AMERICAN PSYCHOLOGICAL ASSOCIATION
GREEN CROSS Academy of Traumatology
Traumatology

ISSN: 1085-9373
2022, Vol. 28, No. 1, 195–201
https://doi.org/10.1037/trm0000321

"I Get by With a Little Help From My Friends": Posttraumatic Growth in the COVID-19 Pandemic

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The aftermath of a trauma may be commonly associated with negative outcomes; however, these experiences can also lead to positive personal changes, including posttraumatic growth (PTG). Little research has explored PTG in relation to chronic or vicarious trauma, nor with regard to the social context. The current study investigated the role of perceived social support in moderating psychological distress and PTG during the COVID-19 pandemic. Cross-sectional data were collected online using CloudResearch from 296 adults residing in the United States of America during August 2020. A strong positive relationship was found between impact of trauma and PTG ($r = .54$; $p < .001$). Moderated multiple regression indicated psychological distress, perceived social support, age, gender, ethnicity, and education accounted for 39% of the variance in PTG; however, a significant positive relationship was only found between social support and PTG. The interaction between social support and psychological distress was significant ($p = .021$), with slope indicating the relationship between distress and PTG is strengthened with increasing social support. Contrary to expectations, this study found a significant relationship existed between PTG and perceived support from friends ($\beta = .23$; $p = .001$) and family ($\beta = .14$, $p = .044$), but not significant others. Age also predicted PTG, suggesting younger people may experience higher growth, and significant mean differences were found between Caucasian and African American participants who reported higher levels of PTG. These findings have potential implications for improving mental health outcomes during this challenging and novel period of our history.

Keywords: COVID-19 pandemic, posttraumatic growth, social support, psychological distress, trauma

A global mental health crisis has been of growing concern since the Novel Coronavirus (COVID-19) was declared a pandemic in early 2020 (Tamiolaki & Kalaitzaki, 2020). As of February 2021, the virus has caused over 491,000 deaths in the United States of America (World Health Organization, 2020), with public fear of contracting and transmitting the virus amplified through constant media coverage (Garfin et al., 2020).

Early reports from China and Germany indicate increasing levels of depression, anxiety, and psychological distress among populations impacted by lockdowns (Benke et al., 2020; Zhang et al., 2020). However, traumatizing events can also be the foundation for meaningful changes. Posttraumatic growth (PTG) is the development of positive, personal changes that develop in response to a person's struggle with a traumatic event (Tedeschi & Calhoun, 2004). Growth can occur across various domains including the ability to relate to others, recognition of life's new possibilities, greater inner strength, spiritual growth, and increased appreciation of life (Tedeschi & Calhoun, 1996). In order for these developments to occur, the event must be traumatic, cause disruption to everyday life, and challenge assumptive beliefs about the world (Janoff-Bulman, 1992; Tedeschi & Calhoun, 2004). Growth does not indicate an absence of distress, rather the initial distress triggers accommodation of the traumatic experience into one's beliefs about the world (Tedeschi & Calhoun, 2004).

The COVID-19 pandemic presents a unique traumatic event, due to its ongoing and fluctuating nature and potential for both direct and vicarious impact. Although PTG has been noted following natural disasters (Cao et al., 2018; Zhou & Wu, 2016), violent incidents (Schaefer et al., 2018), and health traumas (Bozo et al., 2009; Peng & Wan, 2018), it is relatively unexplored in pandemics. Further, pandemic research has previously focused on populations within Asia (Cheng et al., 2006; Ho et al., 2005) and is less explored within Western populations. This is of importance, as demographic characteristics have been found to influence PTG. For example, in a meta-analysis of 87 positive trauma outcome studies (including PTG and "benefit finding"), Helgeson and colleagues (2006) reported that ethnicity, gender, and age composition of the sample were significantly correlated to positive trauma outcomes. Specifically, female, nonwhite, and younger individuals were more engaged in finding benefits following a traumatic event. It has been proposed that individuals belonging to minority groups are more frequently exposed to adversity and may therefore develop the habit of seeking benefits and positive change from traumatic situations (Helgeson et al., 2006). This finding is also

This article was published Online First June 24, 2021.

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Funding for this project was provided by Monash University and was completed as part of a Graduate Diploma of Psychology Advanced student dissertation. We have no known conflicts of interest to disclose.

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supported by research on coping styles, in which women have been found to engage in more positive reappraisal (Tamres et al., 2002), which is a cognitive process key for PTG.

The Role of Social Support

Social support is an important factor in processing traumatic events, as it has been found to facilitate active cognitive processing, finding meaning in the event, and reframing assumptive beliefs about the world (Lepore, 2001; Tedeschi & Calhoun, 1996; Zhou & Wu, 2016). Considering social–cognitive theory (Lepore, 2001), higher perceptions of social support should correspond with higher levels of PTG by providing a person a safe environment to discuss the event and find positive meaning. This positive association has been supported in samples of adults experiencing both one-off, singular traumatizing events including bereavement (Ben-Zur & Michael, 2020) and natural disasters (Sattler et al., 2018), as well as chronic traumas including HIV-AIDS (Rzeszutek et al., 2015) and breast cancer (Danhauer et al., 2013).

The role of perceived social support as moderator in the distress–PTG relationship remains relatively unexplored. A study of 135 Romanian nurses experiencing vicarious trauma found higher social support was associated with higher levels of PTG (Măirean, 2016). Perceived social support moderated the distress-PTG relationship such that those who reported lower levels of secondary traumatic stress also reported higher levels of PTG when perceived social support was high (Măirean, 2016). Similarly, there was a significant negative association between psychological symptoms and PTG for participants with low social support ($N = 128$), but no significant relationship for those with high social support ($N = 113$) following the Sewol Ferry Disaster (Han et al., 2019). These studies highlight the important role perceived social support may play for people indirectly exposed to trauma.

The different sources of perceived social support may also play a role in how a person processes a traumatic event. In China, where cultural values emphasize the importance of family bonds (Lai & Leonenko, 2007); studies have found social support from family has been associated with higher levels of PTG (Cao et al., 2018; Peng & Wan, 2018). Contrastingly, when illness is the source of physical or psychological threat, those in relationships with a significant other (e.g., intimate partner or spouse) will rely on this as their primary source of support (Bozo et al., 2009). This has been supported in two studies of adults with breast cancer, in which support from a significant other was positively associated with PTG (Bozo et al., 2009; Tomita et al., 2017). The various sources of social support may therefore play an important role in how people process the physical threat from COVID-19. Further, the nature of social distancing and quarantine would suggest that support from ones significant other would be key during this time of potential physical isolation from friends and family.

The Current Study

The evidence for positive outcomes following traumatic events is substantial; however, little is known within the context of a pandemic impacting Western society and whether certain groups are more likely to be negatively impacted or grow from the experience. The current study aimed to explore the relationship between psychological distress, PTG, and perceived social support reported by adults living in the United States during the COVID-19 pandemic. It was hypothesized that (a) perceived social support would moderate the relationship between psychological distress and PTG, such that the relationship would be stronger at higher levels of social support, and (b) due to the social isolation aspect of COVID-19, social support from significant others would be the stronger predictor of PTG, rather than social support from friends and social support from family.

Method

Study Design and Sample

This cross-sectional online study was completed by 296 adults who were residing in the United States during the COVID-19 pandemic. Participants were excluded from the study if they were under 18 years of age or residing outside of the United States during the COVID-19 pandemic. The sample was 58.8% female with a mean age of 39.7 years ($SD = 16.0$; ranging 18–78 years). The diverse sample included people from 44 different areas of the United States who identified as Caucasian (64.8%), African American (15.0%), Asian American (8.0%), Hispanic (5.3%), and Multiracial (3.3%). A quarter of the sample had a high school level of education (24.3%), with 62.1% reporting an undergraduate level and 7.6% a postgraduate level.

Participants were recruited using convenience sampling during August 2020; via the CloudResearch cyber crowdsourcing platform and completed the 15-min online survey from any location of convenience. Upon submission of the completed survey, participants received monetary compensation for their time, in accordance with CloudResearch payment regulations. Ethics approval was granted by Monash University Human Research Ethics Committee prior to commencement of data collection.

Measures

The online survey commenced with screening questions (e.g., age, location of residence during pandemic) and demographic questions, gender identity (male, female, gender diverse), ethnicity (open-ended), highest education level achieved (open-ended), and relationship status (married/defacto, dating, separated/divorced/widowed, single, other). The current state of lockdown, experience of quarantine/isolation, and experience of testing positive/negative to the COVID-19 virus were also captured. The following listed scales were then presented in randomized order.

The Impact of Event Scale—Revised (IES-R; Weiss & Marmar, 1997) was selected to assess subjective psychological distress following a specific traumatic event. It is a 22-item inventory of posttraumatic stress disorder symptoms including hyperarousal, intrusion, and avoidance. The 22-items are rated on a 5-point Likert scale from no distress (0 = *not at all*) to extreme distress (4 = *extremely*). The instructions were modified in the current study to direct participants to think of their experience with the COVID-19 pandemic within the past 7 days. Scores are summed with scores over 33 indicating a probable diagnosis of posttraumatic stress disorder. The IES-R demonstrated excellent reliability in the current study ($\alpha = .96$).

The Post-Traumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996) was used to assess positive growth following a

Table 1
Overview of COVID-19 Experience

COVID-19 Experiences	*N*	%
In total lockdown at time of survey	54	17.9
Some restrictions at time of survey	197	65.4
No restrictions at time of survey	37	12.3
Had been tested and negative for COVID-19	64	21.3
Had been tested and positive for COVID-19	11	3.7
Had been hospitalized due to COVID-19	5	1.7
Knew someone who tested negative for COVID-19	135	44.9
Knew someone who tested positive for COVID-19	105	34.9
Knew someone who was hospitalized due to COVID-19	45	15.0
Knew someone who died due to COVID-19	30	10.0
Required to isolate/quarantine	97	32.2
Chose to isolate/quarantine	131	43.5
Did not isolate	68	22.6

traumatic event. It is a 21-item inventory measuring development along five domains: relating to others, new possibilities, personal strength, spiritual enhancement, and appreciation for life. Instructions were modified to ask participants to indicate the degree of change that occurred as a result of COVID-19. Responses were rated on a 6-point Likert scale indicating no change (0 = *not at all*) to substantial change (5 = *very great degree*). Scores are summed and range from 0–105, with higher scores indicating higher PTG. Internal consistency in the current study was excellent (α = .97).

The Multidimensional Scale of Perceived Social Support (Zimet et al., 1988) was selected to measure perceived social support. The 12-item measure perceived social support from three different sources: significant other, family, and friends. Participants respond on a 7-point Likert scale, rating from 1 (*very strongly disagree*) to 7 (*very strongly agree*). Scores are summed across all items to produce a total score (ranging 12–84) or across the four items of each subscale (ranging 4–28), with higher scores indicating greater levels of perceived social support. In the current sample, Cronbach's αs were strong (α = .94 total scale; .93 Significant Other subscale; .93 Family subscale; and .94 Friend subscale).

Statistical Analysis

All descriptive and inferential statistics were calculated using IBM's SPSS Statistics with PROCESS macro for the moderation analysis. Missing data was minimal (<2%) and determined to be missing completely at random; therefore, these cases were removed from the analysis. Pearson's correlation, moderated regression, and hierarchical multiple regression were used to test the hypotheses, with follow up between-groups analysis of variance and post hoc Games-Howell testing. An apriori power analysis was conducted for each proposed analysis using G*Power and indicated that to reach .80 power at .05 significance level with a small-medium effect size expected (Mäirean, 2016), a minimum sample of 213 participants would be required.

Results

As can be seen in Table 1, most participants had experienced some level of disruption and trauma related to the COVID-19 pandemic. Over 80% of the sample were experiencing some level of restrictions at the time of survey, and 75% of participants had been required to, or chosen to, isolate/quarantine. A quarter of the participants had themselves been tested for COVID-19, 15% of the sample knew someone who had been hospitalized due to COVID-19, and 10% reported knowing someone who had died due to COVID-19.

Prior to hypothesis testing, assumptions were checked for both regression models. There were no influential multivariate outliers, and no violations suggestive of multicollinearity or problematic residual pattern were noted. Curve estimation indicated a linear relationship between psychological distress and trauma. Descriptive statistics and correlations are presented in Table 2. A strong positive correlation was found between psychological distress and posttraumatic growth (r = .54, $p < .001$). Table 3 presents the moderated regression predicting posttraumatic growth. The combination of variables accounted for 39% of the variance in posttraumatic growth. There was a significant interaction between psychological distress and overall perceived social support (ΔR^2 = .01, p = .021), while accounting for age, gender, education, and ethnicity as covariates. Consistent with expectations, simple slopes analysis indicated more growth at higher levels of social support (see Figure 1).

A hierarchical regression was used to explore which aspects of perceived social support may be influencing growth (see Table 3). Age, gender, ethnicity, and education were entered in the first step and social support from friends, significant others, and family were entered in the second step. The overall model was significant (R^2 = .18, $p < .001$), with three predictors offering significant individual contribution at the second step: age (B = −.35, β = −.20, $p < .001$), perceived social support from family (B = .64, β = .14, p = .044), and perceived social support from friends (B = 1.07, β = .23, p = .001).

To determine if there were significant group differences in the variables used as covariates, a series of follow-up between-group

Table 2
Descriptive Statistics and Correlations for Study Variables

Variable	*M*	*SD*	1	2	3	4	5	6
1. Social support	59.4	15.7	—					
2. Psychological distress	29.3	21.5	.16**	—				
3. Posttraumatic growth	47.0	28.2	.37***	.54***	—			
4. Age	—	—	.12*	−.29***	−.16**	—		
5. Gender	—	—	−.06	.05	.04	.05	—	
6. Ethnicity	—	—	−.08	.08	.10	−.24***	.11	—
7. Education	—	—	.07	.16**	.12*	.10	.08	.08

* $p < .05$. ** $p < .01$. *** $p < .001$.

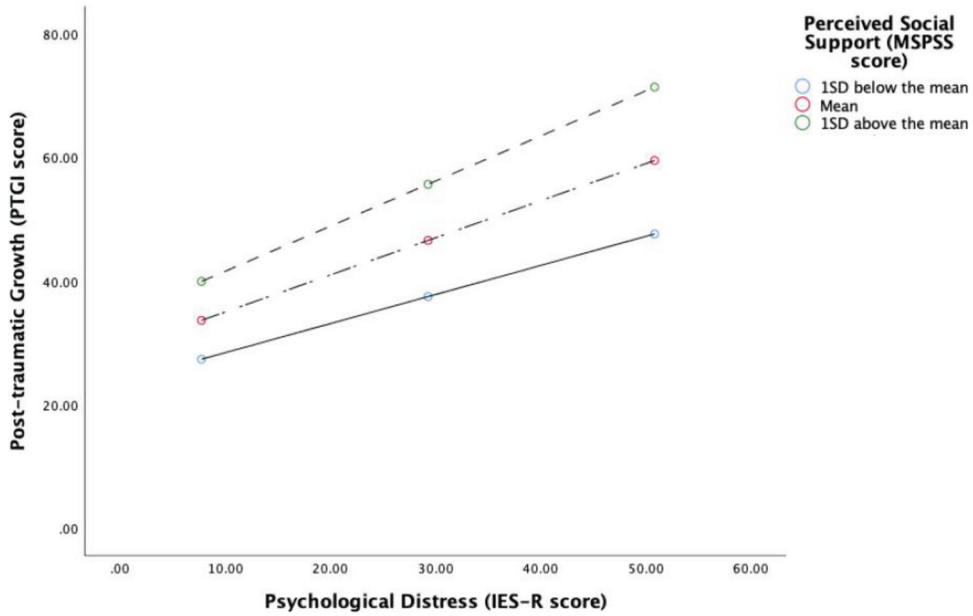
Table 3
Moderated Regression and Hierarchical Regression Results

	B	95% CI *LL*	95% CI *UL*	*SE*	*p*
Moderation					
Constant	7.59	−12.71	27.88	10.31	.462
Psychological distress	0.09	−0.38	0.56	0.24	.706
Social support	0.35	0.05	0.65	0.15	.022
Distress × Support	0.01	0.00	0.02	0.00	.021
Age	−0.09	−0.28	0.10	0.10	.369
Gender	0.67	−3.30	4.65	2.02	.739
Ethnicity	1.23	−0.92	3.39	1.10	.261
Education	0.82	−2.50	4.10	1.66	.623
Hierarchical regression					
Step 2					
Constant	5.89	−10.81	22.59	8.48	.488
Age	−0.35	−0.55	−0.16	0.10	.000
Gender	2.65	−1.92	7.23	2.33	.255
Ethnicity	1.28	−1.00	3.56	1.16	.269
Education	3.55	−0.44	7.54	2.03	.081
Social support significant others	0.43	−0.22	1.08	0.33	.194
Social support family	0.64	0.02	1.27	0.32	.044
Social support friends	1.07	0.42	1.72	0.33	.001

Note. Heteroskedasticity-consistent standard error estimator (HC3) adjustment applied to *SE* in moderated regression. CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

ANOVAs were conducted on psychological distress and posttraumatic growth. Post hoc analysis using Games-Howell for unequal variance indicated a significant mean difference between Caucasian ($M = 43.0$, $SD = 27.2$) and African American ($M = 57.7$, $SD = 28.1$) participants in posttraumatic growth ($p = .026$). No other significant differences in psychological distress or growth were found between groups in relation to gender, ethnicity, or education ($p > .05$ for all other comparisons).

Figure 1
Association Between Psychological Distress and Posttraumatic Growth, at Levels of Perceived Social Support



Note. MSPSS = Multidimensional Scale of Perceived Social Support; PTGI = Post-Traumatic Growth Inventory; IES-R = Impact of Event Scale—Revised.

Discussion

The aim of the current study was to explore the relationship between psychological distress, PTG, and social support during the COVID-19 pandemic. Consistent with expectations, a strong positive relationship was found between psychological distress and growth. Also, in keeping with predictions, the relationship between distress and growth was moderated by social support such that the relationship was stronger at higher levels of social support. However contrary to our hypothesis, perceived social support from significant others was not a strong predictor of PTG, however perceived support from family and friends were.

The concern regarding mental health issues stemming from the pandemic appears to be confirmed by the current findings, in which 45.6% of the sample reported IES-R scores 33 and greater, indicative of posttraumatic stress disorder (Weiss & Marmar, 1997). However, PTGI scores also indicated most participants reported some level of positive change, with 33.4% of the sample scoring 63 or higher which is indicative of a "moderate change." Thus, both negative and positive outcomes were experienced by our sample, who were directly and/or indirectly impacted by the ongoing COVID-19 situation in the United States. Although past research has reported a curvilinear relationship between PTSD symptomology and PTG (Shakespeare-Finch & Lurie-Beck, 2014), the relationship between psychological distress and growth in our study was best explained by a linear model. These findings add to the body of literature on PTG and may speak to the unique nature of the trauma experienced as a result of the COVID-19 pandemic.

The interaction between psychological distress and social support indicates that the relationship between distress and growth only grows in strength as perceptions of social support improve. The findings highlight that PTG is possible following vicarious and direct trauma, and that those who strongly feel they can rely upon their social networks for support are more likely to report this positive outcome. This moderation effect is consistent with previous findings exploring secondary PTG and PTSD (Măirean, 2016).

The interaction between psychological distress and social support only uniquely explained 1% of the variance in PTG in our study, suggesting that the role of perceived social support may be more nuanced than what was captured in the current study. For instance, it may play a more complex role within the distress-PTG relationship, moderating the relationship as well as indirectly effecting PTG via psychological distress (Han et al., 2019). Alternatively, it may be indicative of the social context at that time. Specifically, social supports are usually considered a source of safety in the aftermath of a trauma (Cohen & Wills, 1985), but during the pandemic, perceptions of safety may have been limited in the face of an indiscriminate and contagious viral threat.

Age significantly predicted PTG, with those younger in age reporting higher levels of PTG. This aligns with Tedeschi and Calhoun's (2004) conclusions that younger people exhibit greater openness and adaptability in changing their assumptive beliefs about the world, resulting in greater capacity for PTG. Contrary to expectations, perceived support from friends and family were the strongest predictors of PTG and perceived support from significant others was not significant. The conflicting findings may be explained by the relationship status of the current sample, in which 43.6% reported being married/in a defacto relationship, which is a lower portion of married participants than other studies that found support from significant others to be of key importance (Bozo et al., 2009; Tomita et al., 2017). Although allowing comparison to past studies, the relationship statuses used in the survey failed to capture other "significant other" relationships that commonly occur outside the traditions of marriage (e.g., long-term romantic partners) and may underrepresent the portion of the sample in a relationship with a significant other. This limitation did not extend into social support measures, as significant other items were left open to interpretation by survey respondents and were not limited to definitions of "spouse."

The key role of friendship as a support is an important and unique finding when considering the impact of COVID-19 on social units. First, friends are usually of similar age and share stages of life (Pinquart & Sorensen, 2000); thus, COVID-19 lockdown would have seen friends sharing similar, new stressors (e.g., home-schooling their children). Second, lockdown saw a shift in household roles and division of duties, which resulted in increasing household tensions and spousal quarelling (Biroli et al., 2020), with press reports that divorce rates have increased by 34% in the United States since the COVID-19 outbreak (Rosner, 2020). Friends are also viewed as a source of enjoyable social engagement (Pinquart & Sorensen, 2000); therefore, it is reasonable to expect those who were in lockdown with a partner/spouse may have sought virtual connections with friends as an outlet from increasing household tensions during lockdown. Although this could not be assessed directly due to failure to capture living arrangements of the sample, this possible explanation is supported by Biroli and colleagues (2020) who found 64% of U.S. respondents wished to visit with friends/family once lockdown ended. Thus, forced, confined relationships and changes to household dynamics may have placed tension on support from significant others, allowing family and friends to be more valued sources of emotional support during the pandemic.

Although not a focus of the study, it is of interest to note that although ethnicity was not a significant predictor of PTG, a group difference was evident between African American and Caucasian participants, with African American participants reporting higher levels of growth. Individuals from ethnic minority groups are more regularly exposed to trauma through racism and discrimination and may develop the habit of seeking positive change from traumatizing situations (Helgeson et al., 2006). However, such adaptive mechanisms would also be expected in differences in PTG levels reported between Caucasian and Hispanic or Caucasian and Asian American participants, yet no such differences were found in the current study. It is therefore important to note the political context preceding data collection, with Black Lives Matters protests occurring across the United States in response to the death of George Floyd, an African American man. His death and violence against African American protestors were broadcast over social media and news (McDowall et al., 2020) and may have exacerbated the psychological changes experienced by fellow African Americans, more so than other ethnic groups sampled. Although the survey instructions directed participants to reflect on their experience during the COVID-19 pandemic, this crisis also occurred during the pandemic and may have influenced the psychological experience of African Americans. Alternatively, this finding may be testament to the extended social support networks African Americans rely on for emotional support, including fictive

kin (people considered family but are unrelated by blood) and church congregations (Taylor et al., 2013). Additional research specifically exploring COVID-19 related PTG in a diverse sample of ethnic groups would be a beneficial direction for future studies.

The current study's data collection occurred during August 2020 while the COVID-19 pandemic was still ongoing. Therefore, it might be considered that the study has captured peri-traumatic growth as opposed to posttraumatic growth. Further, it is possible that due to the cross-sectional nature of the study what may have been captured is an illusory coping mechanism, rather than true, meaningful growth. Future research would benefit from utilizing a longitudinal design with postpandemic timepoints to track enduring, positive changes. A further weakness of the current study was failure to define the term significant other or differentiate direct/vicarious experiences of COVID-19 within the wording of our survey. Although comparison of vicarious and direct impacts of trauma would help further our understanding of trauma outcomes, it may not have practical importance considering the widespread impacts of COVID-19 and high probability of simultaneous direct and indirect effects. Future, longitudinal research would also benefit from the use of measures of actual social support to determine causality. The current study measured perceptions of social support and did not capture support-seeking behaviors such as disclosure, which are important in promoting PTG (Tedeschi & Calhoun, 2004).

The current study has contributed to the understanding of PTG within a unique traumatic event, highlighting the importance of age and various sources of social support. The findings may also inform future studies investigating social support interventions to promote positive psychological change for individuals exposed to trauma. Implications of the current study also extend to public health messaging. Concerns of a global mental health crisis further emphasize the negative outcomes of COVID-19. An adjustment to public health messaging to incorporate a range of both negative and positive psychological changes possible in relation to ones experience of COVID-19 may provide a more balanced view and maintain hope within a public already exposed to a multitude of stressors.

In conclusion, the current study aimed to explore the impact of the COVID-19 pandemic and the role of social support in predicting trauma-related growth. The pandemic has impacted our psychological state through fear of illness, economic stress, physical isolation, and new household demands. Our findings indicate that growth is possible following such a unique traumatizing event and that perceived support from family and friends may help individuals find a new appreciation for life and redefine meaning in relation to this traumatizing event.

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Received October 22, 2020
Revision received March 7, 2021
Accepted March 10, 2021 ■