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The moderating role of resilience on caregiver stress and emotional distress during COVID-19

Abstract

The COVID-19 pandemic amplified psychological distress experienced by caregivers of individuals with chronic illnesses. This study examined the relationships among caregiver stress, resilience, and emotional distress (anxiety, depression, and anger) in caregivers during the pandemic. Using archival data from the COVID-19 Health and Mental Health Survey, analysis of responses from 252 adult caregivers in the United States revealed significant positive associations between caregiver stress and emotional distress. Specifically, greater caregiver stress strongly predicted elevated anxiety, depression, and anger. Contrary to expectations, resilience did not uniformly moderate these relationships. Although resilience moderated the relationship between caregiver stress and anger, it paradoxically amplified rather than mitigated stress-induced anger responses. No moderation effects of resilience were found for anxiety or depression. These findings indicate that resilience may function differently across emotional domains, suggesting a nuanced role in caregiving contexts characterized by prolonged, uncontrollable stressors. Consequently, interventions for caregivers should emphasize targeted strategies for managing anger and emotional dysregulation, in addition to promoting resilience. Further research is recommended to explore alternative mechanisms by which resilience affects caregiver psychological health during prolonged stress situations.

Keywords: COVID-19, mental health, resilience, caregiver, emotional distress, anxiety, depression, anger

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Abbreviations: BRS, brief resilience scale; COVID-19, Coronavirus Disease 2019; CATS, cognitive activation theory of stress; KCSS, Kingston caregiver stress scale; PROMIS, patient-reported outcomes measurement information system

Introduction

Research consistently shows that caregivers of individuals with chronic illnesses are at heightened risk for psychological distress, including anxiety, depression, and emotional exhaustion.[1–3] The COVID-19 pandemic introduced additional stressors, including fear of virus transmission, reduced access to medical and social support services, and increased financial strain.[4,5] Research indicates that caregivers during the pandemic experienced significantly higher levels of depression and psychological distress compared to noncaregivers,[4] with younger caregivers and those with lower income or education levels disproportionately affected.[5,6]

Resilience, broadly defined as the capacity to adapt and recover from adversity, has been shown to buffer against caregiving burden,[7] and has been identified as a protective factor in the mitigation of the psychological impact of stressors associated with caregiving.[8] Higher levels of resilience are also associated with lower levels of anxiety and depression and improved psychological well-being.[9,10] However, the interplay between caregiver stress, resilience, and emotional distress during an unprecedented global crisis (i.e., the COVID-19 pandemic) is insufficiently understood.

Cognitive activation theory of stress[11] (CATS) provides a framework for understanding how individuals cognitively appraise and respond to stressors, influencing both psychological and physiological outcomes. According to CATS, stress responses are shaped by cognitive evaluations of stress stimuli and the individual's perceived ability to cope.[11]

Figure 1 illustrates this process: stress stimuli are processed in the brain, leading to a stress response that can manifest as either phasic anabolic (adaptive, 'train') or sustained catabolic (maladaptive, 'strain') activation. Defense mechanisms and resilience act as cognitive filters that influence outcome expectancy, determining whether an individual's response fosters recovery or contributes to prolonged distress. Feedback loops further modulate how stress stimuli are appraised over time, reinforcing or adjusting future responses.

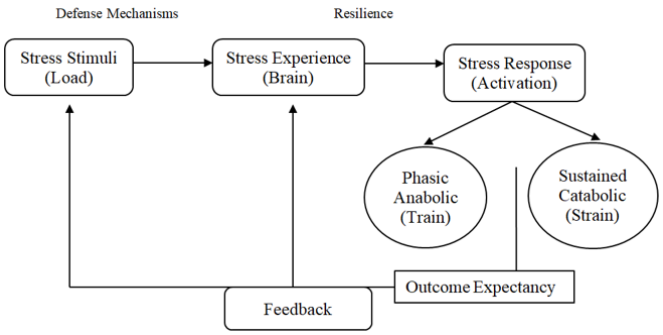

Figure 1 Cognitive activation theory of stress.

Building on the CATS, the conceptual framework for this study (Figure 2) illustrates the hypothesized relationships among stress stimuli, stress response, resilience, and emotional distress during the COVID-19 pandemic. In this model, stress stimuli, specifically the stress experienced by caregivers during the pandemic, initiates a stress response that may manifest as adaptive (phasic anabolic) or maladaptive (sustained catabolic) activation. Resilience is proposed to moderate this stress response, influencing its intensity and trajectory. Ultimately, the stress response impacts emotional distress, operationalized in this study as anxiety, depression, and anger. This

framework guided the investigation of how caregiver stress and resilience interact to affect emotional outcomes in the context of prolonged pandemic-related stress.

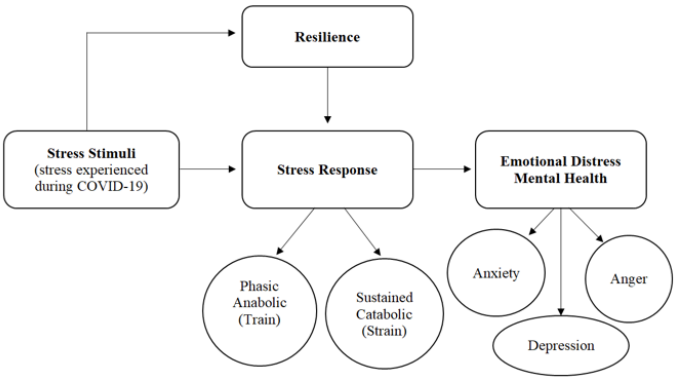

Figure 2 Conceptual framework.

Specifically, we hypothesized that:

1) High caregiver stress is associated with higher levels of emotional distress; and

2) Resilience moderates the effects of caregiver stress on emotional distress. More specifically, the association between caregiver stress and emotional distress is more pronounced for those with lower resilience.

Materials and methods

This study used archival survey data[12] from the COVID-19 Health and Mental Health Survey[13] to examine psychosocial functioning among caregivers during the COVID-19 pandemic. The original survey consisted of 120 questions and was completed by 1,920 participants. It aimed to explore relationships among personal characteristics, emotional distress, behaviors, interpersonal relationships, and health outcomes during the pandemic. Participants provided demographic details (e.g., age, gender identity, race and ethnicity, educational attainment, occupation, and annual income), completed standardized questionnaires, and answered general questions addressing a broad range of their pandemic experiences. For this current analysis, a subsample of 252 adult caregivers of individuals with chronic medical conditions was selected. Participants included in this subsample met the following criteria: aged 18 years or older, English-speaking, residing in the United States, and having completed all relevant measures within the survey.

Caregiver stress, the primary independent variable, was measured using the Kingston Caregiver Stress Scale[14] (KCSS), a validated 10-item instrument assessing stress related to caregiving responsibilities, family dynamics, and financial concerns. Items were rated on a 5-point Likert scale ranging from 1 (*feeling no stress*) to 5 (*extreme stress*), with higher scores indicating increased perceived stress (α = .89). Resilience, which served as the moderating variable, was measured using the Brief Resilience Scale[15] (BRS), a 6-item scale designed to assess an individual's perceived ability to recover from stress. Items were rated on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating greater resilience. The BRS has demonstrated good internal consistency (α = .80–.91) and validity across diverse samples.[15]

The dependent variable, emotional distress, was measured using three validated Patient-Reported Outcomes Measurement Information System[16] (PROMIS®) Short Forms targeting anxiety, depression, and anger. The PROMIS Emotional Distress—Anxiety Short Form 4a includes four items assessing symptoms such as fear, anxiety, and excessive worry over the past seven days, with responses rated on a 5-point Likert scale from 1 (*never*) to 5 (*always*). Similarly, the PROMIS Emotional Distress - Depression Short Form 4a contains four items measuring feelings of worthlessness, helplessness, and hopelessness, using the same response scale. The PROMIS Emotional Distress - Anger Short Form 5a includes five items evaluating the frequency of irritability, anger, and frustration over the prior week. Higher scores on each scale reflect greater emotional distress. The PROMIS Emotional Distress Short Forms have demonstrated excellent internal consistency (α = .90–.95) and high validity, with strong correlations ($r \geq .95$), to legacy instruments assessing depression, anxiety, and anger.[16]

Responses were scored by averaging item ratings within each scale. Statistical analyses included descriptive statistics, Cronbach's alpha to assess reliability, and Pearson correlations to examine associations among caregiver stress, resilience, and emotional distress. Hierarchical linear regressions tested whether caregiver stress predicted anxiety, depression, and anger, adjusting for demographic covariates (gender, ethnicity, healthcare occupation). Moderation (Hayes PROCESS Model 1) analyses explored the moderating role of resilience in these relationships. A priori power analysis indicated a minimum sample of 77 was needed to detect moderate effects ($f^2 = 0.15$) with 80% power; the analyzed sample ($N = 252$) exceeded this threshold.

Results

The sample of 252 caregivers was predominantly female (55%), White (71%), and aged between 25 and 55 years. Participant demographic characteristics are summarized in Table 1. Caregivers reported moderate levels of stress (M=24.183, SD=10.417) and low to moderate levels of emotional distress, with mean anxiety scores (M = 9.718, SD = 4.742), depression (M = 14.659, SD = 5.984), and anger (M = 9.651, SD = 5.312). The mean resilience score was moderate at 3.293 (SD = 0.841). Skewness and kurtosis values for all variables fell within acceptable ranges, suggesting normal distribution. Reliability analyses demonstrated acceptable internal consistency for all measures (α = .85–.91). Descriptive statistics for the primary study variables are presented in Table 2.

Table 1 Sample characteristics (N = 252)

Variable	*n*	%
Gender identity		
Female	138	54.8
Male	111	44
Non binary	2	0.8
Other	1	0.4
Age		
18–24	21	8.3
25–30	28	11.1
31–34	29	11.5
35–40	31	12.3
41–44	26	10.3
45–50	32	12.7
51–55	25	9.9
56–60	22	8.7
61–64	8	3.2

Table 1Continued...

65+	30	11.9
Racial identity		
Caucasian	178	70.6
Black or African American	25	9.9
Asian	17	6.7
American Indian or Alaskan	5	2
Hispanic	44	17.5
Other	3	1.2
Ethnicity		
Hispanic or Latinx	53	21
Not Hispanic or Latinx	199	79
Highest level of education		
No school	1	0.4
Grades 1 through 8	2	0.8
Grades 9 through 11 or some high school	9	3.6
Grade 12 or completed high school	59	23.4
GED	13	5.2
Some college	49	19.4
Associate degree	34	13.5
Bachelor's degree	45	17.9
Trade or vocational school degree	2	0.8
Graduate degree	26	10.3
Doctoral or advanced doctoral degree	12	4.8
Job status	12	4.8
Full-time	116	46
Part-time	37	14.7
Self-employed	26	10.3
Full-time student	9	3.6
Part-time student	1	0.4
Unemployed	10	4
Occupation		
Healthcare occupation	33	13.1
Non healthcare occupation	219	86.9
Household income		
Below 10,000	33	13.1
10,000–24,999	44	17.5
25,000–49,999	73	29
50,000–74,999	30	11.9
75,000–99,999	25	9.9
100,000–149,999	26	10.3
150,000 and greater	11	4.4
Prefer not to answer	10	4
Relationship status		
Single	65	25.8
In a relationship (not living with partner)	22	8.7
Engaged	3	1.2
Domestic partnership (living with partner but not married)	19	7.5
Married	109	43.3
Divorced	34	13.5
Widowed	4	1.6
Other	2	0.8

Table 2 Descriptive statistics on core measures

Construct	M	SD	Min	Max	Skewness	Kurtosis
PROMIS emotional distress						
Anxiety	9.718	4.742	4	20	0.486	−0.755
Depression	14.659	5.984	5	25	0.473	−1.071
Anger	9.651	5.312	4	20	−0.171	−0.999
Kingston caregiver stress						
Stress	24.183	10.417	10	50	0.658	−0.154
Brief resilience scale						
Resilience	3.293	0.841	1	5	−0.015	−0.07

To test the first hypothesis—that higher caregiver stress is associated with greater emotional distress, hierarchical regression analyses were conducted for anxiety, depression, and anger. After controlling for gender, racial identity, and healthcare occupation, caregiver stress emerged as a significant predictor of anxiety ($\beta = 0.625$, $p < .001$), depression ($\beta = 0.592$, $p < .001$), and anger ($\beta = 0.535$, $p < .001$). These results support the first hypothesis, indicating that greater caregiver stress is associated with higher levels of emotional distress across all three outcomes. Bivariate correlations among the core study variables are presented in Table 3 and coefficients from these analyses are displayed in Table 4.

Table 3 Bivariate correlation between core measures

Variable	Anxiety	Depression	Anger	Stress	Resilience
Anxiety	--				
Depression	0.862***	--			
Anger	0.701***	0.696***	--		
Stress	0.644***	0.617***	0.545***	--	
Resilience	−0.626***	−0.646***	−0.552***	−0.48***	--

*** $p < .001$.

Table 4 Predictors of anxiety, depression, and anger

Variable	B	SE_B	β	T	p
Anxiety					
Gender	.699	.455	.074	1.534	.126
Racial identity	1.173	.490	.114	2.394	.017
Healthcare occupation	−1.933	.677	−.137	−2.855	.005
Stress	.284	.022	.625	13.090	< .001
Depression					
Gender	.795	.529	.075	1.502	.134
Racial identity	1.457	.569	.126	2.561	.011
Healthcare occupation	−2.083	.787	−.132	−2.648	.009
Stress	.302	.025	.592	11.960	< .001
Anger					
Gender	1.422	.631	.119	2.254	.025
Racial identity	1.609	.678	.124	2.372	.018
Healthcare occupation	−.466	.938	−.026	−.497	.620
Stress	.305	.030	.535	10.141	< .001

To test the second hypothesis, that resilience moderates the relationship between caregiver stress and emotional distress, three moderation analyses were conducted using the Hayes PROCESS macro (Model 1) while controlling for gender, racial identity, and healthcare. The results revealed a significant moderation effect of resilience on the relationship between stress and anger. The results indicated a significant main effect of stress on predicting anger ($B = 0.23$, $SE = 0.03$, $p < .001$), as well as a significant main effect of resilience ($B = -2.57$, $SE = 0.39$, $p < .001$). Furthermore, the analysis

showed the interaction between stress and resilience was significant (B = 0.07, *SE* = 0.28, *p* = .014), suggesting that the effects of stress on anger were moderated by resilience. Table 5 presents the results of the analysis.

Table 5 Resilience as a moderator of stress on predicting anger

Variable	B	SE	95% CI LL	95% CI UL	t	p
(Constant)	13.37	0.62	12.16	14.59	21.63	< .001
Stress	0.23	0.03	0.16	0.29	7.16	< .001
Resilience	−2.57	0.39	−3.35	−1.79	−6.52	< .001
Stress resilience	0.07	0.28	0.01	0.12	2.48	.014
Healthcare occupation	0.59	0.87	−1.13	2.31	0.67	.500
Gender	0.83	0.58	−0.32	1.98	1.42	.157
Racial identity	1.51	0.62	0.29	2.74	2.44	.016

Discussion

This study examined the relationship between caregiver stress, resilience, and emotional distress during the COVID-19 pandemic. Consistent with the first hypothesis, caregiver stress was found to be a predictor of emotional distress across all three domains (anxiety, depression, and anger). Heightened levels of anxiety and depression within the study sample are consistent with the findings of existing literature.[1,4,17] These results also corroborate the findings research that identified clinically significant anxiety and depressive symptoms in a considerable proportion of caregivers.[5]

In testing the second hypothesis, resilience was expected to moderate the effects of caregiver stress on emotional distress, with higher resilience attenuating negative outcomes. This hypothesis was only partially supported. Resilience moderated the relationship between stress and anger, but contrary to expectations, this interaction revealed that higher resilience was associated with stronger, not weaker, stress-related anger. No significant moderating effects were observed for anxiety or depression. Although existing research generally portrays resilience as a factor that mitigates stress-related outcomes,[8–10,] this study presents a contrasting view with resilience escalating the impact of stress on anger.

Several potential explanations could explain this unexpected finding. First, the finding may suggest that highly resilient individuals experience greater frustration or emotional conflict when confronted with prolonged, uncontrollable stressors such as a pandemic. Second, resilience may not be uniformly protective across emotional domains; rather, it may have variable effects on different types of distress. These results align with prior research that conceptualizes resilience as a multidimensional construct,[18–21] potentially influencing outcomes through distinct cognitive or affective pathways.

The absence of moderation effects for anxiety and depression also deserves consideration. It is possible that the levels of chronic stress induced by caregiving during a pandemic overwhelmed the buffering capacity of resilience for internalizing symptoms. Alternatively, other unmeasured factors, such as social support, coping style, or access to resources, may have played a more significant role in shaping these outcomes. Taken together, the findings suggest that while caregiver stress is a consistent and significant predictor of emotional distress, the role of resilience is more nuanced than originally hypothesized. These results support a growing understanding that resilience does not operate in a vacuum but interacts with contextual and individual factors in complex ways.

Conclusion

This study contributes to the literature on caregiver mental health by providing evidence that caregiver stress during the COVID-19 pandemic was strongly associated with elevated anxiety, depression, and anger. Although resilience was expected to buffer these effects, it did not uniformly moderate the stress-distress relationship. Instead, it appeared to amplify anger responses under high stress, highlighting the complex and sometimes paradoxical role of resilience in emotionally charged caregiving contexts. From a practical standpoint, these findings suggest that interventions for caregivers should not only focus on enhancing resilience but also consider targeted strategies for managing anger and emotional dysregulation, particularly under conditions of sustained stress.

Future research should build on the current findings by exploring alternative conceptual pathways through which resilience impacts caregiver mental health. There is a rationale for testing a mediation model in which resilience indirectly influences emotional distress by reducing perceived stress. This approach may offer a more complete view of how stable traits like resilience shape psychological outcomes in high-stress caregiving contexts. Understanding the variability in how caregivers respond to chronic stress remains essential for designing effective mental health interventions, especially in anticipation of future public health crises or other widespread stressors that disproportionately affect caregiving populations.

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Conflict of interest

The authors declare that they have no conflicts of interest relevant to this manuscript.

References

1. Bahari G. Caregiving burden, psychological distress, and individual characteristics among family members providing daily care to patients with chronic conditions. *Perspect Psychiatr Care*. 2022;58(4):2043–2049.
2. Schulz R, Beach S, Czaja S, et al. Family caregiving for older adults. *Annu Rev Psychol*. 2020;71:635–659.
3. Stathopoulou A, Fragkiadakis GF. Assessment of psychological distress and quality of life of family caregivers caring for patients with chronic diseases at home. *AIMS Public Health*. 2023;10(2):456–468.
4. Ervin J, Fleitas Alfonzo L, Taouk Y, et al. Unpaid caregiving and mental health during the COVID-19 pandemic—A systematic review of the quantitative literature. *PLoS One*. 2024;19(4):e0297097.
5. Lane NE, Hoben M, Amuah JE, et al. Prevalence and correlates of anxiety and depression in caregivers to assisted living residents during COVID-19: A cross-sectional study. *BMC Geriatr*. 2022;22(1):662.
6. Rainero I, Bruni AC, Marra C, et al. The impact of COVID-19 quarantine on patients with dementia and family caregivers: A nationwide survey. *Front Aging Neurosci*. 2021;12:625781.
7. Cejalvo E, Martí-Vilar M, Merino-Soto C, et al. Caregiving role and psychosocial and individual factors: a systematic review. *Healthcare (Basel)*. 2021;9(12):1690.
8. Mollaei F, Sharif Nia H, Pouralizadeh M, et al. Resilience and related factors in caregivers of adult cancer patients: a systematic review. *Ann Med Surg*. 2024;86(6):3451–3459.

9. Cusinato M, Iannattone S, Spoto A, et al. Stress, resilience, and well-being in Italian children and their parents during the COVID-19 pandemic. *Int J Environ Res Public Health*. 2020;17(22):8297.
10. Davidson B, Schmidt E, Mallar C, et al. Risk and resilience of well-being in caregivers of young children in response to the COVID-19 pandemic. *Transl Behav Med*. 2021;11(2):305–313.
11. Ursin H, Eriksen H. The cognitive activation theory of stress. *Psychoneuroendocrinology*. 2004;29(5):567–592.
12. Levin L. *Health and mental health during COVID-19 database*. Fielding Graduate University. 2021.
13. Levin L, Liberty R, Rust K, et al. Health and mental health during COVID-19 survey. 2021.
14. Hopkins RW, Kilik LA. *The Kingston caregiver stress scale*. Kingston Scales Institute. 2016.
15. Smith BW, Dalen J, Wiggins K, et al. The brief resilience scale: assessing the ability to bounce back. *Int J Behav Med*. 2008;15(3):194–200.
16. Pilkonis PA, Choi SW, Reise SP, et al. Item banks for measuring emotional distress from the patient-reported outcomes measurement information system (PROMIS®): Depression, anxiety, and anger. *Assessment.* 2011;18(3):263–283.
17. Deli D, Tsouvelas G, Mentis M. A systematic review of depressive and anxiety symptoms in caregivers of dementia patients. *Psychiatriki.* 2025;36(1):72–80.
18. Hu T, Zhang D, Wang J. A meta-analysis of the trait resilience and mental health. *Pers Individ Dif*. 2015;76:18–27.
19. Jakovljevic M. Empathy, sense of coherence and resilience: Bridging personal, public and global mental health and conceptual synthesis. *Psychiatr Danub*. 2018;30(4):380–384.
20. Palacio C, Krikorian A, Limonero JT et al. Resilience in caregivers: a systematic review. *Am J Hosp Palliat Med*. 2020;37(8):648–658.
21. Gan Y, Fu Q. Risk perception and resilience response to COVID-19 mediated by positive and negative emotions: a study on Chinese college students. *PLoS One*. 2022;17(1):e0262161.

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