

Research Article

STRESS IN RELATIONSHIP WITH BURNOUT DUE TO COVID-19: THE MODERATING ROLE OF COPING STRATEGIES

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Abstract

This study investigates the relationship between stress and burnout related to the COVID-19 pandemic, focusing on the moderating influence of positive and negative coping strategies. In a cross-sectional survey involving 3,664 Vietnamese citizens aged 18 and above, the research explores the dynamics of stress and burnout symptoms associated with the ongoing pandemic. The results reveal a negative impact of stress symptoms on COVID-19-related burnout among the population. Notably, both positive and negative coping strategies are identified as significant moderators in the interplay between stress and burnout. This suggests that individuals' coping mechanisms influence the severity of stress and burnout experienced in dealing with COVID-19 challenges. These findings contribute to the foundational understanding of the stress-burnout relationship during the pandemic and provide essential insights for interventions. By recognizing the moderating role of coping strategies, this study lays the groundwork for strategies aimed at enhancing individuals' coping abilities, ultimately reducing stress and burnout levels. These insights hold the potential to assist individuals in adapting more effectively to the challenges posed by the COVID-19 pandemic, fostering improved mental well-being in the face of ongoing uncertainties. *ASEAN Journal of Psychiatry, Vol. 25 (3) March, 2024; 1-10.*

Keywords: Positive Coping Strategies; Negative Coping Strategies; COVID-19-Related Stress; COVID-19-Related Burnout; Moderating Role

Introduction

The COVID-19 virus originated in Wuhan and has become a global pandemic. According to the World Health Organization (WHO) update as of the current research (8th March 2023), there have been a total of 759,408,703 confirmed cases of COVID-19 worldwide, with a death toll of 6,866,434. In Vietnam, there have been 11,526,966 confirmed cases of COVID-19, with 43,186

deaths [1]. This pandemic has not only caused numerous economic, health, and social issues but also significantly affected the mental health of the population. Disease containment measures such as social distancing have been implemented to curb the spread of the virus, leading to various socioeconomic problems such as unemployment, income reduction, and isolation. These factors contribute to increased stress [2-5]. Furthermore, the fear and uncertainty surrounding the virus

have also taken a toll on individuals' mental well-being, leading to heightened levels of anxiety and depression. The long-term effects of the pandemic on mental health are yet to be fully understood, but it is clear that support and resources are crucial in addressing these challenges. Studies on students have shown that they have experienced increased stress and dissatisfaction in their academic performance since the outbreak of COVID-19 [6]. A longitudinal study conducted in Brazil found that individuals in isolation due to COVID-19 experienced continuous stress over time [7]. These findings highlight the importance of implementing mental health interventions and support systems to mitigate the negative impact of the pandemic on individuals' well-being. It is essential for policymakers and healthcare providers to prioritize mental health resources to address the ongoing challenges faced by individuals during this time. A population-based study in India also revealed that 74% of participants reported experiencing high levels of stress during the lockdown period caused by the pandemic [8]. In Vietnam, several reports have indicated that the disease has caused stress in various population groups [9,10]. Therefore, the findings from this study can provide valuable insights for policymakers and healthcare professionals to develop targeted interventions and support systems for those experiencing stress related to the pandemic. By understanding the extent of the problem, resources can be allocated effectively to address mental health needs in Vietnam during this challenging time.

Burnout is a syndrome consisting of emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment [11]. It is often experienced by individuals in high-stress professions, such as healthcare workers or first responders. Burnout can have serious consequences on both the individual's well-being and their ability to perform effectively in their job. Although work-related stress is considered a primary cause, stress from other sources is also recognized as a contributor to burnout [12]. Recently, the outbreak of COVID-19 has induced high levels of stress across various aspects of life. This has led to an increase in burnout among individuals in various professions, as they struggle to cope with the added pressures and uncertainties brought on by the pandemic. It is important for organizations to prioritize mental health support and resources to help prevent and address burnout in their employees during these challenging times. Therefore, recent perspectives have focused

on burnout with the origin attributed to the COVID-19 pandemic [13,14]. Numerous studies have also demonstrated that stress arising from the COVID-19 pandemic is a significant factor contributing to overall burnout in the population [15,16]. It is crucial for organizations to implement strategies such as flexible work arrangements, mental health days, and employee assistance programs to support their staff's well-being. By addressing burnout proactively, organizations can help maintain a healthy and productive workforce during these unprecedented times. Moreover, Yildirim and Solmaz emphasize the urgency of understanding factors related to stress and burnout during the COVID-19 pandemic by understanding the central role of personality strengths (e.g., resilience) as well as various other factors to explain the relationship between stress and burnout due to the coronavirus. Furthermore, COVID-19 transmission misinformation influences the connection between COVID-19 stress and adult life satisfaction. Individuals are more likely to access misinformation about Covid-19 transmission, resulting in improved life satisfaction [16,17].

Theoretical approaches highlight the role of coping mechanisms with stress, as it can lead to various impacts on the mental health of individuals. Research has shown that individuals who utilize effective coping strategies are better equipped to manage stress and maintain their mental well-being. Understanding the different coping mechanisms can help individuals develop healthier ways of dealing with stressors in their lives. According to Folkman, coping strategies seem to depend on coping resources such as psychological, mental, social, situational nature, and, importantly, the individual's ability to control the situation [18]. Furthermore, many studies suggest that coping strategies for stress appear to be experiences distilled from previous reactions and seem to become coping styles [19]. It is important for individuals to recognize their own coping mechanisms and to cultivate positive coping styles in order to effectively manage stress. By understanding how coping strategies develop and evolve, individuals can work towards building resilience and maintaining their mental well-being in the face of challenges. Therefore, coping mechanisms may be somewhat independent of the stressful situation. Coping styles are divided into two types: positive coping and negative coping [20]. Positive coping styles involve adaptive strategies such as problem-solving, seeking social support, and engaging in self-care activities.

On the other hand, negative coping styles may include avoidance, denial, and substance abuse as ways to deal with stress. In the context of COVID-19, several studies indicate that positive coping mechanisms, such as seeking social support, problem-focused coping, and finding meaning, are negatively correlated with burnout and help overcome challenges better [21,22]. On the other hand, coping strategies that are maladaptive to stress, such as avoidance, blaming, and daydreaming, tend to be associated with an increase in symptoms of depression, anxiety, and burnout [22,23]. Therefore, we can assume that coping styles may act as a moderating variable in the relationship between stress and burnout due to COVID-19. It is crucial for individuals to recognize their coping styles and work towards developing healthier mechanisms to navigate through challenging situations effectively. By addressing maladaptive coping strategies and incorporating more positive approaches, individuals can better manage stress and reduce the risk of burnout during times of crisis like the COVID-19 pandemic. This means that if positive coping styles are applied, the impact of stress on burnout will be low, and conversely, when negative coping styles are used, the influence of stress on burnout due to COVID-19 will increase.

Hypotheses

Hypothesis 1: Stress has a positive effect on COVID-19-related burnout.

Hypothesis 2: Negative coping strategies play a role in moderating the relationship between stress and burnout related to COVID 19.

Hypothesis 3: Positive coping strategies play a role in moderating the relationship between stress and burnout related to COVID 19.

Materials and Methods

Participants

In this cross-sectional survey conducted during the fourth wave of the COVID-19 pandemic in Vietnam (June to September 2021), data were collected through an online questionnaire distributed to participants across various provinces. The study garnered 3664 valid responses from individual's aged 18 to 75, comprising 17.6% males and 82.4% females. Ethical considerations were paramount, as all participants were explicitly asked for voluntary and informed consent, and

they retained the right to withdraw from the study at any point without providing a reason. To ensure participant confidentiality, their information was strictly used for research purposes. Following their participation, a token of appreciation was extended to the respondents in the form of an E-book guide designed to aid them in dealing with stress during the ongoing pandemic. This comprehensive approach aimed not only to capture a diverse and representative sample but also to prioritize ethical considerations, transparency, and participant well-being throughout the survey process.

Measurement

Perceived stress related to COVID-19 was measured using the Pandemic-Related Perceived Stress Scale of COVID-19 [24]. This scale, consisting of 10 items, assessed the stress levels caused by the COVID-19 pandemic. Items included such statements as "I feel something terrible related to the disease could happen at any time," "I am very anxious when things related to the disease are beyond my control," and "I can cope with my difficulties even when infected." Participants provided feedback on a 5-point Likert scale (0 corresponding to 'never,' 5 to 'always'). Positively framed items were reverse-coded for score consistency. A higher total score on the scale indicated higher stress levels. The study demonstrated good reliability with a Cronbach's Alpha coefficient of 0.784.

A coping strategy checklist for stress was developed based on a theoretical overview of coping strategies, including 6 selected strategies categorized as positive (seeking social support, problem-focused, meaning-focused) and negative (avoidance, blaming, wishful thinking). Results were coded as 1 for not using and 2 for using each coping strategy, and average scores for positive and negative coping were calculated separately. A lower score indicated a tendency not to use coping strategies, while a higher score indicated a tendency to use multiple coping strategies.

Burnout related to COVID-19 was measured using the COVID-19 Burnout Scale [16]. This scale, adapted from the Burnout Measure-Short Version, comprised 10 items such as "I feel tired when thinking about COVID-19," "I feel bored/downhearted when thinking about COVID-19," and "I feel helpless when thinking about COVID-19" [25]. Participants provided feedback on a 7-point Likert scale (1 corresponding to 'never,' 7 to 'always'). A higher average score

on the scale indicated higher COVID-19-related burnout. The study demonstrated excellent reliability with a Cronbach's Alpha coefficient of 0.94.

Analysis

The software SPSS version 22.0 was used to process the data in this study. Firstly, we conducted descriptive statistics analysis on the demographic characteristics of the participants in the research. To examine the moderating role of coping strategies in the relationship between stress and burnout related to COVID-19, we initially explored the correlation between the study variables. According to Baron and Kenny, the conditions for a variable to act as a moderating variable are (1) this variable should have no relationship between the independent and dependent variables, and (2) the product of the independent variable and the tested moderating variable should impact the dependent variable [26]. However, the current approach only requires the satisfaction of condition 2 for a variable to be considered a moderating variable, and both methods are widely accepted. Therefore, we used the three-step hierarchical regression model to test. In Model 1, the independent variable is COVID-19-related stress, and the dependent variable is COVID-19-related burnout. In Model 2, we examined the moderating role of negative coping strategies with stress. In Model 3, we examined the moderating role of positive coping strategies with stress. However, in Models 2 and 3, since there is a product term between stress related to COVID-19 and coping strategies, multicollinearity issues may arise. Following the recommendation of McClelland et al., to avoid this issue when analyzing moderation models, we applied the centering method (center mean) to the independent variables in the model before conducting the regression analysis [2].

Ethical statement

The study was approved by the Ethical Council of Vietnam Psychological Association.

Results

Table 1 shows some demographic characteristics of the 3664 study participants. The data indicates that 17.6% of the participants are male, and 82.4% are female. Regarding age, the number of participants aged 18-25 is 1528 (41.70%), 26-35 is 868 (23.69%), 36-45 is 855 (23.34%), 46-55 is 370 (10.10%), 56-65 is 37 (1.01%), and 65

and above is 6 (0.16%). In terms of educational attainment, the number of participants with primary education is 43 (1.20%), lower secondary education is 114 (3.10%), upper secondary education is 198 (5.40%), vocational training is 366 (10.00%), college and university education is 2589 (70.70%), and postgraduate education is 354 (9.70%). Regarding marital status, the number of single participants is 1662 (45.40%), married is 1890 (51.60%), divorced/separated is 96 (2.60%), and widowed is 16 (0.40%). As for income, the number of participants with comfortable spending is 58 (1.60%), relatively comfortable spending is 276 (7.50%), normal living expenses is 2204 (60.20%), slightly insufficient spending compared to normal living is 881 (24.00%), and insufficient spending for minimum living is 245 (6.70%) (Table 1).

Table 2 presents descriptive and correlation statistics between stress, coping, and burnout related to COVID-19. The data shows that the stress and burnout related to COVID-19 have a statistically significant correlation ($r=0.40$, $p<0.001$). The relationship between stress and positive coping strategies with stress related to COVID-19 is not statistically significant ($r=0.03$, $p>0.05$). Negative coping is positively correlated with stress and burnout ($r=0.19$, $p<0.001$ and $r=0.31$, $p<0.001$) (Table 2).

Table 3 illustrates various models designed to examine the moderating role of coping strategies in the relationship between stress and burnout related to the COVID-19 pandemic. The data in Model 1 indicates that stress has a statistically significant positive impact on COVID-19-related burnout ($\beta=0.41$, $t=26.79$, $p=0.000$, $VIF=1.00$), and this model explains 16.4% of the variance in fatigue. In Model 2, stress continues to positively impact burnout ($\beta=0.37$, $t=24.49$, $p=0.000$, $VIF=1.06$). Negative coping strategies also have a statistically significant positive effect on burnout ($\beta=0.24$, $t=15.94$, $p=0.000$, $VIF=1.04$). The interaction effect between stress and negative coping on burnout is positive and statistically significant ($\beta=0.06$, $t=4.07$, $p=0.000$, $VIF=1.02$) (Table 3)

Therefore, negative coping is identified as a significant moderating variable in the relationship between stress and COVID-19-related fatigue. In Model 3, stress continues to have a positive impact on burnout ($\beta=0.37$, $t=24.38$, $p=0.000$, $VIF=1.06$), and negative coping still plays a moderating role in this relationship ($\beta=0.06$, $t=4.24$, $p=0.000$, $VIF=1.03$). Additionally, the

influence of the interaction between positive coping and stress on COVID-19-related burnout is negative and statistically significant (beta=-0.04, t=-2.87, p=0.004, VIF=1.02). Therefore, it

can be concluded that positive coping strategies also moderate the relationship between stress and COVID-19-related burnout as shown in Figure 1.

Table 1. Some characteristics of the research participants.

Characteristics	Classification	Number	Proportion
Gender	Nam	644	17.6
	Nu	3020	82.40
Age	18-25	1528	41.70
	26-35	868	23.69
	36-45	855	23.34
	46-55	370	10.10
	56-65	37	1.01
	66-75	6	0.16
Education	Primary education	43	1.20
	Middle school	114	3.10
	High school	198	5.40
	Intermediate level	366	10.00
	Colleges and universities	2589	70.70
	Post universities	354	9.70
Marital status	Single	1662	45.40
	Married	1890	51.60
	Divorce/Separation	96	2.60
	Widow	16	0.40
Income	Spend freely according to your needs	58	1.60
	Spending at a relatively decent level of life security	276	7.50
	Spending at a level that ensures a normal life	2204	60.20
	Spending is a little short of normal living standards	881	24.00
	Not enough to spend on the minimum standard of living	245	6.70
Total		3664	100.00

Note: N=3664.

Table 2. Descriptive statistics and correlations between research variables.

Variables	Mean	Std. Deviation	1	2	3	4
Stress	19.64	5.60	-	-	-	-
Burnout	2.40	1.10	0.41*	-	-	-
Negative coping	1.33	0.31	0.19*	0.31*	-	-
Positive coping	1.65	0.29	0.03	0.03	0.19*	-

Note: N=3664; *Correlation is statistically significant at 0.01.

Table 3. Examining the moderating role of coping strategies.

Model	Variable	Beta	t	Sig.	VIF	
1	(Constant)	-	144.55	0	-	$\Delta R^2=0.164^*$
	Stress	0.41	26.79	0	1	

2	(Constant)	-	146.07	0	-	$\Delta R^2=0.060^*$ $R^2=0.223^*$
	Stress	0.37	24.49	0	1.06	
	Negative coping	0.24	15.94	0	1.04	
	Negative coping x Stress	0.06	4.07	0	1.02	
3	(Constant)		146.31	0		$\Delta R^2=0.003^{**}$ $R^2=0.226^*$
	Stress	0.37	24.38	0	1.06	
	Negative coping	0.24	16.01	0	1.08	
	Negative coping x Stress	0.06	4.24	0	1.03	
	Positive coping	-0.03	-2.13	0.033	1.04	
	Positive coping x Stress	-0.04	-2.87	0.004	1.02	

Note: N=3664; Dependent variable=burnout; *Statistically significant at 0.001; **Statistically significant at 0.01.

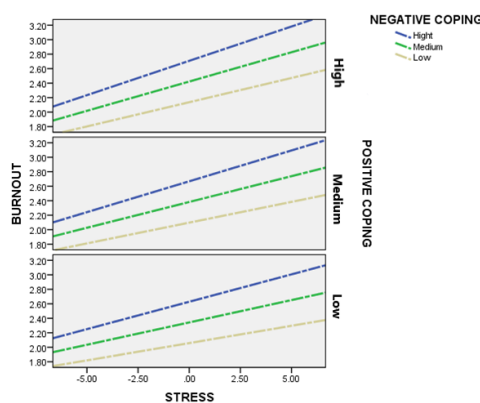


Figure 1. The moderating role of positive and negative coping strategies in the relationship between stress and burnout due to the COVID-19 pandemic. Note: (—) High; (—) Medium; (—) Low.

Discussion

The COVID-19 pandemic has had a significant impact on the burnout of the overall population. Numerous studies have also indicated that stress can increase the risk of pandemic-related burnout [16]. Many researchers have sought to explore the mechanisms and factors influencing this relationship. Factors such as resilience, social support, and a sense of belonging have been identified as crucial elements [27,28]. However, the moderating role of coping strategies in stress has been less explored. Therefore, this study aims to examine the moderating role of positive and negative coping strategies in the relationship between stress and pandemic-related exhaustion.

Firstly, our research data revealed that stress positively influences pandemic-related exhaustion. This confirms the accuracy of hypothesis 1, suggesting that individuals experiencing more

stress due to COVID-19 are more likely to experience burnout. This finding highlights the importance of addressing stress management in interventions aimed at reducing pandemic-related exhaustion. Future studies could explore specific coping mechanisms that may mitigate the impact of stress on burnout during times of crisis. This result aligns with previous studies examining this relationship in various groups, including healthcare professionals and community samples [15,16]. Understanding the role of stress in burnout during a crisis like COVID-19 can inform targeted interventions to support individuals in managing their well-being. By identifying effective coping strategies, researchers and practitioners can better equip individuals to navigate high-stress situations and prevent burnout.

Another significant finding of this study is that the relationship between stress and pandemic-related burnout is moderated by positive coping

strategies. The observed coefficient is positive, indicating that individuals who tend to use more positive coping mechanisms will increase the impact of stress factors on pandemic-related burnout. These findings suggest that interventions aimed at promoting positive coping strategies could potentially help mitigate the negative effects of stress on burnout during a pandemic. It is important for individuals to be aware of their coping mechanisms and work towards incorporating more positive strategies into their daily routines. Conversely, individuals using fewer negative coping strategies may mitigate the impact of this relationship. This result supports hypothesis 2 and is consistent with prior research suggesting that maladaptive coping strategies against stress are often associated with increased burnout [22,23]. Overall, understanding the relationship between coping strategies and burnout can provide valuable insights for individuals seeking to improve their mental health and well-being. By identifying and implementing effective coping mechanisms, individuals may be better equipped to navigate challenging situations and prevent burnout from occurring. Additionally, hypothesis 3 is confirmed as the data shows that positive coping strategies also play a moderating role in this relationship. However, unlike negative coping strategies, we observed a negative moderation coefficient. This implies that individuals who frequently use positive coping mechanisms may reduce the impact of stress on burnout. This result is consistent with previous research indicating that adaptive positive coping strategies can lower the risk of exhaustion and improve problem-solving abilities [21,22]. The findings suggest that promoting positive coping strategies can be an effective way to prevent burnout and enhance overall well-being in individuals facing high levels of stress. Future research could further explore the specific types of positive coping mechanisms that are most beneficial in mitigating burnout. Therefore, focusing on positive coping strategies may help alleviate the impact of stress on pandemic-related burnout. Interventions aimed at enhancing positive coping skills could be implemented in various settings to support individuals in managing stress effectively. By incorporating these strategies into daily routines, individuals may experience improved mental health outcomes and a greater sense of resilience in the face of adversity.

Another notable result is that while positive coping strategies seem to operate independently

of stress, they can still participate in regulating the relationship between stress and burnout. This suggests that individuals who utilize positive coping strategies may be better equipped to manage the effects of stress and prevent burnout. By actively engaging in healthy coping mechanisms, individuals may be able to buffer the negative impact of stress on their well-being. In contrast, negative coping strategies show a positive correlation with stress. This seemingly contradictory result is explained by Folkman, who suggests that coping strategies depend on individual assessments of situations, resources, abilities, and habits [14]. Individuals who tend to use avoidance or maladaptive coping mechanisms may find themselves more susceptible to burnout due to the compounding effects of stress. Therefore, it is crucial for individuals to develop self-awareness and cultivate positive coping strategies in order to effectively manage stress and prevent burnout in the long term. Therefore, if an individual evaluates a situation positively, it may lead to negative emotions and subsequently to maladaptive coping strategies like avoidance and escape [29]. This is likely associated with negative outcomes, including burnout [22]. In contrast, according to Stress Appraisal Theory, stress allows individuals to expand their knowledge and experience while developing additional skills to face future challenges or stressors [30]. However, only positive coping mechanisms in response to new situations can have such an impact. Therefore, individuals may have specific coping styles and skills influenced by their previous experiences and learning [19]. In essence, the way individuals cope with stress can greatly impact their overall well-being and resilience. It is crucial for individuals to develop healthy coping mechanisms in order to effectively navigate through challenging situations and prevent burnout. Together with the other findings, these results provide a basis for constructing effective positive coping strategies and minimizing negative coping behaviors to avoid negative effects of the COVID-19 pandemic. Furthermore, these findings may serve as a foundation for implementing educational methods and experiences to foster positive coping styles in individuals facing life stressors. By focusing on promoting positive coping strategies, individuals can better manage stress and maintain their mental health during difficult times. Educators and mental health professionals can use these findings to tailor interventions that support individuals in developing effective coping mechanisms for long-term well-being.

The implications derived from this study carry significant ramifications for interventions and strategies to address the profound impact of the COVID-19 pandemic on burnout and overall well-being. Primarily, there is a pressing need for targeted stress management interventions that recognize and address the unique stressors associated with the pandemic. By tailoring support mechanisms to specific challenges, interventions can better equip individuals to navigate these stressors and prevent burnout. Moreover, the study emphasizes the pivotal role of coping strategies in shaping the stress-burnout relationship. Positive coping mechanisms, identified as problem-solving and adaptive strategies, should be actively promoted through educational programs and integrated into daily routines. Simultaneously, interventions should discourage maladaptive coping strategies to avoid exacerbating the negative effects of stress. The findings underscore the importance of individual awareness and self-reflection regarding coping styles, enabling individuals to make informed choices in managing stress. Encouraging the integration of positive coping strategies into daily routines emerges as a practical approach to fostering resilience and maintaining mental health. Educational institutions and workplaces can utilize these insights to tailor programs that specifically address the development of effective coping mechanisms, ensuring a holistic approach to well-being. Policymakers are urged to consider the implications when crafting public health strategies, emphasizing investments in mental health resources, the integration of stress management programs, and policies that champion positive coping strategies. Ultimately, the study provides a comprehensive framework for constructing effective coping strategies and minimizing negative behaviors, offering a roadmap to mitigate the adverse effects of the COVID-19 pandemic and enhance long-term individual well-being.

This study, while offering valuable insights, is subject to several limitations that warrant consideration. The cross-sectional design employed hinders the establishment of causal relationships, preventing definitive conclusions about the temporal sequence of stress, coping strategies, and burnout. A longitudinal approach would better capture the dynamic nature of these variables over time. The reliance on self-reported data introduces the possibility of common method bias and social desirability bias, potentially influencing the accuracy of reported

stress levels, coping mechanisms, and burnout experiences. Future research should incorporate diverse methodological approaches to enhance the validity of the findings. Additionally, the study's generalizability is constrained by the potential sample bias, as participants may not fully represent the broader population. To address this, researchers should strive to include more diverse and representative samples in future studies. The study's exclusive focus on the COVID-19 pandemic, while contextually relevant, may limit the generalizability of findings to other stress-inducing scenarios. Exploring the transferability of these insights across various contexts will contribute to a more comprehensive understanding of stress-coping dynamics. Despite these limitations, this study provides a foundational understanding of the interplay between stress, coping strategies, and burnout during the pandemic. Acknowledging and addressing these limitations in future research endeavors will contribute to refining our understanding of individual responses to stress and inform more effective interventions in diverse settings.

Conclusion

This study adds to the literature on pandemic-related burnout by examining its predictors. Stress can be a motivation and a hinderance to one's mental health and daily functioning, and this study leans more towards the negative impacts of stress, as it can contribute to exhaustion. Our findings found that stress had a direct relationship with pandemic-related exhaustion. More importantly, this relationship was moderated by coping style. Positive coping strategies help reduce the impacts of stress on burnout; while negative coping strategies were not only related to stress but also enhanced the impacts of stress on burnout. This study therefore highlighted the role of both stress and coping mechanisms in predicting burnout. This study showed that to prevent burnout, in particular pandemic-related burnout, it is important to educate the public about stress management and positive coping. If left unaddressed, stress can increase burnout, as well as promoting negative coping mechanisms, which in return further increases burnout. Therefore, public health programs can educate people about the impacts of stress and stress management strategies, especially positive coping strategies like seeking social support, reframing problems in positive meaning and directly dealing with the problems.

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Received: 12 March 2024, Manuscript No. AJOPY-24-129304; **Editor assigned:** 14 March 2024, PreQC No. AJOPY-24-129304 (PQ); **Reviewed:** 29 March 2024, QC No AJOPY-24-129304; **Revised:** 05 April 2024, Manuscript No. AJOPY-24-129304 (R); **Published:** 15 March 2024, DOI: 10.54615/2231-7805.47347.