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To cite this article: Leslie S. Jordan, John L. Woodard, Gabriel S. Pena, Naomi A. Arnold-Nedimala, Junyeon Won, Daniel D. Callow & J. Carson Smith (2021): Forward-focused coping predicts better mental health outcomes in mid- to late-life during the COVID-19 pandemic, *Aging & Mental Health*, DOI: [10.1080/13607863.2021.1897523](https://doi.org/10.1080/13607863.2021.1897523)

To link to this article: <https://doi.org/10.1080/13607863.2021.1897523>

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 Published online: 18 Mar 2021.

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Forward-focused coping predicts better mental health outcomes in mid- to late-life during the COVID-19 pandemic

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ABSTRACT

Objectives: Psychosocial stressors associated with the COVID-19 pandemic may increase the risk of depression and anxiety in the general population. Individuals approaching or within older adulthood may be especially vulnerable to these psychosocial stressors and their impact on mental health outcomes. Consequently, there is an urgent need to identify protective factors for older adults. The purpose of the present study was to determine the relative contribution of coping flexibility (CF) and two distinct coping strategies, forward-focused and trauma-focused, on negative affect in persons 50 years of age and older during the COVID-19 pandemic.

Method: Data were collected using an online survey, including questions about demographic information, coping, depression, and anxiety. Participants aged 50 and over were included in our analyses of depression ($N = 800$) and anxiety ($N = 638$).

Results: Both higher CF and higher forward-focused coping predicted lower depression and lower anxiety. In contrast, higher trauma-focused coping predicted slightly higher depressive symptoms but was not a significant predictor of anxiety.

Conclusion: Our findings suggest that higher forward-focused coping may serve as a protective factor in older adults during the pandemic and, therefore, may be an effective treatment target for mental health interventions.

ARTICLE HISTORY

Received 6 November 2020
Accepted 21 February 2021

KEYWORDS

Depression; anxiety; negative affect; coping flexibility; pandemic

Introduction

On March 11, 2020, the World Health Organization (WHO) designated the outbreak caused by the novel coronavirus, COVID-19, as a pandemic (World Health Organization, 2020). To mitigate the spread of the virus and prevent an overwhelming of health care systems, regions in the United States and Canada implemented social distancing guidelines (SDG) and, in many places, official lockdown orders. During the early stage of the COVID-19 pandemic, anxiety, depression, stress, and vicarious traumatization were prevalent psychological reactions among adults in China (Li et al., 2020; Wang et al., 2020). Reports of psychological distress in response to the pandemic have prompted urgent calls for action to address the mental health needs of older adults who may be experiencing increased anxiety, depression, social isolation, and suicide risk (Troutman-Jordan & Kazemi, 2020).

The COVID-19 pandemic and its impacts on health, finances, and daily life are a potential cause of psychological distress. Moreover, the effect of the pandemic across each of these domains is exacerbated by the prolonged and uncertain nature of the crisis (Fiorillo & Gorwood, 2020). Concerns about personal and community health, including fear of infection, may be linked to symptoms of anxiety and depression (Brooks et al., 2020). The pandemic has also precipitated widespread economic disruption and financial strain that can cause psychosocial

stress. Increased perceived social isolation, a by-product of SDG, could have a negative impact on mental health. These psychosocial stressors associated with the COVID-19 pandemic may be intensified for some vulnerable populations.

Researchers have raised concerns that the harmful mental health impact of the COVID-19 pandemic may be exacerbated among older adults, a population at-risk for developing the most severe symptoms of the virus (Liu, Chen, Lin, & Han, 2020). Consequently, health-related fears regarding risks of exposure, severe symptoms, and increased fatality rates may be heightened. Furthermore, prolonged SDGs and the emotional toll of social isolation may be increased among older adults who rely on social contact outside of the home (Armitage & Nellums, 2020). Formal restrictions and fears of exposure to the virus have contributed to a discontinuity of assistance from family and caregivers (Kar, 2020; LaFave, 2020). The psychosocial stressors associated with the COVID-19 pandemic, and the exacerbation of those stressors among vulnerable populations, could be potentially traumatic. Adaptive coping strategies are needed for older adults to mitigate the negative impact of these psychosocial stressors.

Prior research on potentially traumatic events (PTE) has differentiated two distinct types of coping strategies: trauma-focused coping (TFC) and forward-focused coping (FFC) (Bonanno, Pat-Horenczyk, & Noll, 2011). TFC involves processing negative thoughts and emotions associated

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 Supplemental data for this article is available online at <https://doi.org/10.1080/13607863.2021.1897523>.

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with PTE and their impact. Conversely, FFC entails shifting attention away from the traumatic event and, instead, focusing on maintaining a routine, working toward goals, and caring for others. Research in coping and resilience has revealed that each of these coping strategies has the potential to be adaptive in one context, yet maladaptive in another (Bonanno & Diminich, 2013). For example, higher FFC was associated with consistently low levels of distress in the context of adjustment to college (Galatzer-Levy, Burton, & Bonanno, 2012). Thus, FFC strategies may be adaptive in this context. On the other hand, students who showed initial distress followed by subsequent recovery reported significantly higher TFC, suggesting that TFC could facilitate recovery from psychological distress over time. Although this study pertains to a younger population, it illustrates how FFC and TFC may be adaptive at different stages of a PTE. These coping strategies have also been studied in the context of bereavement. For example, lower FFC may be a risk factor for more severe symptoms of bereavement grief in middle-aged (Burton et al., 2012) and older adults (Knowles & O'Connor, 2015).

Both the differential benefits of FFC and TFC and variation across PTE suggest the importance of flexibility to engage in either coping strategy (Bonanno & Diminich, 2013). Coping flexibility (CF) is defined as the perceived ability to engage in each of these coping strategies adaptively and interchangeably. Previous research has investigated the role of CF in mental health within the context of different PTE and different populations. For instance, Knowles and O'Connor (2015) found that higher CF significantly predicted lower grief severity and lower perceived loneliness among older widows and widowers. Similarly, Burton and colleagues (2012) found that lower CF was associated with complicated grief in both American and Chinese samples. Higher CF was also associated with lower severity of depressive symptoms among both human-rights advocates (Rodin et al., 2017) and Korean adults (Park, Chang, & You, 2015) with a history of exposure to trauma.

Previous research has also investigated predictors of resilience in response to PTE (Bonanno, Romero, & Klein, 2015). For example, survivors of the SARS epidemic were more likely to exhibit resilience and lower SARS-related worry if they were male and had higher perceived social support (Bonanno et al., 2008). In addition, older age, being male, lower education level, and greater social support were predictors of resilience following the September 11 terrorist attack in adults living in the New York City area (Bonanno, Galea, Bucchiarelli, & Vlahov, 2007). It is possible that demographic and social factors predict coping abilities. Moreover, social factors associated with coping abilities may be modifiable and thus, could be potential targets for intervention. Given the greater risks to older adults, it is pertinent to evaluate the pandemic's impact on mental health and to identify effective coping strategies.

Purpose and predictions

We determined the relative contribution of CF and the two distinct coping strategies, FFC and TFC, on negative affect in persons 50 years of age and older during the COVID-19 pandemic. The primary aim of the study was to examine the relationships between coping strategies and the

presence of depressive and anxiety symptoms. We hypothesized that CF would be a significant predictor of both depressive and anxiety symptoms, such that higher overall flexibility would be associated with lower negative affect symptoms. Then, we assessed the independent influences of FFC and TFC on both depressive and anxiety symptoms. Based on prior research, we hypothesized that higher FFC would be associated with lower negative affect. Finally, we investigated potential demographic and social factors related to the coping strategies that predicted reduced levels of depressive and anxiety-related symptoms.

Research design and methods

Survey design and participants

Analyses were conducted on responses to our Mood and Activity during COVID-19 (MAC) online survey (Callow et al., 2020), collected from 9 April 2020 to 13 May 2020. In short, the survey is a 136-item online questionnaire that includes questions about demographics, social factors, perceived coping abilities, depressive symptoms, and anxiety symptoms. The survey link was distributed through social media and online advertising to reach our target demographic, English-speaking adults aged 50, and older residing in the USA or Canada. Informed consent was obtained electronically prior to the survey, and the research was approved by the University of Maryland Institutional Review Board. Participants were free to skip questions they did not want to answer.

Perceived Ability to Cope with Trauma Scale

The Perceived Ability to Cope With Trauma (PACT) scale is a 20-item questionnaire consisting of two subscales that measure one's perceived ability to engage in two distinct coping strategies: TFC and FFC (Bonanno et al., 2011). Items on both subscales are rated on a 7-point Likert scale from 1 (not at all able) to 7 (extremely able), resulting in a range of 1 to 7 for each subscale score. The TFC factor is defined as the perceived ability to process a traumatic experience by allowing oneself to experience thoughts and emotions associated with the trauma. This subscale is calculated by averaging the self-reported rating across 8-items (Cronbach's alpha = 0.82), such as: 'Pay attention to distressing feelings that result from the event', 'Spend time alone', and 'Face the grim reality head on'. The FFC factor is defined as the perceived ability to shift attention away from the trauma and toward other less distressing activities, thoughts, or emotions. This subscale is calculated by averaging the self-reported rating across 12-items (Cronbach's alpha = 0.92), such as: 'Stay focused on my current goals and plans', 'Find activities to help me keep the event off my mind', and 'Comfort other people'. CF is defined as the perceived ability to engage in each of these coping strategies adaptively and interchangeably. The PACT quantifies CF by summing FFC and TFC subscale scores and then subtracting the absolute value of the difference between the two subscales. Through this method, higher scores on both subscales, as well as lower discrepancy between the two subscales each contribute to higher CF scores. For the purposes of this study, the instructions

were modified to refer to ongoing coping in response to the COVID-19 global pandemic.

Geriatric Depression Scale

The Geriatric Depression Scale (GDS) is a 30-item, self-report measure of depressive symptoms experienced during the past week (Yesavage et al., 1982). The scale uses dichotomous ('yes' or 'no') response options. Each response that indicates the presence of a symptom is scored as one point. A cumulative score (Cronbach's $\alpha = 0.91$) measures the level of depression, with higher scores indicating increased severity. The original scoring assigns the following clinical ranges: normal (0–9), mild (10–19), and severe (20–30) (Yesavage, 1982).

Geriatric Anxiety Scale

The Geriatric Anxiety Scale (GAS) is a 30-item, self-report measure of anxiety symptoms experienced during the past week (Segal, June, Payne, Coolidge, & Yochim, 2010). The measure uses a 4-point Likert scale from 0 (not at all) to 3 (all of the time). A cumulative score (Cronbach's $\alpha = 0.91$) of items 1–25 measures the level of anxiety, with higher scores indicating increased severity. Scores greater than 16 indicate clinically significant anxiety (Gould et al., 2014). The last five items are not included in the cumulative score but identify areas of concern.

Statistical approach

Cases were excluded if they were classified as outliers on at least two of the following three criteria: excessive Mahalanobis distance ($p < .001$), high Cook's $d (>4/N)$, or excessive leverage. A series of hierarchical multiple regression analyses were performed to determine the proportion of variance in either the GAS or the GDS accounted for by PACT scores (either flexibility alone or the combination of forward-focused and trauma-focused coping), after controlling for age decade, educational level, and sex. Data were analyzed using version 4.0.0 of R, and data screening was performed with the MeMoBootR package (Buchanan, 2020).

Results

Demographic information and responses to PACT, GDS, and GAS

After excluding respondents under 50 years of age, 1356 surveys were submitted. Participants were excluded from the analyses if we could not obtain an overall summary score for the relevant predictor variables or if demographic covariates were missing, resulting in a total sample of 839 persons 50 years of age and older. The total sample was predominantly female (79.9%), White (86.3%), and highly educated, with a college degree or higher (64.1%). Scores for the PACT, GDS, GAS, and descriptive information for sex, race, age decade, and educational background are reported in Table 1.

Some participants were missing an overall score for either depressive symptoms or anxiety symptoms and were excluded from analyses that pertained to the missing

Table 1. Descriptive statistics for total sample ($N = 839$).

Demographic factor	<i>N</i>	%
<i>Sex</i>		
Female	670	79.9
Male	169	20.1
<i>Race</i> [†]		
American Indian/Alaska Native	2	0.2
Asian	30	3.6
Black or African American	11	1.3
Hispanic, Latino, or Spanish	14	1.7
Native Hawaiian or Pacific Islander	1	0.1
White	724	86.3
Multiracial	20	2.4
Prefer not to say	36	4.3
<i>Age group</i>		
50–59	233	27.7
60–69	347	41.4
70–79	209	24.9
80–89	50	6.0
<i>Education</i>		
Some high school	7	0.8
High school/GED	73	8.7
Some college	221	26.3
College (BA/BS)	258	30.8
Graduate (MA/MS)	195	23.2
Doctorate (MD, PhD, JD)	85	10.1
<hr/>		
Scale score	<i>M</i>	<i>SD</i>
<i>PACT</i>		
Coping flexibility	10.3	2.0
Forward-focused	5.4	1.0
Trauma-focused	5.5	0.9
<i>Mental health outcomes</i>		
GDS score	8.8	7.0
Normal ($N = 511$, 63.9%)		
Mild ($N = 203$, 25.4%)		
Severe ($N = 86$, 10.8%)		
GAS score	9.9	6.7

Note. [†] Indicates one missing data point. Mental health outcomes are based on a sample size of 800 for the GDS score and clinical categories and a sample size of 638 for the GAS score.

response variable. Of the total sample of 839 participants, 815 respondents (97%) were included in analyses of depressive symptoms, while 651 respondents (77.6%) were included in analyses of anxiety symptoms, prior to outlier exclusion. Only 10–15 cases were excluded due to outliers across all analyses. Demographic factors for each of these samples are reported in Supplementary Table 1.

Significant correlations between the GAS and PACT CF, FFC, and TFC were observed ($r_{\text{GAS-CF}} (N = 639) = -0.472$, $p < .001$, $r_{\text{GAS-FFC}} (N = 638) = -0.547$, $p < .001$, $r_{\text{GAS-TFC}} (N = 638) = -0.334$, $p < .001$, respectively). A similar pattern of significant correlations was observed between the GDS and the three PACT measures ($r_{\text{GDS-CF}} (N = 805) = -0.646$, $p < .001$, $r_{\text{GDS-FFC}} (N = 800) = -0.709$, $p < .001$, $r_{\text{GDS-TFC}} (N = 800) = -0.452$, $p < .001$).

Coping and depression

Coping flexibility and depression

Ten cases meeting outlier criteria were excluded, resulting in a total sample size of 805. First, age decade, educational level, and sex were used to predict GDS total scores. The overall regression equation was significant ($F(9, 795) = 3.62$, $p < .001$, $R^2_{\text{adjusted}} = 0.028$). Sex was a significant predictor of GDS scores, suggesting that compared to men, the demographically-adjusted mean GDS scores for women were approximately 2.3 points higher. In addition, relative to persons who had not completed high school, high school graduates reported significantly greater depression scores. There were no other differences among educational

levels or among age groups. When PACT CF score was entered on the second step, there was a significant change in R^2 ($\Delta R^2_{\text{adjusted}} = 0.414$, $p < .001$), and the overall regression equation remained significant ($F(10, 794) = 64.77$, $p < .001$). CF score was a strong predictor of GDS score, suggesting that for every unit increase in PACT flexibility score, the demographically-adjusted GDS score decreased by approximately 2.2 points (see Figure 1, Panel A). While sex continued to be strongly associated with GDS score, there were no statistically significant age decade or educational level effects (see Supplementary Table 2).

Forward-focused and trauma-focused coping and depression

Fifteen cases meeting outlier criteria were excluded, resulting in a total sample size of 800. Using sex, age decade, and educational level as predictors of GDS on the first step yielded a statistically significant equation ($F(9, 790) = 3.97$, $p < .001$, $R^2_{\text{adjusted}} = 0.032$). This analysis revealed a significant effect of sex, indicating a higher GDS score for women relative to men. In addition, relative to persons who had not completed high school, high school graduates, college graduates, and persons who had completed a doctoral degree reported higher levels of depression. On the second step, TFC and FFC were both statistically significant predictors of GDS score, producing an $\Delta R^2_{\text{adjusted}}$ of 0.496 ($p < .001$), and the overall regression equation remained significant ($F(11, 788) = 82.27$, $p < .001$). Of the two coping styles, FFC showed a stronger relationship with GDS score than did TFC. For every one-unit increase in FFC, the demographically-adjusted GDS score *decreased* by approximately 5 points (see Figure 1, Panel C). In contrast, for every one-unit increase in TFC, GDS scores *increased* by 0.7 points, suggesting that greater TFC was associated with greater depressive symptoms (see Figure 1, Panel E). The significant effect of sex and greater depressive symptoms for high school graduates, college, and doctoral graduates relative to persons who had not completed high school remained (see Table 2).

Coping and anxiety

Coping flexibility and anxiety

Twelve cases meeting outlier criteria were excluded, resulting in a total sample size of 639. When GAS scores were predicted using sex, age decade, and educational level, the overall regression equation was significant ($F(10, 628) = 3.18$, $p < .001$, $R^2_{\text{adjusted}} = 0.033$). Sex was a strong predictor of GAS score, with women reporting mean scores of approximately 2.6 points higher than men, while individuals in their 70s and 80s reported less anxiety relative to persons in their 50s. A statistically significant $\Delta R^2_{\text{adjusted}}$ of 0.232 ($p < .001$) was observed when PACT CF was added on the second step, and the overall equation was again significant ($F(11, 627) = 21.89$, $p < .001$). CF was strongly related to GAS score, indicating that for every unit change in PACT CF, the demographically-adjusted GAS score is reduced by nearly 2 points (see Figure 1, Panel B). As with the initial regression, sex, and a small effect of age decade in which persons in their 70s and 80s reported less anxiety

relative to persons in their 50s, remained significant (see Supplementary Table 3).

Forward-focused and trauma-focused coping and anxiety

Thirteen cases meeting outlier criteria were excluded, resulting in a total sample size of 639. The regression of GAS scores on sex, age decade, and educational level resulted in a significant regression equation ($F(9, 628) = 3.39$, $p < .001$, $R^2_{\text{adjusted}} = 0.033$). A significant effect of sex was again observed, indicating that women reported a mean demographically adjusted GAS score approximately 2.6 points higher than men. In addition, compared to persons in their 50s, individuals in their 70s and 80s again reported significantly less anxiety. When TFC and FFC were added on the second step, there was a statistically significant $\Delta R^2_{\text{adjusted}}$ of 0.306 ($p < .001$), and the overall regression equation remained significant ($F(11, 626) = 30.59$, $p < .001$). However, only FFC was statistically significant, suggesting that for every one unit increase in FFC, GAS score decreases by approximately 4.5 points (see Figure 1, Panels E and F). The previously observed effects of sex, and lower anxiety among persons in their 70s and 80s relative to persons in their 50s, remained significant (see Table 3).

Factors contributing to coping style

Because we found that the CF and FFC strategies were independent predictors of lower depression and anxiety symptoms, whereas TFC, in and of itself, was not necessarily an adaptive strategy, we further examined some possible demographic and social factors that predicted greater CF and greater FFC. In addition to the demographic variables of age, sex, and education, we investigated the influence of ratings of extent of social isolation and the frequency of contact with family and friends. The social isolation question asked respondents, 'Since COVID-19 started, how socially isolated have you felt from friends and relatives', and response options included Very, Somewhat, Neutral, Not isolated most of the time, and Never isolated. The frequency of contact question asked respondents, 'Have you maintained contact with friends and/or family outside of your home', and response options included No contact, Occasional contact, Contact most days of the week, and Contact every day. Given their ordinal nature, the latter two variables were treated as factors rather than as continuous variables.

Predictors of coping flexibility

Data screening identified 13 cases that were excluded due to meeting at least two of the three criteria for being an outlier. After these cases were eliminated, the following analysis was based on a final sample size of 858. When age decade, sex, and education level were entered on the first step, the overall regression equation was statistically significant ($F(10, 847) = 1.977$, $p = .033$, $R^2_{\text{adjusted}} = 0.011$). High school graduates (vs. persons with some high school) showed a marginally significant trend toward lower CF ($p = .063$), but no other significant effects were observed. When perceived social isolation and frequency of contact with friends and family were entered on the second step,

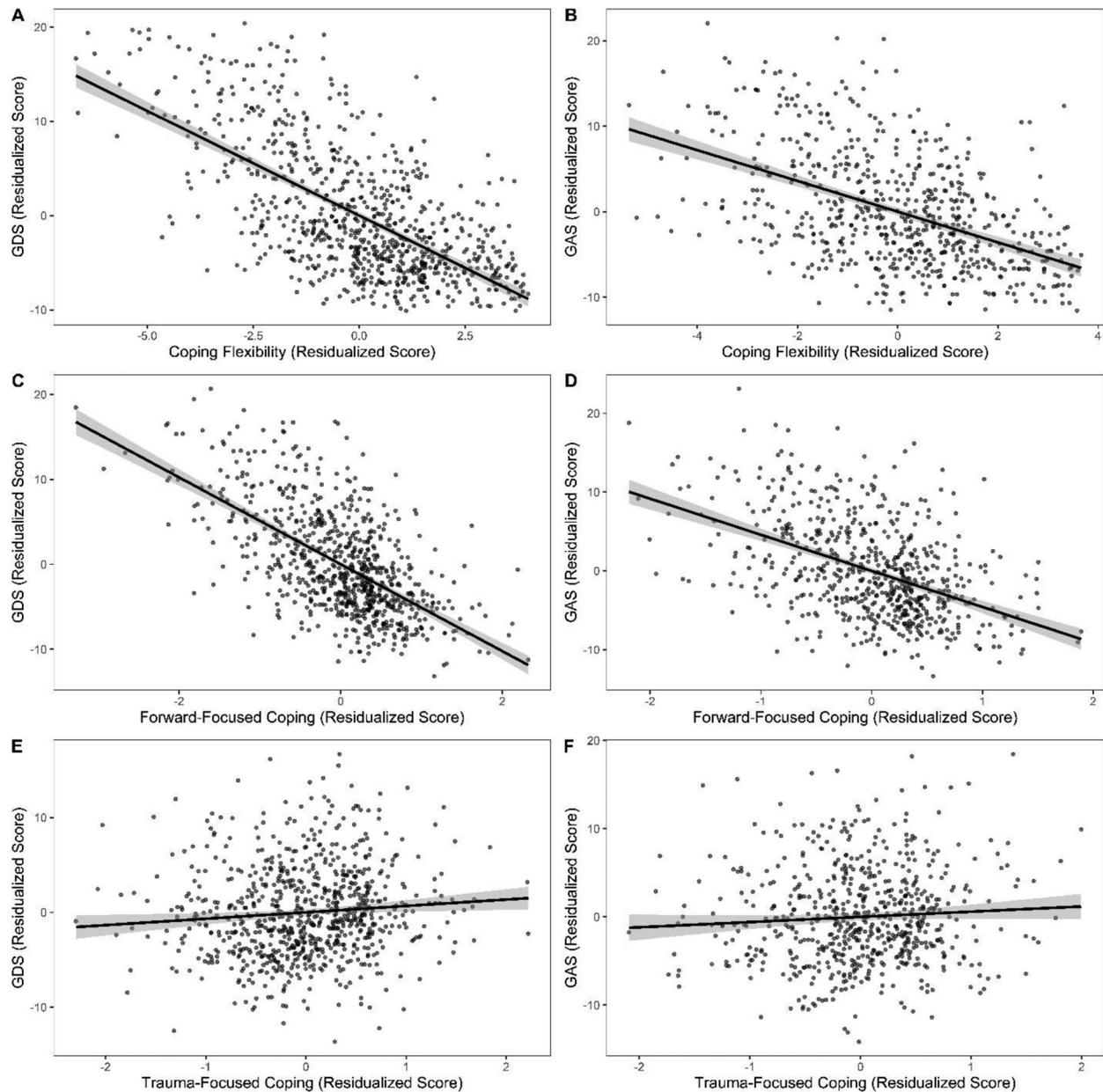


Figure 1. Coping and negative affect. Note. Panel A is based on a sample size of 805. Panel B is based on a sample size of 639. Panels C and E are based on a sample size of 800. Panels D and F are based on a sample size of 638.

Table 2. Final model predicting GDS scores using demographic variables and PACT forward-focused and trauma-focused coping scores.

Predictor variable	Estimate	SE	<i>t</i>	Pr(> <i>t</i>)
(Intercept)	27.57	2.28	12.11	<.0001
Age 60–69 (vs. 50–59)	0.13	0.41	0.32	.746
Age 70–79 (vs. 50–59)	–0.88	0.47	–1.86	.063
Age 80–89 (vs. 50–59)	–1.15	0.78	–1.46	.144
Females (vs. Males)	1.96	0.43	4.54	<.0001
High School Graduate (vs. Some High School)	4.43	2.05	2.16	.031
Some College (vs. Some High School)	3.59	1.99	1.81	.071
College Graduate (vs. Some High School)	4.26	1.98	2.15	.032
Graduate Degree (vs. Some High School)	2.92	1.99	1.46	.144
Doctoral Degree (vs. Some High School)	4.32	2.03	2.13	.034
Trauma-focused coping	0.71	0.26	2.69	.007
Forward-focused coping	–5.12	0.23	–22.24	<.0001

Note. Scale scores refer to the Perceived Ability to Cope with Trauma (PACT) scale and the Geriatric Depression Scale (GDS).

there was a statistically significant $\Delta R^2_{\text{adjusted}}$ of 0.111 ($p < .001$), and the overall regression equation was significant ($F(17, 840) = 7.98, p < .001$). High school graduates (vs. persons with some high school) again showed a marginally significant trend toward lower CF scores ($p = .058$).

Increased perceived social isolation was a significant predictor of lower CF across all levels of isolation. The greatest difference was observed between persons who felt very isolated relative to persons who did not feel isolated, where persons who felt very isolated had mean CF scores

Table 3. Final model predicting GAS scores using demographic variables and PACT forward-focused and trauma-focused coping scores.

Predictor variable	Estimate	SE	t	Pr(> t)
(Intercept)	29.11	3.53	8.24	<.0001
Age 60–69 (vs. 50–59)	–0.46	0.54	–0.85	.398
Age 70–79 (vs. 50–59)	–1.58	0.60	–2.64	.009
Age 80–89 (vs. 50–59)	–2.47	1.00	–2.47	.014
Females (vs. Males)	2.66	0.53	4.98	<.0001
High School Graduate (vs. Some High School)	1.59	3.28	0.48	.629
Some College (vs. Some High School)	2.12	3.22	0.66	.510
College Graduate (vs. Some High School)	2.06	3.21	0.64	.521
Graduate Degree (vs. Some High School)	1.44	3.22	0.45	.656
Doctoral Degree (vs. Some High School)	2.51	3.25	0.77	.440
Trauma-focused coping	0.57	0.35	1.64	.102
Forward-focused coping	–4.57	0.34	–13.32	<.0001

Note. Scale scores refer to the Perceived Ability to Cope with Trauma (PACT) scale and the Geriatric Anxiety Scale (GAS).

Table 4. Final model predicting PACT forward-focused coping scores using demographic variables and ratings of perceived social isolation and frequency of contact with family and friends.

Predictor variable	Estimate	SE	t	Pr(> t)
(Intercept)	6.50	0.48	13.61	<.0001
Age 60–69 (vs. 50–59)	0.08	0.08	1.03	.301
Age 70–79 (vs. 50–59)	0.06	0.09	0.67	.501
Age 80–89 (vs. 50–59)	0.11	0.14	0.77	.442
Age 90+ (vs. 50–59)	–0.39	0.97	–0.40	.686
Females (vs. Males)	–0.03	0.08	–0.37	.715
High School Graduate (vs. Some High School)	–0.65	0.45	–1.43	.153
Some College (vs. Some High School)	–0.43	0.44	–0.97	.333
College Graduate (vs. Some High School)	–0.39	0.44	–0.89	.375
Graduate Degree (vs. Some High School)	–0.40	0.45	–0.91	.366
Doctoral Degree (vs. Some High School)	–0.43	0.45	–0.95	.343
<i>Perceived isolation</i>				
Not Isolated Most of the Time (vs. Never Isolated)	–0.47	0.15	–3.16	.002
Neutral (vs. Never Isolated)	–0.67	0.16	–4.15	<.0001
Somewhat Isolated (vs. Never Isolated)	–0.54	0.13	–4.20	<.0001
Very Isolated (vs. Never Isolated)	–1.11	0.13	–8.23	<.0001
<i>Contact frequency with friends and family</i>				
Occasional Contact (vs. No Contact)	–0.31	0.13	–2.45	.015
Contact Most Days of Week (vs. No Contact)	0.04	0.13	0.29	.770
Contact Everyday (vs. No Contact)	0.26	0.14	1.90	.058

that were 2.0 points lower than persons who did not feel isolated. There a small effect of frequency of contact with family and friends, with persons reporting only occasional contact with family and friends reporting significantly lower overall flexibility scores than respondents having no social contact ($p = .008$) (see [Supplementary Table 4](#)).

Predictors of forward-focused coping

Data screening identified nine cases meeting two or more outlier criteria, and these cases were excluded from the analysis, leaving 880 cases for the analysis. Using multiple regression, FFC scores were regressed on sex, age decade, and educational level on the first step, but the overall regression equation was not statistically significant ($F(10, 869) = 1.32, p = .214, R^2_{\text{adjusted}} = 0.004$). On the second step, when perceived social isolation and frequency of contact with family and friends were entered as predictors, there was a statistically significant $\Delta R^2_{\text{adjusted}}$ of 0.144 ($p < .001$), and the overall regression equation was significant ($F(17, 862) = 10.05, p < .001$). Perceived social isolation was statistically significant. Relative to persons reported not feeling isolated, persons reporting any degree of social isolation had lower FFC scores. The greatest difference was observed between persons reporting no feelings of isolation and persons who felt very isolated, where persons feeling very isolated from family and friends had average FFC scores that were over one point less than the mean for persons who

reported no feelings of isolation. There was also a small effect of frequency of contact with family and friends. Relative to persons reporting having no contact with family and friends, persons reporting only occasional contact with family and friends obtained significantly lower FFC scores ($p = .015$). Persons reporting daily contact with family and friends demonstrated a marginally significant trend toward reporting higher FFC scores relative to respondents reporting no contact with family and friends ($p = .058$) (see [Table 4](#)).

Discussion

The COVID-19 pandemic and related psychosocial stressors have triggered warnings about the mental health impacts among the general population, with particular concern for older adults. The current study presents a report on coping strategies and mental health outcomes among persons 50 years of age and older living in the USA and Canada during the COVID-19 pandemic in the spring of 2020. The results indicated that higher CF was a significant predictor of lower self-reported depressive symptoms. Further analysis revealed that higher perceived FFC ability was significantly associated with lower depression. Meanwhile, higher perceived TFC ability significantly predicted slightly higher depressive symptomatology. Analyses of perceived coping abilities and anxiety symptoms exhibited a similar pattern.

Higher CF was associated with significantly lower anxiety symptoms. Likewise, higher FFC showed a significant association with lower anxiety. However, TFC was not significantly related to anxiety. These results suggest that both overall CF and FFC could be protective factors for older adults' mental health when confronted by the psychosocial stressors of a global pandemic.

Our findings provide insight into the relationships between coping strategies and depressive symptomatology during the COVID-19 pandemic. The association between higher CF and lower depressive symptoms indicates that CF is an adaptive attribute in this context. This finding is consistent with Bonanno's theory that higher CF predicts resilience in the face of PTE (Bonanno, 2005). Since our findings also suggest a clear adaptive advantage of higher FFC ability, the effect of CF may be predominantly driven by the large effect of FFC. Conversely, TFC appears to be somewhat maladaptive during this early stage of the pandemic. These patterns are analogous to prior research in bereavement and college adjustment. Both higher CF and higher FFC were associated with lower negative affect, whereas higher TFC was associated with higher negative affect in bereavement (Knowles & O'Connor, 2015) and in college adjustment at the initial evaluation (Galatzer-Levy et al., 2012).

Analyses of perceived coping abilities and anxiety symptoms exhibited a similar pattern for CF and FFC, but not for TFC. Higher CF and FFC were both separately associated with lower anxiety symptoms. However, TFC was not significantly associated with anxiety. The tripartite model posits that high negative affect is a shared factor between depression and anxiety, whereas low positive affect is unique to depression and hyperarousal is unique to anxiety (Clark & Watson, 1991). Moreover, prior research indicates that this model can be applied to depression and anxiety in older adults (Teachman, Siedlecki, & Magee, 2007). In the present study, the common effects of CF and FFC on depression and anxiety may reflect a decrease in negative affect. In contrast, the unique effect of TFC on depressive symptoms may reflect a slight decrease in positive affect, while having no significant effect on anxiety. Another potential distinction between depression and anxiety is temporal orientation. Specifically, depression tends to be associated with events in the past, whereas anxiety tends to be associated with events in the future (Eysenck, Payne, & Santos, 2006). TFC seems to emphasize the ability to process negative emotions related to past or present events as opposed to anticipating future events. As a result, TFC may not influence anxiety symptoms. To our knowledge, prior research has not investigated the relationships between anxiety and coping strategies as measured by the PACT in persons 50 years of age and older. The COVID-19 pandemic is a unique PTE that can trigger symptoms of depression and anxiety in some individuals. Therefore, the PACT offers unique insight into coping strategies that might be a protective factor for mental health. Importantly, the respondents reported their coping abilities and symptoms during an ongoing and prolonged PTE. The psychosocial stressors related to the COVID-19 pandemic could potentially trigger worries related to health, finances, and social connectedness. Thus, anxiety is a particularly relevant outcome variable. Ultimately, FFC seems to be especially beneficial in

mitigating negative affect in older adults during this early stage of the pandemic.

Recipe for adaptive coping strategies

Results from our initial analyses illustrated the potential value in determining which factors are linked to higher perceived coping abilities in our sample. A series of multiple regression analyses revealed perceived social isolation as a common predictor of CF and FFC. Lower perceived social isolation was a significant predictor of higher coping abilities. In contrast, social contact with friends and family outside the home was not a significant predictor in any of the models. This distinction implies that coping relies on the quality of social relationships to a greater extent than the frequency of social contact. In other words, our analyses convey that coping ability is more strongly associated with the qualitative emotional and cognitive components of social connectedness than the quantitative behavioral component alone. Similarly, prior research indicates that higher CF and FFC both predicted lower loneliness and yearning for a deceased spouse in older bereaved adults (Knowles & O'Connor, 2015).

Strengths and limitations

Our relatively large sample represented a broad range of geographic regions in the USA and Canada. This research utilized the PACT, GDS, and GAS, which are standardized and validated measures of perceived coping abilities, depression, and anxiety, respectively. To our knowledge, this is the first study to assess FFC and TFC strategies, as well as CF, among persons 50 years of age and older during the early stages of the still ongoing COVID-19 pandemic. A major aim of resilience research is to elucidate how the type and stage of PTE influence the adaptiveness of different coping strategies (Bonanno et al., 2015). This study is unique in its account of coping strategies and negative affect among persons 50 years of age and older during highly restrictive SDG, widespread economic disruption, and rapidly rising confirmed case numbers.

Our study also has limitations. First, this study utilized a cross-sectional design, precluding causal inferences between coping strategies and mental health outcomes, including the direction of a possible causal relationship. For example, depressive symptoms or anxiety symptoms could influence perceived coping abilities. Second, a lack of baseline measures for mental health and coping limits our ability to differentiate psychological functioning before the crisis from changes specifically brought about by the pandemic itself. Third, the severity of psychosocial stressors and access to resources vary widely in the general population. These factors may influence mental health and perceived coping abilities in ways that cannot be adequately measured by an online questionnaire. Finally, our sample was predominately female, White, and highly educated. These demographic factors could influence the relationship between coping and mental health, access to resources, and exposure to psychosocial stressors. As a result, the homogeneity of our sample limits the widespread generalizability of our results.

Recommendations and conclusions

Our results illustrate the potential mental health benefits of FFC strategies for middle aged and older adults in the context of the COVID-19 pandemic. Based on our findings, we recommend that mental health interventions focus on modifiable factors associated with FFC. Interventions should strive to foster a greater sense of social connectedness rather than focusing solely on the frequency of behavioral activation. Interventions could also directly encourage behaviors that exemplify FFC, such as developing and maintaining a routine and shifting attention toward caring for others. Conversely, it could be beneficial to impose time limits on behaviors associated with TFC, such as consuming distressing news.

Our unique findings reflect responses to a currently ongoing pandemic in the population most at risk for severe COVID-19 symptoms. As the pandemic continues for the foreseeable future, our findings provide important evidence for behavioral strategies that can be employed to reduce the impact of the pandemic on negative affect in middle aged and older adults. Future research should explore the influence of different coping strategies and CF on mental health trajectories as the circumstances of this public health crisis evolve. Specifically, some evidence suggests that TFC could be adaptive in facilitating a reduction in negative affect over time (Galatzer-Levy et al., 2012). Therefore, it is possible that the benefits of TFC may manifest during a later stage of the pandemic; a topic of future investigation as we conduct follow-up surveys within this cohort.

Acknowledgements

Thank you to the survey respondents for volunteering to participate in this study.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This work was supported by the Department of Kinesiology at the University of Maryland.

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