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## **The Impact of the COVID-19 Pandemic on K-12 School Teachers' Stress, Coping and Burnout: Identification of Protective and Exacerbating Factors**

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**The Impact of the COVID-19 Pandemic on K-12 School Teachers' Stress, Coping and  
Burnout: Identification of Protective and Exacerbating Factors**

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### **Abstract**

The COVID-19 pandemic caused many changes and challenges for K-12 teachers and students alike. The changes in teaching modality, need for safety precautions, and challenges in maintaining contact with students contributed to heightened stress levels for teachers (Jones, 2020). Job stress has the potential to lead to burnout among teachers (de Vera Garcia & Gambarte, 2019). The present study sought to survey the stressors experienced by K-12 teachers in the U.S., the impact of teachers' job-related stress on their burnout, and factors, such as resiliency, coping styles, resources, and social support, that might buffer against the effects of stress on burnout. Results of a quantitative survey (n = 74) and qualitative interview (n = 4) revealed that most teachers reported a moderate level of stress and burnout while teaching during the pandemic. Stress was significantly correlated with burnout, and teachers' burnout-related exhaustion was higher than their disengagement. Resiliency, but not coping or social support, served to buffer against the negative effects of stress on burnout. Many participants found that they did have necessary resources for their students, but not enough support as educators. Overall findings suggest teachers were feeling stress and burnout despite any coping skills, social support or resilience.

## **The Impact of the COVID-19 Pandemic on K-12 School Teachers' Stress, Coping and Burnout: Identification of Protective and Exacerbating Factors**

When the COVID-19 pandemic began, much of the United States' workforce underwent an unprecedented and increased amount of stress. One profession which was significantly impacted by the pandemic was educators. Grade school educators already faced a number of stressors in their jobs, including their high workload, the varying abilities levels in classrooms, limited resources, and low pay. When the pandemic hit, educators then had to completely change their approach to education, often teaching remotely or in a hybrid format. Furthermore, a majority of school teachers had not taught completely online before the pandemic and did not receive any training on how to do it during the emergency transition (Marshall et al., 2020). The transition itself was a stressor because it was an abrupt change and there was no contingency plan for an epidemic in most districts. Since there was no plan in place, the pandemic became the biggest challenge of educator's careers (Middleton, 2020). With the major change came plenty of stressors on teachers. There are stressors that directly impacted the teacher's through their personal responsibilities and there are also stressors that they had no control over such as those affecting the students.

The present paper will discuss previous research on stressors based on job responsibilities and students, teachers coping and resilience. There is still much to learn regarding what stressors remain after the initial transition to remote learning. One of the biggest gaps is what stressors are still in the classroom during the new school year as well as what resources are helpful or needed for managing that stress. There are also gaps in previous research regarding the extent to which protective factors such as coping, social support, and resilience might buffer the effects of stress on burnout experienced by K-12 teachers during the pandemic.

*Stressors Based on Job Responsibilities*

One of the stressors placed on teachers during the COVID-19 pandemic was an increased workload. With the sudden transition to online learning, many teachers had to rework their curriculum, possibly learning a new online platform and adapting any lessons to be virtual. Before the pandemic, online and distance learning had been a growing area of interest. Even without the additional stressor of the pandemic, educators found the transition to online stressful. Marshall et al. (2020) found that common struggles with online learning such as managing increased workloads, measuring student outcomes, and conducting synchronous classes before the pandemic, were exacerbated by COVID-19 pandemic stressors and the quick transition. Along with recreating the classroom setting, some teachers also had to do contact tracing in their classroom (Jelinska & Paradowski, 2021). These additional administrative activities only created more stress for educators. Another common stressor faced by educators is adapting hands-on learning experiences to the online environment. It was especially challenging for educators in the arts field. Music educators struggled with providing the same level of music education without in person music lessons and practices (Cheng & Lam, 2021). Along with struggling to provide the same quality education, educators have also reported an increase of work hours.

One of the biggest stressors reported for educators is the blurred boundary between work and home time. When teachers are in a physical work environment, it is easy to establish boundaries around work and home hours. The transition to online learning made that boundary disappear. Many participants in MacIntyre et al. 's (2020) study found the unclear boundary between work and home created high levels of stress. Since the boundary is unclear, many educators found they increased the hours that they are working, especially after hours. These increased work hours could be caused by worries of not understanding the technology they are using to teach or maintaining parent expectations of student performance

(Cheng & Lam, 2021). This increase in hours is not necessarily required by the schools, but a result of the challenge of being an effective teacher in these unusual circumstances. While there are many ways to define an effective teacher, many view connecting with students as a criterion.

Another common COVID-19 stressor faced by teachers is concerns about establishing relationships with the students. In years past, it was important for educators to get to know their students to help them with their learning. With the difficult adjustment to online learning, many teachers found it a challenge to connect with the students, which led to increased stress on both sides (Jones, 2020). Along with establishing connections with the students, there are more stressors regarding the students in the classroom setting.

#### *Stressors Based on Students*

A classroom has two parts to make it run: the students and the teacher. Teachers are also affected by students' stress. Many students struggled to learn in the online environment. One reason for this struggle was the lack of motivation to complete coursework. Klapproth et al. (2020) found that many teachers struggled with students having a lack of motivation to learn and complete assignments due to the online nature of the classroom. The lack of motivation in students could stem from being at home, but also the responsibility of online learning. With the transition, students suddenly were in control of their learning and lost the accountability of the physical classroom setting (Korkmaz & Toraman, 2020). Since students lost in person accountability, a significant percentage of students did not log onto virtual meetings or complete assignments (Middleton, 2020). The lack of student participation and motivation in the virtual environment led to increased stress on teachers. Teachers are unable to do their jobs if the students are not willing to adapt to learn in the new environment. While motivation is one stressor related to student participation, another is assessing how much learning was retained by the students.

A big part of the education system is knowing how to assess student learning in the classroom. This assessment can be done through testing or performance on assignments. Many teachers struggled with testing and feedback for their students due to time constraints (Korkmaz & Toraman, 2020). Along with understanding how much information was retained, it is also important for students to hit the learning outcomes set for the year. As a result of the COVID-19 pandemic and quick transition to online learning, teachers found that student learning was slower online compared to learning in the classroom (Cheng & Lam, 2021). Since students are learning slower online, they are not hitting all of the learning outcomes or finishing the standard curriculum for the year.

Another cause of not finishing the curriculum is due to longer reviews of already learned material. At the beginning of the emergency transition, many teachers chose to review rather than start new material. Hamilton et al. (2020) found that location of school played a part in how much review was done in remote learning. High poverty schools and rural schools were more likely to review material compared to low poverty schools and suburban schools. They also found in their sample only seven percent of the town and rural school teachers completed their 2019-2020 curriculum (Hamilton et al., 2020). Another factor with finishing the curriculum is the varying abilities in the classroom. A typical classroom has a range of learning abilities, but in a physical environment, there are multiple supports to address the needs. With the remote environment, not all needs would be addressed. Middleton (2020) found that many teachers had to delay teaching new material to address the varying levels of abilities in the classroom due to not having the same classroom support online. Similarly, Hamilton et al. (2020) found that about one quarter of the teachers in their study did not receive enough guidance to support their students with diverse needs in the classroom. These diverse needs include learning abilities, accommodations as well as overall access to student's education.

Student access to online learning is a major stressor for educators during the pandemic. There are many variables that affect a student's access to online learning such as if they have a device at home, if they have to share that device with other family members working online, and whether they have reliable Wi-Fi (Klapproth et al., 2020). If the students are unable to connect to the virtual assignments, they are at a disadvantage compared to their peers. Another aspect of online instruction is communicating to the students' parents about access to online instruction. There have been concerns about principals and teachers being unable to contact all their students' families during the pandemic (Hamilton et al., 2020). This barrier in communication hinders the student's education, especially with younger children who might need parental guidance on logging into classes or completing online assignments. These barriers to education increase the stress placed on the educators during the pandemic. If teachers do not address these stressors, overtime they might experience job burnout or exhaustion.

### *Burnout*

With the drastic changes to how school is conducted, many teachers might experience job burnout from the increased stress. Burnout is defined as physical and emotional exhaustion towards work and not having self-actualization (de Vera Garcia & Gambarte, 2019). Burnout can be caused by multiple factors of online learning. One factor is how the U.S. educational system is set up. Zircirli (2021) found that the education system is strongly influenced by society's expectations of teachers and the intensity of teaching which could lead to educator burnout. Another cause of burnout with educators during the pandemic is technology. Technology is a stressor in two ways: dealing with issues regarding the technology itself and how it blurs the boundary between work and home. Califf and Brooks (2020) found that an increased workload due to making lessons adapted to technology as well as increasing how much work is done at home contributes to job burnout. Burnout related to



technology is expected to increase, especially during the pandemic. Along with technology, how teachers approach their work can lead to burnout. Daumiller (2021) found that when teachers avoided certain aspects of their work, it had an indirect effect on burnout levels. Maladaptive coping skills such as avoidance are one contributor to burnout. It is important for educators to have established adaptive coping skills to combat the increased stress caused by the pandemic.

### *Coping*

Coping is a critical part of dealing with the pandemic. Since COVID-19 brought emergency and stressful transitions for educators, it is important for them to be able to cope with the changes. Jelinska and Paradowski (2021) found that K-12 educators experienced more difficulties with the transition to online learning which then led to coping skills not being as impactful. With the transition, the ages of students and modality played a role in coping. High school teachers using remote learning were more engaged with the students and coped better than other school teachers (Jelinska & Paradowski, 2021). While there are many reasons for the difference between stressors experienced by high school and elementary school teachers, some may be related to the students. With high school students, many of them are already used to online platforms to submit work and are accustomed to independent educational work, while educators for younger students might be experiencing more trouble with getting online schooling to work. Dlecker and Ifenthaler (2021) found that many teachers searched for online tools they felt comfortable with to then help students understand their learning activities. Coping would be key to grasp what works in an online setting. If they are struggling with complex factors of school, they would need increased adaptive coping skills to combat the stress. Klapproth et al. (2020) found that grade school teachers used more functional coping strategies to deal with external factors such as school organization or parents. Having functional coping skills to process what is happening in the

school environment will lessen the impact of stress, but also build resilience to any future stress.

### *Resilience*

Resilience refers to the ability to be strong when faced by significant adversity (de Vera Garcia & Gambarte, 2019). Being resilient during times of stress is key for minimizing negative effects such as work-related burnout during the pandemic. For example, de Vera Garcia and Gambarte (2019) found that resiliency protected public school elementary teachers from burnout as well as prepared them to face challenges in their job. Previous research has indicated that there were some resources and training that can build up stress tolerance and resiliency with educators. One example is providing in-service training activities for educators. These activities would include building up informational literacy skills and learning how to access emotional support for students (Yildiz-Durak et al., 2020; Hamilton et al., 2020). Another source of resiliency is finding challenges in the current situation, and making efforts to improve them for the future. Delcker and Infenthaler (2021) found that not all students had access to online materials. Korkmaz and Toraman (2020) suggested revising curriculum to account for different learning abilities highlighted through online learning. Both of these suggestions could increase resiliency by not having them as stressors, or knowing how to handle the challenge when they arise again.

### *Research Questions*

The present study hopes to fill in the gaps with previous research in the effects of the pandemic on teachers. Most previous literature covers stressors experienced March through May 2020. The present study will find what stressors are still prevalent a year after the start of the pandemic and how these issues changed over a year. Another gap is regarding burnout in teachers. Previous research does not discuss the extent of job burnout experienced by teachers during the pandemic as well as what kinds of burnout they feel, such as exhaustion

or disengagement. Following burnout, there is also a gap with what kinds of coping and resources were beneficial to teachers when working this school year. These findings may have implications for resources, coping strategies, and other protective factors that help prevent teacher burnout more generally.

The present study aims to address a number of specific research questions regarding the impact of the COVID-19 pandemic on teachers. First, the study will aim to assess levels of specific stressors, perceived stress, and burnout rates experienced by teachers during the pandemic. Next, the study will seek to determine what, if any, variables (e.g., social support, resiliency, and coping) moderate and/or mediate the impact of COVID-19 related stress on K-12 school teachers' burnout. Finally, the study will aim to assess what resources and/or coping strategies have proven (or would prove) useful in coping with the stressors facing K-12 educators teaching during the pandemic.

### **Method**

This study followed a within-subjects survey research design. An electronic survey was distributed online, consisting of seven psychometric instruments and a series of demographic questions created by the researchers. Survey items included open-ended and rating scale questions. The survey was followed up by an optional phone interview, which consisted of four open-ended questions with room for possible follow-up questions. Since the study was distributed online, snowball sampling was used to recruit participants; social media and email users shared the survey link with their friends who met the eligibility criteria. In order to incentivize participants, the researchers offered a raffle chance for a \$50 gift card to those who fully completed the survey; 1 in every 30 participants had a chance to win. Similarly, the researchers offered a \$15 gift card to anyone who completed a follow-up phone interview.

## Participants

A total of 74 adult participants (35 female, 36 male, 1 female/non-binary) were recruited for this study. These participants were working K-12 teachers (99%) and student teachers (1%) who had been based in the United States during the COVID-19 pandemic. Ages of the participants ranged from 19 years to 55 years ( $M = 32.59$ ,  $SD = 8.60$ ). The majority of participants identified as White ( $n=36$ ); others identified as Black ( $n=12$ ), Indigenous ( $n=7$ ), Hawaiian or Pacific Islander ( $n=5$ ), Hispanic or Latinx ( $n=5$ ), Asian ( $n=3$ ), or a combination of two or more ( $n=5$ ). Participants' levels of experience varied, some having only taught for one year while others for 24 ( $M = 6.46$ ,  $SD = 5.31$ ). More than half taught in public schools ( $n=41$ ), while the rest taught in private ( $n=27$ ) or charter institutions ( $n=4$ ). During the COVID-19 pandemic, 35 participants taught in a hybrid in-person/online modality; another 29 taught completely online and only 10 operated completely in person. The majority worked in elementary education ( $n=41$ ), while others worked with middle school populations ( $n=18$ ) and high school students ( $n=15$ ). Classroom sizes ranged from 15 to 30+ students.

Most of the participants ( $n=60$ ) reported that their school districts received free or reduced-price meals from the state for their students ( $M = 3.26$ ,  $SD = 2.53$ ). The majority of these participants indicated their school district received enough support from the state to offer these meals to less than 25% of the students ( $n=14$ ) or between 25-34% of their students ( $n=14$ ). Another eight participants reported that 35-44% of their student populations received these reduced-priced lunches, while six others indicated 45-54% of their students received this support. Only four participants stated their district received reduced-price meals for 55-64% of their students, while seven more indicated that 65-74% of their students received reduced-price lunches. Only seven reported that more than 75% of their students received

this form of support from the state. Lastly, nine participants stated that their districts did not receive this aid from their states, and five were unsure if their districts were eligible.

### **Survey Instruments**

#### *Occupational Stress*

The Teacher's Occupational Stress Questionnaire (TOSQ; Hendres et al., 2014) was used to assess teachers' work-related stress as it has been demonstrated to have adequate reliability and validity in previous samples (Hendres et al., 2014). The TOSQ is a 20-item measure scored on a six point scale, which ranges from 1—this activity does not stress me out at all to 6—this activity stresses me out very much. The questionnaire identifies three main factors that generate stress: professional workplace activities, working conditions, and discipline and management in the classroom. A Cronbach's alpha reliability test resulted in an highly acceptable reliability ( $\alpha = 0.92$ ) for the TOSQ.

#### *Perceived Stress*

The Perceived Stress Scale (PSS; Cohen et al., 1983) was used to assess teachers' overall mood and perception of their stress. The PSS was selected as it is a widely used scale with well-established reliability and validity in adult samples (Cohen et al., 1983). The scale consists of ten questions, which ask participants to rate how often they have experienced a certain emotion or situation in a select period of time. The ratings range from 0—never to 4—very often. In this study, participants were asked to complete the PSS twice, once while they were recalling their most stressful moment teaching during the pandemic and again while they were considering their current stress levels. An analysis of reliability was conducted on the PSS, resulting in an acceptable reliability for both the Peak PSS scores ( $\alpha = 0.73$ ) and the Current PSS scores ( $\alpha = 0.75$ ).

### *Burnout*

The Oldenburg Burnout Inventory (OLBI) was developed by Demerouti et al. (2003). This assessment consists of both positively and negatively worded questions which target the two core elements of burnout: disengagement and exhaustion. The first refers to an individual's withdrawal from their work situation; the latter is defined as a lack of energy as a result of intense physical, mental, or emotional pressure. The OLBI consists of 16 items which are rated on a scale of 1—strongly agree to 4—strongly disagree. Similar to the PSS, participants completed the OLBI twice, once in the context of their most stressful moment, then again in the context of their current situation. A reliability assessment was also carried out for the OBI; both Peak OBI ( $\alpha = 0.72$ ) and Current OBI ( $\alpha = 0.73$ ) scores were fairly reliable.

### *Quality of Work Life*

The Albrecht Employee Quality of Work Life (EQWLS; Albrecht, 2013) is an assessment of the quality of working conditions, as perceived by the organization's employees. The data collected by the EQWLS is often used by management to investigate the quality of work life in their institution and to create viable action plans to improve work environments and employee satisfaction. The full measure consists of 46 items; only 19 of these questions were included in this study. Participants of this study were asked to indicate the extent to which each statement accurately represents their quality of work life. The range of responses began at "1—strongly disagree" and ended at "5—strongly agree."

### *Coping*

The Brief Cope (Carver, 1997) is an instrument created to assess coping responses. This measure was selected for this study as it has demonstrated its ability to reliably assess coping while minimizing the burden on participants. The Brief Cope contains 25 items pertaining to various coping habits and the emotions and circumstances which elicit the need

for coping in the first place. The range of responses is typically coded as “0—I haven’t been doing this at all” to “3—I have been doing this a lot.” In this study, however, the responses were coded as “1—I haven’t been doing this at all” to “4—I have been doing this a lot.”

### *Social Support*

The original Social Support Questionnaire (SSQ; Cohen et al., 1985) consists of 27 items; these questions were devised to evaluate participants’ perceptions of their social support networks and their satisfaction with the support. This study utilized an abbreviated SSQ, in which only six of the most pertinent items to the research questions were included. Participants were not asked to list the members of their social support circle, as in the original assessment. Instead, participants had to rate the relevance of the six items to their current circumstances. The range of responses was from “1—definitely false” to “4—definitely true.” A test of reliability was conducted for the SSQ, which indicated a lower level of reliability at  $\alpha = 0.59$ .

### *Resilience*

The Brief Resilience Scale (Smith et al., 2008) measures the resilience, or the ability to “bounce back,” of individuals. The term resilience is operationally defined as an individual’s ability to return to normal levels of functioning in spite of stress or trauma. The scale has six items, half of which are positively worded and half of which are negatively worded. Participants indicated the extent to which the statements within the measure applied to their personalities and circumstances. Responses ranged from “1—strongly disagree” to “5—strongly agree.” When a test of reliability was conducted for the SSQ, a lower level of reliability was reported at  $\alpha = 0.61$ .

### *Interview Questions*

The optional follow-up interview asked participants to describe their personal experiences teaching during the COVID-19 pandemic in greater detail. It consisted of four

open-ended questions created by the researchers to guide the conversation. Researchers also asked several follow-up questions to delve into greater detail as necessary. The four fundamental questions were:

- “Can you tell me a little bit about the ways in which you felt your work was affected by the pandemic?”
- “What were some strategies or resources that were helpful to you during the pandemic?”
- “What were some of the challenges or stressors you experienced while teaching during the pandemic?”
- “Is there anything you would like to share with us regarding how COVID-19 related stress has impacted your work or vice-versa?”

### **Procedures**

Eligible participants were recruited via email and online social media advertisements; these messages contained a Microsoft Forms link which led to the survey. Participants were fully informed of the nature of the study and signed consent forms prior to participation; no form of deception was used within this study. All study procedures were approved by the Elizabethtown College Institutional Review Board. Participants completed the survey, and once they submitted their responses, they could follow a second link which brought them to a new form. There, they could sign up for a gift-card raffle or to complete a follow-up phone interview, which took about 15-25 minutes to complete. During this interview, researchers asked questions which explored the participants' personal experiences teaching during the COVID-19 pandemic in greater detail. Interviews were recorded with participants' consent.

### **Data Analytic Plan**

Study analyses were conducted using IBM SPSS Statistics (Version 26) analytic software. It was used to run basic analyses and interaction analyses. For qualitative analyses,



bottom-up coding processes were used to identify common themes in responses.

## Results

### Quantitative Analyses

#### *General Stressors*

Participants reported experiencing many of the general COVID-related stressors included in the survey. Some of the general stressors most commonly experienced by the participants were difficulty accessing essential goods, lack of in-person interactions and adherence to COVID guidelines (see Table 1). Along with general COVID stressors, we found most of our participants experienced teaching-related COVID stressors to some degree. The most prevalent teaching-related stressors were challenges associated with student progress, parent involvement in student learning, and student participation (see Table 2). Another general stressor for teachers was learning to use the online teaching platform. 62.5% of respondents found using online platforms stressful despite the fact that 90.5% of respondents reported receiving training for the online platforms. Regarding additional support, participants identified that they received a supplemental budget for their classroom (77%) and district support for staff members (79.7%). Unexpectedly, respondents indicated that a majority of their students had access to reliable WiFi (97.3%), devices (97.3%) and physical copy books and worksheets (84.9%).

#### *Perceived Stress and Burnout Inventories*

Participants were asked to report on their peak and current levels of stress (Perceived Stress Scale) and burnout (Oldenburg Burnout Inventory Scale) experienced during the pandemic. Between peak ( $M= 19.27$ ,  $S.D.= 5.33$ ) and current perceived stress, ( $M= 19.01$ ,  $SD= 5.32$ ), there was no significant difference,  $t(73)= .596$ ,  $p=.553$ . The burnout scale contained two subscales: exhaustion and disengagement. Participants' scores on the burnout exhaustion scale ( $M= 19.92$ ,  $S.D. = 3.64$ ) were significantly higher than their scores on the

burnout disengagement subscale ( $M = 18.70$ ,  $S.D. = 2.79$ ), Similar to the peak and current perceived stress scale, there was no significant difference between peak ( $M = 38.79$ ,  $SD = 5.80$ ) and current ( $M = 38.62$ ,  $SD = 5.66$ ) burnout,  $t(73) = -3.285$ ,  $p = .002$ . With the Perceived Stress Scale and Oldenburg Burnout Inventory, there were significant correlations between Teacher Occupational Stress, Brief Cope, Brief Resilience, Social Support and general COVID stressors, however, the only measure that did not significantly correlate was Quality of Work Life (see Table 3). The Perceived Stress Scale and Oldenburg Burnout Inventory can be used to differentiate respondents experiencing high, medium, and low stress (Cohen et al., 1983; Demerouti et al., 2003). Results indicated that a majority of respondents were experiencing medium/moderate levels of burnout and stress. For the perceived stress scale, 12.2% were in the low stress group, 83.8% were in the medium stress group and 4.1% were in the high stress group. With the burnout scale, 13.5% were in the low burnout group, 78.4% were in the medium burnout group and 8.1% were in the high burnout group. Since the categories were not equally distributed, advanced analyses were not run on the different groups.

### **Social Support, Resiliency, and Coping.**

There was not a significant correlation between social support and perceived stress. Unexpectedly, there was a statistically significant positive correlation between social support and burnout ( $r = .34$ ,  $p < .001$ ). There was a significant negative correlation between both perceived stress and burnout inventories with resiliency. Resilience had a moderate negative correlation with perceived stress ( $r = -.51$ ,  $p < .001$ ). There was a negative moderate correlation between resilience and burnout ( $r = -.56$ ,  $p < .001$ ). Denial, behavioral disengagement, venting and acceptance were significantly positively correlated with perceived stress (see Table 4). Burnout was significantly positively correlated with behavioral disengagement, venting, denial and acceptance (see Table 5).

*Mediation and Moderation Analyses*

The relationship between stress and burnout was not significantly mediated by social support, or most types of coping. The use of instrumental coping partially mediated the relationship between occupational stress and peak burnout exhaustion (Sobel  $t=1.98$ ,  $S.E=.01$ ,  $p=.05$ , see Figure 1). The use of venting fully mediated the relationship between occupational stress and current burnout exhaustion (Sobel  $t=2.11$ ,  $S.E.=.01$ ,  $p=.03$ , see Figure 2). We also found resiliency partially mediated the relationship between current perceived stress and burnout exhaustion (Sobel  $t=2.36$ ,  $S.E.=.05$ ,  $p=.02$ , see Figure 3).

With regards to moderators in the study, we found that the only significant moderator of the relationship between stress and burnout exhaustion was resilience ( $r = .01$ ,  $p = .03$ ; see Figure 4). There were no other significant moderators between stress and burnout exhaustion (see Table 6).

**Qualitative Analysis**

All participants had the opportunity to describe additional stressors and resources via open-ended questions in the survey, and four teachers participated in the optional follow-up interviews. While analyzing write-in answers in the survey and interviews, there were a few distinct themes throughout. In the additional stressors section of the survey, participants identified answers within a few themes. Ten participants identified stressors that addressed their safety and their students' safety. Some examples are stress about contracting COVID in the classroom and being worried about students' safety at home. Another common theme is student performance and learning. Seven participants identified that graduation rates or student performance are decreasing due to the pandemic. Nine participants identified additional work responsibilities as a stressor. Some examples are making two versions of each lesson, juggling a hybrid classroom and enforcing COVID-guidelines. Some additional

themes identified are communication issues between educators, students and administrators, balancing work and home, financial issues as well as other unique stressors.

In the additional resources section of the survey, there were only a few common themes. Many participants included the online platforms that they used during the school year (see Table 7). Others also indicated some additional resources they wished educators had during the year. Some examples were better training regarding the use of their online platform and being able to access resources before they were expected to be used. Another theme was resources educators wish students had. A repeated suggestion was students having access to a printer or printer service through the school.

Following the survey, there was an interview portion of the study. Within the interviews, participants touched on a few common themes. The biggest theme was about the quality of teaching and curriculum. Many of the interviewees stated a knowledge gap between school years due to the initial online transition. Similarly, they indicated that they might have finished the curriculum for the year, but the knowledge retention was not the same as previous years. Another strong stressor was making sure students got through the curriculum and prepared for standardized tests such as the PSSA's and AP exams. Additionally, some participants lost typical year resources for the year. Some respondents identified losing aides in the classroom and not having textbooks for the students at home. Others mentioned that the staff requested resources from the schools and were denied them. A repeated request was an additional planning period during the week so they could complete additional responsibilities. Additional work responsibilities was another common theme in the interviews. One participant had an increased caseload of students as an IEP manager, while another had to make two lesson plans for each day. A few of the participants identified having to do contact tracing for their classroom and monitoring safety compliance. Following work responsibilities, not being able to provide support to all students was a theme. All the

participants noted that they could not tailor lessons to accommodate different learning abilities in the classroom. Some participants stated that not being able to individualize learning brought on a lot of behavioral problems with the students. The final theme from the interviews was the teacher exhaustion. All of the participants indicated some form of job exhaustion by the end of the year. The exhaustion stemmed from dealing with behavioral problems, the lack of student motivation to learn, and dealing with hybrid learning.

### **Discussion**

This study sought to fill the gaps in the literature regarding the effects of the COVID-19 pandemic on K-12 teachers. The majority of the previous research focused on stressors experienced during the first two months of the pandemic; this disparity prompted the researchers of this study to investigate stressors which remain prevalent more than a year into the pandemic and how stressors have evolved over time. Additionally, this study sought to address the extent of job burnout experienced by K-12 teachers, especially in the forms of exhaustion or disengagement. A final gap in the preexisting research involves coping behaviors and available resources which would benefit teachers this year. By covering all these gaps in knowledge in one paper, this study provides a novel approach to the understanding of the effects of the COVID-19 pandemic.

This study is based on four research questions. Firstly, it looks to explore which stressors impacted teachers the most and to what extent stress contributed to their burnout. Secondly, what variables, such as social support, resilience, or other caregiving responsibilities, moderate the impact of the COVID related stressors on the stress and burnout of K-12 teachers? Lastly, what resources and/or coping strategies proven or would have proven useful in coping with the stressors K-12 educators faced while teaching during the pandemic?

### **General Stressors**

The most commonly identified general stressors among the participants were difficulty accessing essential goods, the lack of in-person interactions, and adherence to new COVID restrictions. These findings are to be expected, as they are three of the most commonly identified challenges among the general population (Delcker and Infenthaler, 2021). The K-12 educators who participated in this study also identified COVID stressors unique to their line of work; the most prevalent of these teaching-related stressors were in student progress, parent involvement in their students' education, student participation in class, and learning to use an online teaching platform. These findings are in line with those of Marshall et al. (2020) and Cheng & Lam (2021), who previously studied the impacts of online learning, maintaining satisfactory levels of student performance, and parents' expectations of their children.

Another common stressor for teachers was learning to use the online teaching platform; the majority of participants indicated that they had received training to use these platforms but still found them to be stressful. This training aspect is important to note as previous research reported that few of their participants received training prior to using online teaching platforms (Marshall et al., 2021). Similarly, participants indicated that the majority of their students had reliable access to the internet, devices, books, and worksheets, whereas previous studies indicated that a lack of reliable WiFi and other resources for their students was a common theme (Klapproth et al., 2020). In addition, to supplement teachers' resources, the majority of school districts identified by participants offered an additional budget and direct support. These general and teaching-specific COVID-19 stressors were associated with increased stress and burnout, as expected in this sample. Unexpectedly, however, they were not associated with quality of work life. This could be because other

factors such as coworkers and supportive administration were stronger predictors of work life quality.

### *Perceived Stress and Burnout Inventories*

Prior to the collection of data, it was expected that there would be significant differences between peak and current perceived stress, as well as peak and current burnout. The researchers presumed educators would be experiencing less stress at the time of their participation in the study as their school year would either be in the process of wrapping up or had just finished. Instead, the data trends indicated the participants were still experiencing similar amounts of stress at the end of their year as they did during their most stressful moment. Perhaps for some participants, their current circumstances could have been their most stressful or burnt-out moment teaching during the pandemic, as they neared the end of their year without finishing their curriculum, building meaningful relationships with students, or feeling as if they had truly provided a quality education for their students (Hamilton et al., 2020; Jones, 2020). For other participants, their most stressful moment could have resulted in such a significant level of burnout and exhaustion that they did not have sufficient time or resources to recover prior to completing the survey. Instead of disengaging in order to rest and recuperate, these participants continued to operate as best as they could under constantly high levels of stress until they were exhausted (Cheng & Lam, 2021; Marshall et al., 2020); this could explain why the exhaustion subscale was significantly higher than the disengagement subscale in the results of the Oldenburg Burnout Inventory. Qualitative analyses found that interviewees identified burnout exhaustion, but did not have time to recuperate between events because it was one continuous stressor during the year. The overall distribution of participants' scores ranged across high, medium, and low stress and burnout categories; the majority of participants fell into the medium category, while relatively few fell into the low and high categories.

*Social Support, Stress, and Burnout*

While it was originally expected that social support would be negatively associated with stress and burnout, such that participants reporting more social support reported less stress and burnout, this did not prove to be the case. There was no significant correlation between social support and perceived stress, which researchers previously theorized would be strongly and negatively correlated. The researchers expected that greater social support people received from loved ones and peers would decrease their perceived stress levels, while low levels of social support would not effectively mitigate the participants' perceived stress. The absence of this seemingly common sense relationship in the present study may be indicative of a wide-spread occurrence of the "empty-vessel" phenomenon in the general population. This expression refers to the event in which an individual is incapable of meeting their own mental and emotional needs while attempting to meet the needs of others. Due to the pandemic and the subsequent global shutdowns, most of the world's population experienced greater than normal stress levels in the past year; it has become more difficult to serve the mental and emotional needs of friends and family when one is experiencing significantly higher stress levels while having fewer outlets for healthy release. As a consequence, there is a scarcity of effective social support.

Unexpectedly, social support and burnout were significantly, but positively, correlated. The researchers previously expected this correlation to also be negative; as social support increased, levels of burnout would decrease, and vice versa. Instead, the participants reported that their feelings of burnout heightened when their social support increased. However, this could be the result of participants seeking additional social support as their burnout levels continued to increase.



### *Resilience*

The moderately negative correlations between resilience and perceived stress, as well as between resilience and burnout, indicate that as resilience increases, stress and burnout decrease and vice versa (de Vera Garcia & Gambarte, 2019). These findings are to be expected, as people who demonstrate the capability for inner strength during times of adversity are better able to persevere and experience less perceived stress and burnout. While resilience is an innate personality trait, outside factors can help one to increase this endurance. Previous research indicated that providing resources and training to educators can improve resilience and subsequently reduce stress and burnout (Yildiz-Durak et al., 2020; Hamilton et al., 2020). Consequently, the results of this study indicate that resiliency plays a role in the moderation of stress and burnout.

### *Coping*

The Brief Cope scale used in this study consisted of 14 subscales which measured different types of coping behaviors. Only four subscales— denial, behavioral disengagement, venting, and acceptance— demonstrated significant correlations with perceived stress and burnout. These correlations were all positive, which means as the use of coping behaviors increased, stress and burnout also increased. It was expected that the use of coping behaviors would minimize stress and burnout levels; instead, it may be the case that higher stress and burnout elicited more efforts at coping among study participants (Klapproth et al. 2020). These efforts at coping were, however, insufficient to overcome the challenging circumstances teachers were navigating during the pandemic.

The small number of significant subscale interactions, and the specific subscales themselves, were surprising. Out of the four significant subscales, three are either inherently maladaptive coping behaviors or behaviors which could be used maladaptively. Acceptance of the situation is the only positive coping behavior to have significant correlations with

stress and burnout. These results may indicate that standard coping behaviors were not sufficient in mitigating stress and burnout for educators during the pandemic; further studies could be conducted to explore this issue in greater detail.

#### *Mediation and Moderation Analyses*

Prior to data collection and analysis, the researchers expected social support, coping, and resilience to significantly mediate the relationship between stress and burnout (de Vera Garcia & Gambarte, 2019). Instrumental coping partially mediated the relationship between occupational stress and peak burnout exhaustion, while venting fully mediated the relationship between occupational stress and current burnout exhaustion. Instrumental coping includes efforts at problem-solving or tackling a stressor head-on, while venting refers to expression of negative feelings to others. In these models, the independent variable (occupational stress) influences the mediating variable (instrumental coping and venting), which in turn influences the dependent variable (peak and current burnout exhaustion). These models suggest that, to some extent, stress is associated with increased use of coping (specifically, instrumental coping and venting), which in turn actually increase one's feelings of burnout. Perhaps this is because these particular types of coping were somewhat ineffective in these circumstances, or perhaps it is because efforts at coping were one more task teachers needed to accomplish, which only served to make them more exhausted (Klapproth et al., 2020). Resilience was also a partial mediator variable of the relationship between current perceived stress and burnout exhaustion (de Vera Garcia & Gambarte, 2019). This suggests that increased feelings of stress may have affected teachers' levels of burnout, which in turn had an impact on their burnout.

Moderation analyses were also conducted during the data analysis. Specifically, it was predicted that resilience, social support, coping, and available resources might moderate the effect of stress on burnout. For instance, perhaps the strength of the relationship between

stress and burnout would be lower among individuals reporting a high use of coping.

Generally, this proved not to be the case. The effect of stress on burnout was not moderated by coping, social support, or available resources. This fits in the theme that when the teachers had high perceived stress, the effects were generally not affected by any moderators to lessen the burnout. This is significant because it means the relationship between stress and burnout was not impacted by external factors. When a participant experienced more stress, there was nothing they could do to lessen the effects of the burnout. Resiliency proved to be the only significant moderator of the relationship between stress and burnout. As demonstrated in Figure 4, the protective effects of resiliency on burnout were stronger for individuals experiencing lower levels of stress. At higher levels of stress, the protective effects of resiliency were diminished.

#### *Strengths, Limitations, and Future Research*

This study contained a fairly diverse sample, as it was open to all K-12 educators over 18 years of age and based in the United States. The demographic questions and the seven psychometric measures were considerate of the different variables and resources available to each individual. Furthermore, if the participants found that they were not given sufficiently representative answers in the multiple choice questions or likert rating scales to accurately describe their demographic information or personal circumstances, they had the opportunity to write-in the missing answers later in the study. For example, the survey presented participants with an extensive variety of stressors to consider, yet also provided a write-in question which allowed survey-takers to identify other stressors and rate the impact each one had on their work. In addition, previous studies tended to investigate stress, burnout, and coping habits individually; since this study explored all three subjects at once, the researchers were also able to study the relationships between them.

Along with these strengths, however, the study bore some limitations. Firstly, all of the data was collected simultaneously, rather than longitudinally; as such, causation in the models could not really be assessed. Similarly, the veracity of the respondents' reports about years spent teaching, the resources they utilized to cope, etc. could not be assessed, as the data was collected anonymously online. However, efforts were taken to minimize the likelihood of false reporting; for example, researchers noted the timestamps associated with each response and eliminated any survey results which were completed in less time than the survey could feasibly be completed.

In the future, further studies could be conducted in a longitudinal design to study a range of topics, such as gaining a better understanding of any causal interactions between stress, coping, and burnout. Furthermore, these causal relationships could potentially be useful in identifying coping behaviors and resources, understanding how they impact stress levels, and which ones can reliably and significantly reduce stress and burnout over time. A longitudinal design could also examine how stress levels change over the course of a school year for teachers, especially in measuring the resilience it takes to finish a school year while being under great levels of stress and burnout. A longitudinal design also allows for researchers to take a closer look at how school environment or the motivation of students to complete their work impacts a teacher's stress levels. Additionally, it is an acceptable design to use if one wanted to research what changes were made during the initial emergency transition to online education at the beginning of the pandemic, which changes will remain post-pandemic, and how teachers' levels of stress and burnout will be impacted as a result.

Despite these limitations, this study still contributed to the field. The present study found teachers experienced moderate stress and burnout during the 2020-2021 school year. There was no moderation between resiliency, social support and coping between stress and

burnout. Despite these unique findings, they match up with previous research regarding stress and burnout in K-12 educators.

**Tables and Figures****Table 1***Percentage of General COVID-19 Stressors Experienced by U.S. Teachers (N=74)*

<b>Stressor</b>	<b>Not Experienced (%)</b>	<b>Experienced (%)</b>
Having COVID Symptoms	46.6	53.4
Diagnosed with COVID	56.2	43.8
A Loved One Diagnosed with COVID	37	63
A Loved One Died from COVID	56.9	43.1
Loss of Income	20.5	79.5
Difficulty Accessing Essential Goods	9.6	90.4
Lack of In-Person Interaction	6.8	93.2
Received Unpaid Time Off to Quarantine	42.5	57.5
Received Paid Time Off to Quarantine	69.9	30.1
Adherence to COVID Guidelines	5.5	94.5

**Table 2***Prevalence and Impact of COVID-19 Stressors on Teaching (N=74)*

<b>Stressors</b>	<b>Did the participants experience the listed stressor?</b>		<b>Did the listed stressor impact their ability to teach?</b>	
	<b>Not Experienced (%)</b>	<b>Experienced (%)</b>	<b>Not Impacted (%)</b>	<b>Impacted (%)</b>
Students Having Reliable Access to Class Resources	19.2	80.8	28.8	71.2
Students Participating in Class	20.5	79.5	23.3	76.7
Hybrid Learning	27.4	72.6	28.8	71.2
Teachers Learning How to Use an Online Learning Platform	31.9	68.1	30.1	69.9
Communication with Parents	28.8	71.2	35.6	64.4
Parents Involvement in Students Learning	20.5	79.5	23.3	76.7
Additional Work Responsibilities	19.2	80.8	30.1	69.9
Student Adherence to COVID Guidelines	26	74	34.2	65.8
Communication Between Other Teachers	24.7	75.3	31.5	68.5
Getting Through Entire Curriculum	23.6	76.4	27.4	72.6
Student Progress	15.1	84.9	19.2	80.8
Perceived Risk of Contracting COVID While Working	34.2	65.8	32.9	67.1

**Table 3***Correlation between Stress measures (N=74)*

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) GCS	--								
(2) TS	.44**	--							
(3) TSI	.43**	.88**	--						
(4)TOS	.42**	.45**	.59**	--					
(5) PPS	.25*	.37**	.44**	.45**	--				
(6) POBI	.24*	.33**	.40**	.36**	.57**	--			
(7) NPS	.30*	.30*	.39**	.51**	.76**	.40**	--		
(8)NOBI	.17	.36**	.38**	.36**	.62**	.61**	.56**	--	
(9) QWL	.00	.00	-.08	-.03	-.16	-.17	-.07*	-.26*	--

*Note.* GCS= General COVID Stressors, TS= Teaching Stressors, TSI= Teaching Stressors Impacted, TOS= Teacher Occupational Stress, PPS=Peak Perceived Stress, POBI= Peak Oldenburg Burnout Inventory, NPS= Now Perceived Stress, NOBI= Now Oldenburg Burnout Inventory, QWL= Quality of Work Life\*p <.05, \*\*p<.01

**Table 4***Coping and Perceived Stress Correlation (N=74)*

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) PS	--														
(2) SD	.12	--													
(3) AC	.10	0.23	--												
(4) Denial	.31**	0.08	-0.03	--											
(5) SU	.34**	0.16	-0.09	.50**	--										
(6) ES	.28*	0.19	.35**	0.04	-0.04	--									
(7) IC	.28*	-0.01	.24*	0.20	0.01	.63**	--								
(8) BD	.34**	0.19	0.07	.55**	.31**	0.16	0.18	--							
(9) Venting	.53**	0.21	0.10	.24*	0.22	.24*	0.19	.32**	--						
(10) PR	0.10	0.21	.52**	0.09	-0.14	.49**	.37**	.02	0.01	--					
(11) Planning	0.11	.38**	.39**	0.01	-0.01	0.19	0.22	0.03	0.03	.40**	--				
(12) Humor	0.09	0.04	0.04	0.23	0.21	0.21	0.15	0.22	0.16	0.01	0.13	--			
(13) Acc	.32**	.35**	.27*	0.01	.25*	0.16	0.02	0.12	.32**	0.07	.36**	0.17	--		
(14) Religion	.28*	-0.09	0.12	0.22	.32**	.36**	.47**	0.07	0.20	0.09	-0.07	.28*	0.09	--	
(15) SB	.28*	.23*	0.20	0.09	.29*	0.01	-0.03	0.19	0.20	0.15	.24*	-0.02	.43**	-0.07	--

*Note.* PS= Perceived Stress, SD= Self Distraction, AC= Active Coping, SU= Substance Use, ES= Emotional Support, IC= Instrumental Coping, BD= Behavioral Disengagement, PR= Positive Reframing, Acc= Acceptance, SB= Self Blame\*\*p<.01 \*p<.05

**Table 5**  
*Coping and Burnout Correlations*

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1) SD	--														
2) AC	0.23	--													
3) Denial	0.08	-0.03	--												
4) SU	0.16	-0.09	.50**	--											
5) ES	0.19	.35**	0.04	-0.04	--										
6) IC	-0.01	.24*	0.20	0.01	.63**	--									
7) BD	0.19	0.07	.55**	.31**	0.16	0.18	--								
8) Venting	0.21	0.10	.24*	0.22	.24*	0.19	.32**	--							
9) PR	0.21	.52**	0.09	-0.14	.49**	.37**	0.02	0.01	--						
10) Planning	.38**	.39**	0.01	-0.01	0.19	0.22	0.03	0.03	.40**	--					
11) Humor	0.04	0.04	0.23	0.20	0.21	0.15	0.22	0.16	0.00	0.13	--				
12) Acc	.35**	.27*	0.01	.25*	0.16	0.02	0.12	.32**	0.07	.36**	0.17	--			
13) Religion	-0.09	0.12	0.22	.32**	.36**	.47**	0.07	0.20	0.09	-0.07	.28*	0.09	--		
14) SB	.23*	0.20	0.09	.29*	0.01	-0.03	0.19	0.20	0.15	.24*	-0.02	.43**	-0.06	--	
15) Burnout	0.19	-0.16	.25*	.23*	0.16	0.20	.39**	.41**	-0.19	-0.08	0.08	.27*	0.15	0.23	--

Note. SD= Self Distraction, AC= Active Coping, SU= Substance Use, ES= Emotional Support, IC= Instrumental Coping, BD= Behavioral Disengagement, PR= Positive Reframing, Acc= Acceptance, SB= Self Blame\*\*p<.01\*p<.05

**Table 6**

*Moderation Interaction Values with Resiliency as Third Variable and Burnout Exhaustion as Outcome*

Variable	Interaction Coefficient	S.E.	t	p
QWL	-.01	.01	-.75	.46
TOS	.00	.01	-.04	.97
Modalities	.10	.17	.59	.56
Types of school	.15	.16	.94	.35
Classroom Size	-.09	.09	-1.02	.31
Age	-.01	.01	-1.10	.28
Student WiFi	-.08	.15	-.52	.60
District Support	-.10	.10	-1.01	.32
Years Teaching	-.01	.02	-.24	.82
Additional Budget	-.01	.09	-.09	.93

Note. QWL= Quality of Work Life, TOS= Teaching Occupational Stress



**Table 7**

*Online Resources Identified by Multiple Respondents Percentage (N=74)*

Resource	Number of Respondents	Resource	Number of Respondents
Google Products	16.2	School Specific	5.4
Zoom	12.2	Schoology	4.1
Khan Academy	6.8	Canvas	4.1
Coursera	6.8	Peardeck	4.1
Nearpod	5.4	Edpuzzle	2.7
Microsoft Products	5.4	K-12	2.7

Figure 1. The Relationship Between Occupational Stress and Burnout Exhaustion as Mediated by Instrumental Coping

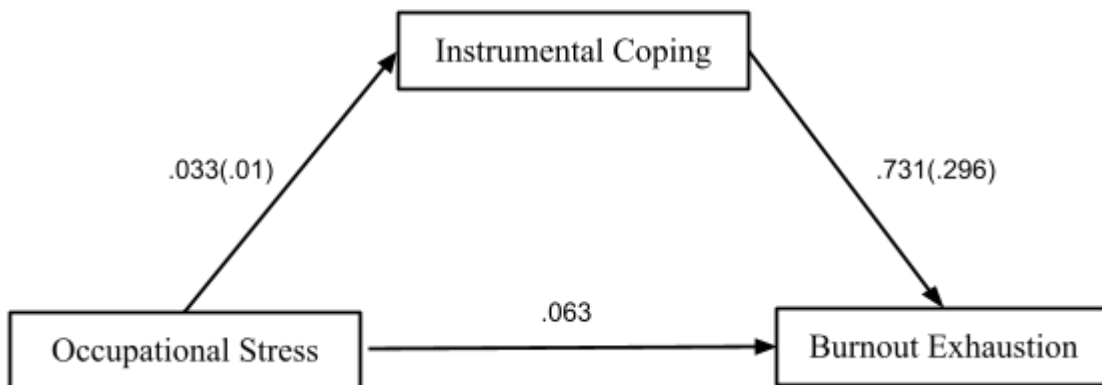


Figure 2. The Relationship Between Occupational Stress and Burnout Exhaustion as Mediated by Venting

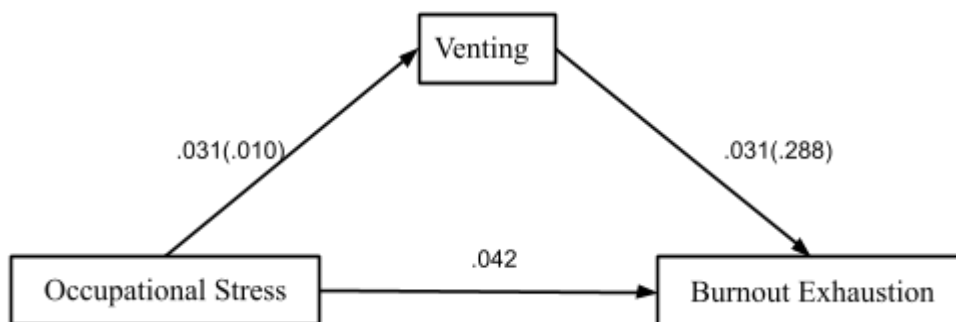


Figure 3. The Relationship Between Perceived Stress and Burnout Exhaustion as Mediated by Resilience

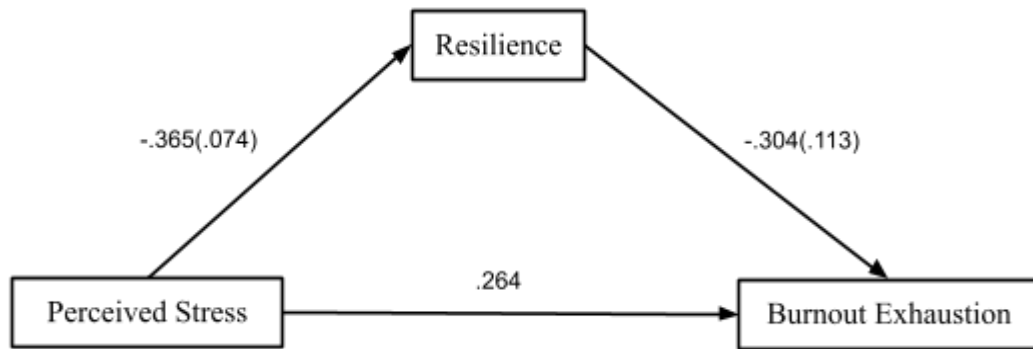
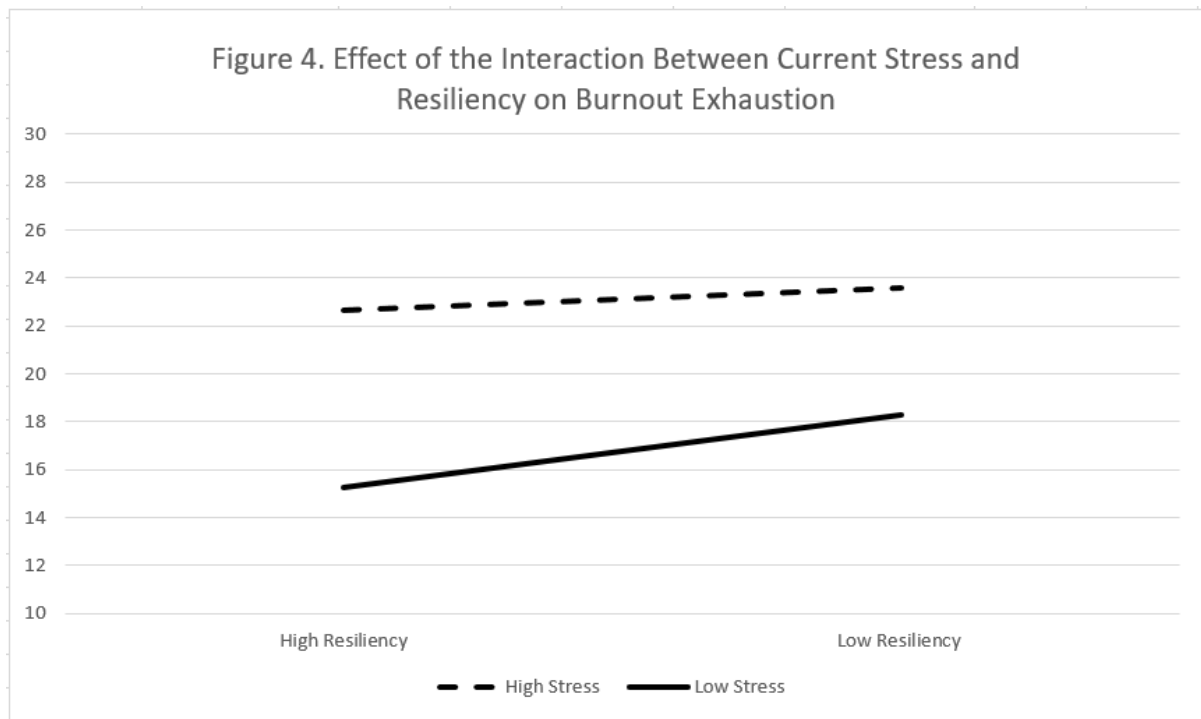


Figure 4. Effect of the Interaction Between Current Stress and Resiliency on Burnout Exhaustion



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