groups, independent-samples T-tests were used to compare ACE and ODF between the OA and OOA groups, and Pearson correlations were used to assess concurrent associations between ACE, ODF, depression, anxiety, PTSS, and Covid-related fears. To test our first hypotheses about differences in distress among OA and OOA, we used ANCOVA and controlled for demographic variables that were significantly different between the two age groups. To test our second and third hypotheses regarding the direct and indirect effects of ACE and ODF, on psychological distress, while controlling for age, we conducted a series of multiple regression analyses using the PROCESS macro, Version 3.5 (Hayes, 2018). The 5,000 bootstrap samples for a 95% CI were applied. All the data were analyzed using IBM SPSS Statistics 27.

Results

Psychological Distress Among Older Adults and Older-Older Adults

Independent samples T-tests showed that OA and OOA did not differ significantly in defensive functioning *($t[1009] = .18$, $p = .861$)*, but OA, compared to OOA, reported significantly more ACEs *($t[1047] = -4.01$, $p < .001$)*. When comparing between group distress (PTSS, Covid-related fears, anxiety, depression), we included relationship status and ACEs as covariates in the ANCOVA because they were significantly related to age and were therefore potential confounds. Findings revealed significant differences in all the outcome measures, except Covid-related fears *($F = [1, 1000] = 1.89$, $p = .171$)*. Specifically, participants in the OA group reported higher levels of PTSS *($F = [1, 1049] = 5.23$, $p = .022$)*, anxiety *($F = [1, 1006] = 9.55$, $p = .002$)*, and depression *($F = [1, 1022] = 5.80$, $p = .016$)*, compared to the OOA group, after controlling for relationship status and ACE.

Childhood Trauma and Defensive Functioning as Predictors of Distress

To examine potential covariates in our analyses, we first conducted bivariate correlations of the predictor variables (adverse childhood experiences and overall defensive functioning) and the outcome variables (PTSS, Covid-related fears, anxiety, and depression). Results indicated that all the outcome variables were significantly correlated with both predictor variables. Specifically, the number of adverse childhood experiences was positively related to reported levels of PTSS, Covid-related fears, anxiety, and depression, whereas overall defensive functioning was negatively related to levels of PTSS, Covid-related fears, anxiety, and depression (see the online supplemental materials for details).

We examined whether adverse childhood events and overall defensive functioning predicted psychological distress in our whole sample of older adults, while controlling for age. Four separate multiple regressions were conducted to determine the independent contributions of these variables to PTSS, Covid-related fears, anxiety, and depression, in which childhood trauma and defensive functioning were entered as independent variables, and PTSS, Covid-fear, anxiety, or depression, as dependent variables, while controlling for age in each test. The results suggested that age, adverse childhood experiences, and overall defensive functioning all independently and significantly predicted anxiety, depression, and PTSS symptoms, whereas Covid-related fears was predicted by adverse childhood experiences and overall defensive functioning, but not by age. Specifically, higher levels of reported depression symptoms were associated with younger age, more adverse childhood experiences, and lower defensive functioning. Similarly, higher levels of anxiety were also predicted by younger age, more adverse childhood experiences, and lower defensive functioning. Equally, higher reported posttraumatic stress symptoms were predicted by younger age, more adverse childhood experiences, and lower defensive functioning. Finally, Covid-related fears were associated with more adverse childhood experiences and lower overall defensive functioning, but age was not. See details in the online supplemental materials table.

Mediational Model for Childhood Trauma, Defensive Functioning, and Distress

We conducted mediational analyses using model 4 of the PROCESS macro (Hayes, 2018) to test whether defensive functioning mediated the relationship between adverse childhood experiences and distress. We conducted four separate models to test each distress variable. Results indicated that the mediational model for each outcome variable was significant, that is, the effect of adverse childhood experiences on reported PTSS, Covid-related fears, anxiety, and depression during the pandemic were mediated by overall defensive functioning (ODF). In other words, having more adverse childhood experiences was related to lower defensive functioning later in life, which, in turn, was associated with more mental health symptoms during the pandemic. We also tested whether age moderated either the direct or indirect effect of ACE on distress, however age was nonsignificant in both cases. See Table 1 below and the online supplemental materials for details.

Discussion

The current study is the first to explore distress and resilience among the older adult population during the ongoing pandemic in the context of early trauma and defensive functioning. Our first hypothesis, that older-older adults would experience less distress during the pandemic compared to their younger counterparts, was supported. Results showed that participants who were aged 75 or older reported significantly less posttraumatic stress symptoms, anxiety, and depression compared to those between ages 65 and 74, even after controlling for relational status and number of childhood adverse experiences. We found no difference in Covid-

Table 1

Mediation model for Posttraumatic Stress Symptoms and Covid Fear Predicted by Adverse Childhood Experiences, Mediated by Overall Defensive Functioning

Direct effects	Coeff.	*SE*	*t*	[95% CI]	*p*
PTSS (n = 785)					
ODF					
ACE (path a)	−.07	.01	−6.38	[−.09, .−.05]	.000
ACE (path c')	.34	.08	4.35	[.18, .49]	.000
ODF (path b)	−2.62	.24	−10.79	[−3.10, −2.15] .000	
Indirect effects through ODF	Coeff.	Boot SE		95% CI (boot)	
ODF (path ab)	.18	.04		[.12, .26]	
Covid Fear (n = 763)					
ODF					
ACE (path a)	−.07	.01	−6.25	[−.09, .−.05]	.000
ACE (path c')	.32	.10	3.34	[.13, .51]	.000
ODF (path b)	−2.13	.30	−7.24	[−2.73, −1.53] .000	
Indirect effects through ODF	Coeff.	Boot SE		95% CI (boot)	
ODF (path ab)	.15	.03		[.09, .22]	
Anxiety (n = 761)					
ODF					
ACE (path a)	−.06	.01	−5.56	[−.08, .−.04]	.000
ACE (path c')	.26	.05	5.51	[.16, .36]	.000
ODF (path b)	−2.03	.16	−12.50	[−2.35, −1.71] .000	
Indirect effects through ODF	Coeff.	Boot SE		95% CI (boot)	
ODF (path ab)	.12	.03		[.08, .18]	
Depression (n = 771)					
ODF					
ACE (path a)	−.06	.01	−5.69	[−.09, .−.04]	.000
ACE (path c')	.56	.08	7.09	[.40, .71]	.000
ODF (path b)	−3.80	.25	−15.32	[−4.29, −3.31] .000	
Indirect effects through ODF	Coeff.	Boot SE		95% CI (boot)	
ODF (path ab)	.24	.05		[.15, .34]	

Note. ODF = Overall Defensive Functioning; PTSS = Posttraumatic Stress Symptoms; ACE = Adverse Childhood Experiences.

related fears, after controlling for relational status and number of childhood adverse experiences.

In line with our second hypothesis, results showed that childhood trauma was a positive predictor, and higher defensive functioning a negative predictor of current distress in older adults, independent of age. That is, older adults who reported more childhood trauma, also reported more posttraumatic stress symptoms, more Covid-related fears, and higher levels of anxiety and depression, whereas those who used more mature, adaptive defenses reported lower levels of these four distress variables in both age groups. Moreover, in support to our third hypothesis, we found that overall defensive functioning, that is, the level of adaptiveness of an individuals' defenses served as a mediator between childhood trauma and present distress. That is, more reported childhood trauma was related to less adaptive defense use, which, in turn, was associated with higher symptom levels in both age groups.

Our findings are in line with earlier studies showing higher resilience after disasters in older adults compared to their younger counterparts (e.g., Acierno et al., 2006; Böttche et al., 2012; Hannaford et al., 2018). Our results also mirror studies comparing distress between younger and older adults during the current pandemic. García-Portilla et al. (2021) found, in a large sample of younger (below 60 years old, N = 13,363) and older adults (60 years old or older, N = 1,690), that participants in the older group were at lower risk of developing depressive symptoms and stress consequences due to COVID-19 and lockdown, than those under 60 years of age. Similar results were found in other studies during the pandemic (e.g., Czeisler et al., 2020; García-Portilla et al., 2021; Kobayashi et al., 2021; Nwachukwu et al., 2020), and the present study suggests that within the older adult population, this tendency to experience less distress with age, continues above the threshold of older adulthood. In the meantime, it is important to keep in mind that participants above 75 years who completed the online survey via social media were possibly higher functioning older adults, more familiar with the use of social media and willing or able to complete a relatively long online survey, thus it is possible that it is these older-older adults' higher functioning that was associated with their better mental health.

We found that older adults reported more adverse childhood experiences compared to older-older adults, and whereas age was unrelated to Covid-fears, adverse childhood experiences significantly predicted differences in defense use. These results suggest that distress symptoms in general (posttraumatic stress, anxiety, depression) are related to age, but childhood adversity is related to experiencing higher levels of Covid-related fears in older adults across all ages.

Within the older population, health concerns, social isolation and loneliness have been suggested as main vulnerability factors for distress during the pandemic (Santini et al., 2020). In our sample, we found that even though older-older adults were less often in a relationship (i.e., more often divorced, widowed, or never married), they still experienced less distress, although we did not directly assess social isolation in our study. Moreover, research shows that loneliness is also a strong predictor or poor mental health in old age (Courtin & Knapp, 2017), and that loneliness increased during the pandemic among older adults (van Tilburg et al., 2021); however, we did not examine loneliness in our study. Similarly, health concerns per *SE* were not measured in our study, however, our findings showed no significant difference between chronic illness among the older adult and the older-older adult groups.

According to the maturation hypothesis, older adults are more resilient postdisaster due to more adaptive defensive functioning. Our study found no difference in defensive functioning between the two groups, therefore older-older adult's higher resilience cannot be explained by the use of more adaptive defenses. Older-older adults reported significantly less adverse childhood events which in turn, predicted less symptoms, however, age remained significantly related to less distress (except for Covid-related fears) even after controlling for childhood adversity. These results suggest that childhood trauma and current defensive functioning in themselves do not explain age differences in distress in older adulthood. Thus, further studies are warranted to explore the drivers of higher resilience in older-older adults. For example, Socioemotional Selectivity Theory suggests that higher emotional well-being in older adults results from an adjustment of motivational focus due to perceived constraints of future time, that is, when future time is seen as limited, individuals tend to favor emotional meaning and positive experiences (Carstensen et al., 2003). Indeed, as a recent study showed, perceived constraints of future time played an important role in older adults' increased well-being and experience of more positive and less negative emotions during the pandemic (Carstensen et al., 2020). It is possible that in our sample, this shift in motivations and goals with older age could explain some of our findings regarding the OOA groups' lower distress.

Our finding that childhood trauma was a vulnerability factor and higher defensive functioning a protective factor during the pandemic, is in line with prepandemic studies showing the long-term negative impact of childhood trauma on physical and mental health problems (Hughes et al., 2017). Furthermore, this is the first study to show a relationship between childhood adverse experiences and later distress in a potentially traumatic context in older adults. Moreover, similar to our results regarding the positive relationship between higher defensive functioning and less distress in older adults, previous prepandemic research in clinical samples shows that psychological distress is associated with lower, less adaptive defensive use, and that during the pandemic, mature level defense use was one of the most important predictors of experiencing less perceived distress (Di Giuseppe et al., 2020; Gori et al., 2020; Prout et al., 2020).

The current study also found different patterns regarding general psychological distress (symptoms of posttraumatic stress, anxiety, and depression), and Covid-related fears specifically. It appears that Covid-fears are unrelated to age and are rather a shared phenomenon among older adults, which is understandable given the increased risk of Covid-related mortality and morbidity among older adults.

Finally, our study also showed a mediational relationship between childhood trauma, defensive functioning, and distress, implying that childhood trauma wields its impact on distress through its association with current lower defensive functioning. Previous studies have shown that childhood adversity has long term impact on mental health, but the mechanisms of transmission have remained unclear, and research related to the role of childhood adversity on defensive functioning in late phases of life is scarce. Thus, the findings of our study considerably extend current understanding of how early trauma impacts later distress, suggesting that difficulties in developing more mature defensive reactions

during the younger years, results in the use of less adaptive defenses in older adulthood creating a heightened vulnerability to carrying forward the impact of early adversity and creating a heightened downstream vulnerability to increased distress. Our results may be cause for some optimism however, in that even though a traumatic childhood cannot be changed retrospectively, research has shown that defensive functioning can be improved later in life, and that improvements in the defense levels are related to less distress and better social functioning (Babl et al., 2019; Perry et al., 2020).

Limitations

Our study has several limitations. First, we have not directly assessed exposure to specific potentially traumatic events, such as acute illness, hospitalization, or the loss of a loved one, rather we measured posttraumatic stress symptoms in general; it is thus possible that the two age groups were exposed to different levels of traumatic events that could explain some of the differences in their posttraumatic distress. Second, instead of a continuous variable, we included age as a categorical variable, as such were unable to distinguish possible differential processes related to smaller age units. Third, we recruited the sample via social media, which may bias participant selection. For example, it is likely that the older-older adults who responded to the online survey were higher functioning, than the general population of this age, however, we were not able to directly establish differences in functioning in our study. Fourth, the use of social media per *SE* may have contributed to less social isolation and subsequently distress in our participants, versus the general population of older adults. Finally, as mentioned earlier, even though we included questions about relational status and cohabitation in the survey, we did not specifically collect data about objective and perceived isolation and sense of loneliness, which would have been informative when interpreting our results.

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