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Role conflict, job crafting, stress and resilience among nurses during COVID-19

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Abstract

Crises have the potential to heighten stress levels among frontline employees. In general, to cope with crisis-related stress, employees often improvise or job craft to meet the demands of the crisis. In addition to this, they need resources and directions to support their innovation by lowering role conflict. During the COVID-19 pandemic, nurses too were compelled to improvise as they struggled with multiple challenges related to the uncertainty associated with the virus and the assignment of atypical job functions. These concerns affected nurses' wellbeing and impacted their jobs. This two-phase sequential study began with interviews ($n = 14$), followed by a survey ($n = 152$) exploring nurses' perspectives regarding this noncausality crisis and the impact of organizational variables on their stress levels. While improvisation and job crafting were found to be important for adaptive resilience, the process involved in achieving resilience ended up increasing stress for nurses. Additionally, nurses faced role conflict, which contributed to greater levels of stress. To support nurses and enhance resilience, organizations should provide resources, role direction and training for effective job crafting and orientation.

KEYWORDS

crisis, improvisation, job crafting, noncausality crisis, nursing stress, pandemic, role conflict

1 | INTRODUCTION

COVID-19 presented various challenges for frontline health care workers with nurses experiencing higher stress levels due to the contagiousness of the virus and atypical work expectations (Mo et al., 2020; Sahay & Dwyer, 2021; Tort-Nasarre et al., 2021). Among nurses surveyed during COVID-19, 33% described their overall mental health and well-being as 'bad' or 'very bad', due to fear of contracting the virus, spreading it to others, and insufficient personal protective equipment (PPE) (Ford, 2020). Nurses encountered knowledge gaps and workforce shortages as they were moved into new roles with the formation of COVID-19 units and a pause in elective surgeries (R. Chen et al., 2021; Sahay & Dwyer, 2021). These changes to their primary roles, uncertainty surrounding the crisis, and fluid COVID-19 protocols impacted nurses' mental health (Capanna et al., 2020; Gao et al., 2020). It thus becomes critical to understand the impact of this noncausality crisis (i.e., a crisis for which no one organization is primarily responsible) on nurses' stress levels, and ultimately on the quality of one's work and wellbeing.

To cope, nurses and healthcare organizations improvised during COVID-19 more than usual (Sahay & Dwyer, 2021; Tort-Nasarre et al., 2021). These demands differed from those of singular causality crisis, where one organization is responsible for the crisis (Fortunato & Gigliotti, 2019). During the pandemic, nurses in the United States and other parts of the world were improvising and trying to modify their modus operandi to adapt to the demands of the crisis, in hopes of demonstrating resilience (Sahay & Dwyer, 2021; Tort-Nasarre et al., 2021). Along with improvisations, these employees also needed clear directions about new assignments and adequate resources to improvise and reduce occupational stress.

This article draws on the theories of job crafting and role conflict to explore the impact of these organizational factors on nurses' stress. Job

crafting theory highlights employees' efforts to make their work more meaningful via the improvisation of roles, relationships and cognition (Wrzesniewski & Dutton, 2001). These improvisation efforts allow employees and their organizations to adapt to stress and trauma and enhance resilience (American Psychological Association, 2021; Kuntz et al., 2017; Linnenluecke, 2017; Rerup, 2001; Sahay & Dwyer, 2021).

In addition to job crafting, employees need clear directions regarding new work assignments and improvisations to help reduce role conflict. As Rizzo et al. (1970) note, 'Role conflict is defined in terms of the dimensions of congruency-incongruency or compatibility-incompatibility in the requirements of the role, where congruency or compatibility is judged relative to a set of standards or conditions which impinge upon role performance' (p. 155). Role conflict, therefore, occurs when individuals receive incompatible requests from different members and are assigned work without adequate resources to execute tasks. An acute disconnect between old and new role expectations creates role conflict, which can lead to various negative physiological and psychological consequences, such as sleep disturbances, that may impact nurses' work (Nixon et al., 2011; Örtqvist & Wincent, 2006; Schuler et al., 1977). Role conflict can therefore cause more stress, impacting overall employee resilience.

Employee resilience may be defined as the employee's behavioral ability to leverage work resources for continual adaptation and well-being and is enhanced through organizational support (Kuntz et al., 2017). Job crafting and reduction in role conflict are thus important sources of resilience during a crisis (Rerup, 2001; Sahay & Dwyer, 2021). Job crafting aids in advancing adaptive resilience, which occurs when individuals and organizations develop new unplanned capabilities by responding to emergent situations (A. V. Lee et al., 2013; Nilakant et al., 2014). Adaptive resilience is viewed as a process that links a set of adaptive capacities toward a positive trajectory after a crisis (Nilakant et al., 2014). Adaptive resilience emerges postdisaster, where organizations develop new capabilities by dynamically responding to the changing crisis situation (A. V. Lee et al., 2013).

Improvisation and job crafting enhance adaptive resilience and help nurses cope with challenges posed by the crisis. However, we still know very little about how these organizational factors impacted stress levels for nurses during COVID-19.

This two-phase study included interviews with nurses working with patients with COVID-19 in the United States to examine organizational factors impacting workplace stress during the global health crisis. This phase was followed by a survey with nurses in the United States, which confirmed the impact of organizational factors such as role conflict, job crafting and time spent with COVID-19 patients on nurse stress and adaptive resilience.

2 | LITERATURE REVIEW

2.1 | Crisis and the healthcare industry

Organizational crises have the potential to interrupt normal organizational operations and may threaten an organization's existence (Fearn-Banks, 2009). Individuals impacted by the crisis tend to focus on the organization that is directly responsible. However, with COVID-19, there is no direct, singular causality, and no one organization with responsibility for managing the crisis (Fortunato & Gigliotti, 2019; Seeger & Mitra, 2019).

Crises without singular causality are not new to the healthcare industry. The opioid epidemic (Fortunato & Gigliotti, 2019), and viral outbreaks throughout the world (Ebola, SARS, etc.), exemplify healthcare crises with no easily defined cause or agent of responsibility (Collins et al., 2021). Unique in terms of its global spread, contagiousness, and high mortality rate, in combination with inundated healthcare systems, COVID-19 is a historic example of a prolonged crisis with shifting sources of blame and responsibility. In this article, we explore how COVID-19 pandemic, as a noncausality crisis, impacts the critical work of frontline nurses.

This pandemic changed the meaning of work for many nurses (Mo et al., 2020; Sahay & Dwyer, 2021; Tort-Nasarre et al., 2021). Nurses were asked to participate in atypical roles such as creating their own masks and helping each other correctly don and doff PPE. We believe that this noncausality crisis impacts stress for nurses, especially as they try to improvise and adapt to changing circumstances. Nurses may also face greater role conflict than usual. It thus becomes critical to explore the organizational factors that increase stress for nurses during a noncausality crisis.

2.2 | Nursing stress

Nurses have long struggled with job satisfaction, as reflected in high turnover rates due to poor working conditions, increased work conflict, heavy workloads and unequal power dynamics, particularly between unionized and nonunionized nurses (Seago et al., 2011). Even before the pandemic, nurses faced hazards ranging from exposure to communicable diseases to exclusionary work practices which impacted them psychologically (Moreland & Apker, 2016; Trinkoff et al., 2008). Leaders can help nurses by communicating effectively and by boosting nurse resilience through 'formal education, social support and meaningful recognition' (Kester & Wei, 2018, p. 57).

The usual sources of stress have increased in scope and severity during COVID-19 (Mo et al., 2020). As R. Chen et al. (2021) noted, nursing professionals had enough to worry about during the pandemic, as they worked through knowledge gaps, inadequate PPE and personal challenges. Mo et al. (2020) also explained that working long hours may be correlated with fear of contracting the infection. With the addition of COVID-19 responsibilities to all their usual challenges, we expect stress to continue to be embedded in nurses' lived experience.

2.3 | Job crafting

Job crafting involves 'the actions employees take to shape, mold and redefine their jobs' (Wrzesniewski & Dutton, 2001, p. 180). Crafting

roles makes them more meaningful, leading to greater job satisfaction, motivation and superior performance (Grant, 2007). Berg et al.'s (2013) model of job crafting involves task crafting (i.e., altering prescribed responsibilities), relational crafting (i.e., altering interactions with others) and cognitive crafting (i.e., changing perception of tasks and making them more meaningful). Employees craft their jobs when provided with motivating factors, such as job autonomy (Leana et al., 2009) or leader support (Van Dam et al., 2013), but also when working in suboptimal conditions (Frese & Fay, 2001) or when encountering uncertainty at work (Grant & Parker, 2009).

Studies have shown that job crafting mitigates employee stress (S. H. Lee et al., 2017; Singh & Singh, 2018). During COVID-19, nurses participated widely in improvisation and job crafting by modifying their roles and relationships (Cox et al., 2021; Sahay & Dwyer, 2021). Their bricolage included many efforts such as using coffee filters under regular masks to boost efficacy, exemplifying their adaptive resilience. Adaptive resilience occurs when individuals and organizations develop new capabilities to respond to crises, especially due to limitations in current plans and capabilities (A. V. Lee et al., 2013). Organizations look for new configurations to better fit the changing environment (McCarthy et al., 2017). These expectations to adapt are passed on to employees, such as nurses in the healthcare setting, who have to find new ways of functioning amidst the changing environment. In summary, resilience may be viewed as a process in which organizations and subsequently their employees look to develop new capabilities and configurations in the face of crisis. Organizational support becomes essential for employees as they seek to job craft during this time.

2.4 | Role conflict

During disease outbreaks, frontline workers, including nurses, are compelled to participate in new roles with supernumerary atypical responsibilities (Gebbie & Qureshi, 2002; Labrague & De los Santos, 2020). These sudden shifts may spark incongruous expectations, creating role conflict that leads to decreased job satisfaction and organizational commitment, and increased emotional exhaustion and resignations (Örtqvist & Wincent, 2006), in addition to physiological problems such as fatigue (Nixon et al., 2011). According to Benne and Bennis's (1959) seminal study, consistent expectations are necessary for employees to feel motivated and satisfied; however, during COVID-19, consistency was often lacking, leading nurses to experience role conflict.

The COVID-19 pandemic has significantly impacted nurses' roles and practices. During the first wave of this pandemic and throughout subsequent phases, nurses experienced role changes as they were moved to different units, tasked with additional responsibilities, and expected to prepare their units for shifting COVID-19 protocols (Capanna et al., 2020; Gao et al., 2020). We believe these shifts cause increased role conflict for nurses, further impacting their stress.

Building upon the existing literature, these research questions guided the interview phase of the study.

RQ1: How does the COVID-19 pandemic, as a noncausality crisis, impact the critical work of nurses?

RQ2: How do organizational factors contribute to nurses' stress during the COVID-19 crisis?

RQ3: How can organizations support nurses to help them deal with stress during a pandemic crisis?

For the survey phase, we posited hypotheses regarding the relationship between stress and job crafting, role conflict and time spent with COVID-19 patients, based on key variables and relationships that emerged in the interviews. The qualitative data suggested that both role conflict and amount of time spent with patients with COVID-19 increased the stress level for nurses. Regarding job crafting, however, we found some disparity between the prevalent literature and our qualitative results, suggesting that job crafting during this time caused more stress for nurses due to these extreme circumstances. This is reflected in the following hypotheses:

Ho1: Role conflict increases the level of stress for nurses during COVID-19.

Ho2: Job crafting increases the level of stress for nurses during COVID-19.

Ho3: As the amount of time spent with patients with COVID-19 increases, levels of stress for nurses also increase.

3 | METHODOLOGY

A mixed-method exploratory sequential design with qualitative and quantitative strands was applied to the data. We first conducted pilot study interviews to explore the discourse around organizational variables affecting nurses working during the pandemic and used them to design the quantitative questionnaire.

3.1 | Phase 1: Qualitative interviews

Research began with 14 semi-structured telephone interviews with nurses in the United States who were working with COVID-19 patients in early May 2020. Nurses were asked to reflect on the ways their work was influenced by COVID-19, concerns caused by the pandemic, and new challenges and ways of overcoming these workplace challenges.

A purposeful sample was recruited via snowball sampling using the lead researcher's personal health care network. Participants worked in New York, New Jersey, Pennsylvania and Illinois. Of the 14 nurses, 13 were female and 1 was male. All were between 30 and 44 years old. Most had 5–10 years of nursing experience, all had a baccalaureate degree, and all (14) were employed in 800-bed or larger facilities. These nurses were normally assigned to medical/surgical units (6), intensive care (4), and pulmonary care (4) before being reassigned to COVID-19 cases.

Interviews followed institutional review board regulations and ran from 45 to 110 min, averaging 50 min. All interviews were recorded and transcribed, memos were drafted, and six nurses reviewed the themes to check for validity and accuracy(Emerson et al., 2011). Nowell's phased approach to thematic analysis was used (Holloway & Todres, 2003; Nowell et al., 2017).

3.2 | Phase 2: Quantitative survey

To augment the qualitative findings, 152 nurses in the United States completed an anonymous, voluntary questionnaire online. The survey was conducted in June and July 2020, during the first wave of the COVID-19 outbreak in the United States. As an exploratory study, a snowball sample was used. Although generalizability was not the goal, the researchers tried to reach a diverse population via their personal medical networks throughout the United States and shared the survey link on social media and with individuals who worked in medical settings. The number of nurses from the interview phase who may have also taken the survey is unknown due to survey anonymity.

All measures were rated on a 5-point Likert scale. Labels for stress and job crafting were 0 (never) to 4 (always), while for role conflict they were 0 (not at all) to 4 (a great deal). Items were summed to provide each scale's score.

3.2.1 | Outcome variable

Stress was the outcome variable measured.

3.2.1.1 | *Stress*

($M = 13.65$, SD = 6.0, $\alpha = .882$). Five items relevant to the crisis were adapted from two existing nursing stress scales (Y. C. Chen et al., 2020; Gray-Toft & Anderson, 1981), and two new COVID-19-specific stress items were developed by the researchers. The items are: I have no time to fulfill my personal needs; I cannot take an uninterrupted 30-min mealtime break; I lack the opportunity to talk openly with colleagues about problems; I lack the opportunity to share experiences and feelings with my colleagues; I lack the opportunity to express my negative feelings toward patients with my colleagues; I feel stressed over the possibility of contracting COVID-19 on the job; I feel stressed over the possibility of losing patients to COVID-19.

3.2.2 | Independent variables

The study measured three dependent variables: role conflict, job crafting, and amount of time spent working with COVID-19 patients.

3.2.2.2 | *Role conflict*

($M = 8.02$, SD = 3.6, $\alpha = .818$). Four items for this scale were adapted from Schuler et al. (1977). Participants rated these items on how COVID-19 might have impacted their work. Scale items included: to carry out an assignment, I have to work around some rules or policies; I receive incompatible requests from two or more people in my organization; I do things that are likely to be accepted by one person and not by others in my organization; I receive an assignment without adequate resources and materials to execute it.

3.2.2.3 | *Extra roles/Job crafting*

($M = 10.85$, SD = 3.6, $\alpha = .84$). The COVID-19-oriented job crafting scale was a researcher-developed scale based on extensive review of the literature and on Slemp and Vella-Brodrick (2013) scale, which was further modified to fit the context of the pandemic. Five items measured the cognitive, task, and relationship aspects of job crafting. The items were: assuming responsibilities that were normally performed by other stakeholders; helping patients and their families connect with each other; providing emotional support to colleagues; reminding oneself of the importance of their work for the broader community; and thinking about how their job gave their life a purpose.

3.2.2.4 | *Time spent working directly with COVID-19 patients*

($M = 58.05$, SD = 27.31). Time spent was measured by this question: 'On a scale from 0% to 100%, how much of your time is spent working directly or indirectly with COVID-19 patients?'

The study employed descriptive statistics and multiple regression analyses using the Statistical Package for Social Sciences (SPSS). For cross-tabulations, the variables, except for geographic region and workplace location, were divided into two levels based on median scores.

4 | FINDINGS

Data are discussed in the order they were collected and according to the research questions they answered.

4.1 | Phase 1

RQ1: How does the COVID-19 pandemic, as a noncausality crisis, impact the critical work of nurses?

Nurses spoke about the difficulties and opportunities that emerged from this crisis, especially because it was noncausality crisis, and saw themselves facing more uncertainty in this crisis compared to other crises. Although they felt that their organizations had limited information to share, this crisis provided nurses with agency and space to innovate.

4.1.1 | Uncertainty

Nurses said this crisis was different in terms of the uncertainty they faced. For instance, an emergency nurse talked about 'a lot of unknowns out there…. We knew and saw this virus was deadly and contagious, but how much, for how long?…We knew that uncertainty

was there to stay, unlike before….' (P14). These words encapsulate her impression that COVID-19 was unlike prior crisis management situations 'where hospitals easily developed crisis plans'. Instead, noncausality heightened uncertainty. Since no one organization was controlling the communication plan, nurses received plenty of information and misinformation, but 'most of it was bogus and wasted my time and made me more uncertain' (P14), which further exacerbated anxiety. The amount of 'legit' information was limited and mainly addressed new hospital nursing protocols.

4.1.2 | Agency and space to innovate

Most nurses indicated that this crisis provided them with more agency and autonomy to innovate and improvise, because all the hospitals were trying to 'solve the difficult puzzle of keeping the patients alive' (P5). One nurse said, 'we found this new way of sanitizing masks because PPE was limited, and then we all shared these with other nurses [both in their organization and] in other hospitals…. this felt good' (P7). Therefore, this noncausality crisis motivated nurses to innovate and collaborate more freely with others to derive mutually beneficial solutions. Nurses spoke about hospitals and management supporting their efforts to create innovative care options that helped contribute to the knowledgebase for COVID-19: 'We are motivated by our management and hospital to come up with solutions… It does make us feel empowered though, as people have started to recognize our work, finally and we have more say in innovating' (P8).

RQ2: How do organizational factors contribute to nurses' stress during the COVID-19 crisis?

Nurses felt stressed due to these organizational factors that created role conflict for them: a new work environment, COVID-19's transmission speed and intensity, and unrealistic expectations around improvisation.

4.1.3 | New environment

Nurses reflected on workplace changes brought about by COVID-19, including their roles and how they enacted them. Many nurses were redirected to COVID-19 floors, where they often experienced role conflict, as this nurse explained, 'the first week was a total mess. It was a new unit for me, so I walked in and didn't know anything. … I was confused and I didn't know anyone who could help me understand what was going on' (P4).

Also, nurses performed their duties very differently during the pandemic, given the viral contagion risks, as described here: 'to get into a room takes forever. You have to don a gown, double gloves, an N95, another mask, a visor. You're hot. You're sweaty. You can't hear anybody….' (P1). These role adjustments, along with new physical protocols, posed ongoing role conflict and communicative challenges for individuals, because nurses were navigating a constellation of novel concerns.

4.1.4 | Intensity and speed

Most nurses focused on the unprecedented nature of the crisis because, although they were used to human loss, they had never experienced loss of this extreme magnitude and velocity. This explains what they experienced:

I was in a neural ICU, so I've seen a lot of this before with patients, … but not to this scope, and not seeing patients sickening so quickly. So, I had a patient sitting up and talking in the morning, and by the afternoon, he was intubated. (P6)

For many nurses, immersion in this intense situation caused great emotional stress: 'When I work long hours and I have spent a major chunk of time with the patients, I see many have taken a turn for the worse, I am in tears….' (P5).

Some nurses were fearful of contracting the virus at work and transmitting it to their loved ones, which magnified their stress: 'it was spreading so quickly, I was afraid to give it to my husband and we both could die' (P4).

4.1.5 | Improvisation

Nurses underscored the importance of job crafting and improvisation as coping mechanisms. However, this approach sometimes generated more stress, primarily due to a scarcity of necessary resources and the reassignment of job responsibilities.

Most nurses agreed that modifying their roles was necessary to make their work more meaningful. As one participant noted, 'we have to change up things if we really want our work to count' (P9).

Some described a specific instance when job crafting to make masks was essential, but a lack of resources led to failed improvisation and greater stress. For example, 'There were no other resources, and everything was back-ordered. It was more stressful' (P3). Therefore, while job crafting was viewed as beneficial, it was also difficult to implement, which became another stressor. Similarly, nurses who were moved from other floors found it difficult to improvise because directions were not communicated properly, as depicted here: 'you know we should have told the new nurses what we needed or asked them what they could contribute. I think it was confusing for them especially because they were new' (P5). A fluid chain of command, conflicting work assignments, and the shifting understanding of the virus itself deprived them of clarity regarding job expectations.

RQ3: How can organizations provide support to nurses to help them deal with stress during a pandemic crisis?

Nurses spoke about the importance of role clarity, training, and greater autonomy with resources. Nurses also called upon their experiences, training, and nursing identity to assist them tactically and strategically to cope with the crisis and job crafting.

4.1.6 | Clarity and experience

Nurses tried to provide familiar roles to those who had just moved into COVID-19 units as a means of reducing role conflict, like this: 'So, I can't take somebody who works on a medical-surgical floor…. and throw them on an ICU, and say, "Take care of that ventilator." They won't know what to do' (P3). She went on to explain how novel roles can cause conflict for those who must first quickly learn multiple new tasks. Furthermore, there were roadblocks to communication. Asking other nurses for help was not an option because 'others were busy' (P3). Over time, nurses adopted a collaborative, discursive approach to clarifying roles: 'Like she [surgery nurse who had recently moved to this unit] told me it had been a while [working directly with patients], and we needed these nurses to do other things. I was comfortable with bedside and direct patient care, and so I was assigned to the patients' (P6). This collaborative communication was essential in reducing role conflict, as it helped divide labor more realistically, which also fortified resilience.

4.1.7 | Training

Almost all nurses highlighted the importance of training, because it helped them sync their activities with others and acquire the skills required for their new work with COVID-19 patients. As one nurse indicated,

> And there were some nurses who said, 'Give me two hours of a crash course in what I need to do so that I can work in the ICU if you need me to', or 'Give me a little bit of background information on what I need to do—what I need to chart, and I can take care of that'. (P10)

Training was especially important for resilience because it helped the nurses 'find solutions, learn and look forward' (P4). This idea of resilience and bouncing forward was achieved through training which would help the nurses improvise and develop 'plans quickly' (P14) and aid in negotiating emerging expectations around hospital procedures and policies.

4.1.8 | Autonomy with resources

Nurses indicated that they were granted autonomy to modify tasks and relationships so that they could job craft during this pandemic. A Chicago nurse explained how nursing identity was integral to this process:

We got these awesome miner helmets from a manufacturer from some kind of farm. … We can just keep washing it over and over again, and it's how we can get in and out of the gowns superfast. And I don't even know. It's just, we adapt. (P2)

While she talked about developing this novel idea of using helmets for PPE, she also positioned adaptation and learning as part of who nurses were, their nursing identity. However, most nurses stated that autonomy was only helpful if it came with resources, as one respondent noted, 'we can't do much if the resources are not provided… resources are critical' (P6). In this example, the nurse was able to order helmets, but in many instances, these resources were missing, which created stress and hampered resilience.

4.1.8.5 | *Summary of Phase 1 results*

Overall, nurses felt that this non-causality crisis generated more uncertainty because no one organization was responsible for it, yet this also provided more agency to nurses for innovating, improvising and sharing with others. Nurses were more stressed when they had to job craft, especially with limited resources, and when they experienced role conflict. Moreover, the more time they spent with COVID-19 patients, the more stressed they became.

4.2 | Phase 2 results

The second part of this study, a survey of nurses in the United States, supported the qualitative data with role conflict ($\beta = .337$, $p \leq .001$), job crafting ($\beta = .341$, $p \leq .001$) and amount of time spent working with COVID-19 patients ($\beta = .218$, $p \leq .001$) predicting stress.

4.2.1 | Mean scores for variables

Mean scores and standard deviations for each variable are: stress, $M = 13.65$ (SD = 6.0); role conflict, $M = 8.02$ (SD = 3.6); job crafting, $M = 10.85$ (SD = 3.6) and percentage of time spent with COVID-19 patients, $M = 58.05$ (SD = 27.31).

4.2.2 | Associations between independent and dependent variables with key demographics

Cross-tabulations of stress and the three independent variables with key demographic variables revealed five statistically significant but weak associations for two independent variables: the amount of time spent working with COVID-19 patients and whether the nurses worked in a hospital. Nurses who worked more frequently with COVID-19 patients reported higher levels of stress (60% vs. 43%, $X^2 = 4.18$, $p < .05$, $\phi = 0.171$) and more role conflict issues (58% vs. 40%, $X^2 = 5.01$, $p < .05$, $\phi = 0.187$) than those who worked less often with COVID-19 patients (see Table 1). Nurses working in hospitals felt more stress (60% vs. 43%, $X^2 = 4.33$, $p < .05$, $\phi = -0.171$) than nurses working in other settings. Nurses in the South/South Central regions more often worked in nonhospital settings than nurses in New England/MidAtlantic, North Central and Mountain/Pacific areas, respectively (46% vs. 12% vs. 33% vs. 9%, $X^2 = 15.03$, $p < .001$, $\phi = 0.333$; Table 2).

4.2.3 | Correlations among independent and dependent variables

Table 3 displays the correlations of the means for stress and each independent variable. There were statistically significant, positive relationships for stress with role conflict ($r = .576$, $p < .01$), job crafting ($r = .542$, $p < .01$) and the percentage of time spent with COVID-19 patients ($r = .423$, $p < .01$).

TABLE 1 Association between working with COVID-19 patients by stress and job conflict

	Percentage of time spent working with COVID-19 patients					
	Low percentage		High percentage		Total	
	N	%	*N*	%	*N*	%
Low stress	43	57	26	39	69	49
High stress	33	43	40	61	73	51
Total	76	100	66	100	142	100
Low job conflict	46	61	28	42	74	52
High job conflict	30	40	39	58	69	48
Total	76	100	67	100	143	100

TABLE 2 Association between working environment with stress, and geographic location

	Working environment					
	Hospital		Nonhospital		Total	
	N	%	*N*	%	*N*	%
Low stress	39	43	35	60	74	50
High stress	52	57	23	40	75	50
Total	91	100	58	100	149	100
New England/Mid-Atlantic	31	34	7	12	38	26
North Central	15	16	19	33	34	23
South/South Central	27	29	26	46	53	36
Mountain/Pacific	19	21	5	9	24	16
Total	92	100	57	100	149	100

Additional statistically significant correlations include a weak positive relationship between time spent with COVID-19 patients and role conflict ($r = .298$, $p < .01$), a weak positive relationship between time spent with COVID-19 patients and job crafting ($r = .306$, $p < .01$), and a moderate positive relationship between job crafting and role conflict ($r = .502$, $p < .01$; Table 3).

4.2.4 | Model analysis: Regression of independent variables on stress

The multiple linear regression indicates that the three independent variables explain 48% of the variance in stress, F (3,143) = 45.086 $p < .001$. This is considered a large effect (Cohen, 1988). No evidence of multicollinearity was found.

The strongest predictors of stress were role conflict ($\beta = .337$) and job crafting ($\beta = .341$). The amount of time that nurses spent working with COVID-19 patients was a slightly weaker predictor of stress ($\beta = .218$; Table 4). Therefore, hypotheses 1, 2 and 3 were supported. No prediction with new cases was done.

5 | DISCUSSION

Consistent with the literature, nurses job-crafted their roles to cope with the demands of the crisis (Rerup, 2001; Wrzesniewski & Dutton, 2001). The job crafting aided in advancing adaptive resilience as nurses' and their organizations developed new unplanned capabilities in responding to COVID-19 (A. V. Lee et al., 2013; McCarthy et al., 2017; Nilakant et al., 2014). However, unrealistic expectations and assumptions around job crafting, due to scarce resources, elevated nurses' stress levels. Therefore, the process involved in attaining adaptive resilience, specifically improvising with limited resources to find workable solutions, caused more, rather than less, stress for nurses. Furthermore, carrying out new assignments without clear rules while receiving incompatible requests from different individuals also increased nurses' stress levels. Therefore, role conflict and job crafting may synergistically increase stress levels, particularly when nurses work in uncharted territory and when given minimal support.

The findings also further our understanding of noncausality crisis, which imposes additional labor on organizational members to find solutions to the crisis. This is especially true because no one

TABLE 3 Correlations among stress and main variables

	Stress	Role conflict	Job crafting	Time with COVID-19 patients
Stress	1			
Role conflict	0.576**	1		
Job crafting	0.542**	0.502**	1	
Time with COVID-19 patients	0.423**	0.298**	0.306**	1

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

TABLE 4 Multiple regression analysis of variables predicting stress

	B	Standard error	*β*	*t*
Role conflict	0.553	0.117	0.337	4.743***
Job crafting	0.477	0.100	0.341	4.785***
Time with COVID-19 patients	0.046	0.014	0.218	3.413***

***$p \leq .001$.

organization bears the responsibility, which provides an opportunity for any organization to intervene and find a solution (Fortunato & Gigliotti, 2019). While this motivates organizations to afford their employees more agency, employees must actively negotiate given that information regarding the crisis and practices for directly addressing the crisis are not controlled by one organization. For instance, nurses who were unaccustomed to having the agency to innovate precrisis due to uneven power dynamics (Moreland & Apker, 2016; Trinkoff et al., 2008) found opportunities to innovate and derive mutually beneficial solutions during this crisis. However, deriving solutions in light of conflicting and limited information resulted in added labor.

5.1 | Practical implications

There are several practical implications for leaders across organizations trying to help employees build resilience during a crisis. Organizational crisis management protocols should allow smoother role transitions, reduced role conflict and meaningful employee support during a prolonged crisis. Providing adequate support and resources for job crafting during an organizational crisis is essential. Organizational leaders need to consider the impact of the crisis on employee stress, engagement, and well-being, and consider both procedural and material considerations for improvement during future moments of exigency (Gigliotti, 2020). Especially in noncausality crisis situations, organizations should work on setting realistic goals for job crafting based on available resources, communicating consistent directions around new roles, and arranging training for crisis situations. While organizations are looking to adapt and change according to the changing environment to become more resilient, they must consider how passing along these changing needs to their workforce without the essential support can induce more stress in the process of attaining resilience. Nurses considered all of these necessary organizational supports as key for innovation and resilience.

6 | LIMITATIONS AND FUTURE RESEARCH

The quantitative survey did not include comparative questions around how the stress levels may have changed for these nurses pre-post COVID-19. Also, there was no chance to conduct a baseline study of stress levels before the survey because the pandemic was an unexpected event. Therefore, this could offer an opportunity for future quantitative studies to collect comparative data to investigate how stress levels change as the crisis unfolds. Future studies could also look at other noncausality crises and compare how work is impacted for different frontline employees and the impact on resilience.

7 | CONCLUSION

In summary, this noncausal crisis generated uncertainty, but also provided nurses with more agency to improvise. It created a need for nurses to job craft to meet the demands of the crisis. While job crafting was critical for coping with crisis, the paucity of resources, contagiousness of the virus, and conflicting expectations around roles produced intractable challenges for employee resilience. This resulted in higher stress levels for nurses. To support nurses and enhance resilience, it is important for the organization to provide resources, role direction, and training as well as develop realistic expectations around job crafting.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

Research data are not shared.

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