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EMERGENCY NURSE CONSENSUS ON MOST EFFECTIVE AND ACCESSIBLE SUPPORT STRATEGIES DURING COVID-19: A DELPHI STUDY



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Contribution to Emergency Nursing Practice

- The prevalence of burnout, stress, and similar conditions in health care workers is well studied. Although there is a wealth of evidence relating to strategies to prevent and reduce these conditions, evidence to identify which strategies are most effective for emergency nurses is sparse. There is no consensus on how to best support staff.
- The main finding of this paper is that emergency nurses perceive social and emotional well-being support as most effective and engaging; employer-led supports are not favored, and they prefer in-person support.
- Recommendations for translating the findings of this paper into emergency clinical practice include encouraging tailored support strategies for emergency nurses based on their perceptions and preferences.

Abstract

Introduction: Emergency nurses face significant risk for stress-related complications while working during the COVID-

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19 pandemic. However, there is limited empirical evidence on the effectiveness and accessibility of support strategies for nurses in this novel situation. Expert consensus may help fill this knowledge gap. Therefore, the study objective was to gain expert consensus from emergency nurses on the most effective and accessible strategies during the COVID-19 pandemic.

Methods: This 2-round Delphi study recruited an online expert panel from emergency nurses practicing during the COVID-19 pandemic within a single Mountain West health system spanning 9 urban and rural emergency departments. Over 10 weeks in the summer of 2021, participants completed 2 sequential surveys to rate and rank employee-led and employer-led support strategies collated from a literature review.

Results: Of 327 recruitment emails sent, 28 nurses joined the expert panel. Emergency nurses reached a consensus on preference for employee-led self-care activities, including enhancing social well-being and strengthening emotional well-being. None of the employer-led strategies reached group consensus regarding high effectiveness, accessibility, and the likelihood of participation. Additionally, emergency nurses favored in-person support strategies over other delivery methods.

Discussion: Numerous studies have explored the impact of the COVID-19 pandemic on health care workers. Although experts and researchers seek to determine the best support strategies, this study highlights how emergency nurses wish to be supported. Employers can tailor support strategies for maximum effect by understanding health care worker perceptions and preferences.

Key words: Emergency nursing; COVID-19; Hospital administrators; Nurse administrators; Occupational health; Occupational stress

Introduction

On March 11, 2020, the World Health Organization declared a global pandemic from the novel COVID-19 virus.¹ The pandemic has affected all corners of the world

and has placed a tremendous burden on health care workers. Early in the pandemic, numerous professional organizations warned of impending adverse sequelae for these workers owing to their heightened level of physical, emotional, and moral distress stemming from traumatic experiences while working during the pandemic.² Since the pandemic began, thousands of nurses reported feeling stress, frustration, exhaustion, anxiety, undervalued, and unsupported.³ In addition, a prepandemic survey revealed that nurses reported having suicidal ideation more than other types of United States health care workers and were less likely to seek professional help.⁴ The effects of the pandemic have almost certainly intensified this dire situation. Organizations including the American Psychiatric Nurses Association,⁵ American Nurses Foundation,⁶ World Health Organization,⁷ The Joint Commission,⁸ and the National Academy of Medicine⁹ are among the dozens of groups aware of the need for immediate attention and are seeking various ways to support health care workers. The health care workforce must be protected, given that the full extent of the pandemic's impact on health care workers remains unknown.

The prevalence of burnout, stress, anxiety, and other similar occupation-associated conditions in health care workers is well studied; there is a wealth of evidence relating to support resources and strategies to prevent and reduce these conditions. A literature review revealed various support strategies to reduce these conditions and stressors, many of which fit categorical themes. There appears to be a predominance of strategies targeted to the individual, such as self-care activities, and less attention on organization-driven or employer-led strategies, such as providing formal support programs and employee counseling.¹⁰ However, systematic reviews on coping strategies for health care workers during disease outbreaks revealed that both individual and institutional support are helpful.¹¹

The current knowledge has various limitations. To begin, the evidence concerning emergency nurses is sparse.¹² As frontline health care workers, emergency nurses are distinctively affected by the nature of their work given that they spend more time in direct patient care than other types of emergency health care workers. Emergency nurses also report higher levels of burnout from the pandemic than other emergency department (ED) health care workers.¹³ In addition, coping strategies vary among health care workers,¹⁴ and few comparative studies identify which types of staff well-being support interventions are most effective.¹⁰

Consequently, there is no consensus on how to best support staff involved in traumatic or disaster-like situations.^{15,16}

Although the unprecedented pandemic has sparked a barrage of new evidence related to supporting health care workers, most new evidence appears to be limited to expert opinion or "lessons learned" rather than research. To our knowledge, no published evidence explores how to best support emergency nurses in their working environment during a global pandemic. The purpose of this Delphi study is to identify consensus among emergency nurses about the most effective and accessible employer-led and employee-led support strategies during the COVID-19 pandemic. This study may augment the process of tailoring resources for emergency nurses to prevent stress-related complications and enhance overall well-being and will contribute relevant data to the general knowledge base to help shape future research.

Methods

Delphi methodology is a rigorous survey process, first defined by the Research and Development Corporation in the 1950s, that aims to measure consensus among a group of experts through a series of questionnaires with controlled opinion feedback.¹⁷ The technique has gained popularity across various industries, including nursing research,¹⁸⁻²⁰ and it can be adapted to suit a particular study.¹⁸⁻²¹ Moreover, a 2021 systematic review found that, in emergency nursing research, rigorous Delphi studies are versatile, appropriate, and effective for measuring group consensus.¹⁹ For this study, researchers used a 2-round, modified Delphi study aimed to establish consensus among emergency nurses on the most effective and accessible support strategies during the pandemic. Although the classic Delphi technique typically includes 3 to 4 survey rounds and begins with an open-ended questionnaire, a modified approach may include using a literature review to pregenerate items for the first round,^{20,21} conducting the study online,¹⁹ and using variations in total survey rounds.¹⁸⁻²⁰ Owing to the unique challenges experienced by emergency nurses during the pandemic, modifications for this study included conducting the study online to align with physical distancing safety measures and both reducing the survey rounds and pregenerating a list of evidence-informed support strategies to reduce attrition among time-constrained participants.

To collate a list of support strategies, researchers performed a literature review using the patient/population/problem, intervention, comparison, outcome question, "What are the most effective and accessible resources to ED nurses during a pandemic to decrease burnout?" Concurrent manual and librarian-assisted literature searches included combinations of the terms "health

BOX 1

List of support strategies

Employee-led strategies

- Self-care activities that enhance your own physical well-being, such as healthy eating, exercise, sleep hygiene, and lifestyle changes
- Self-care activities that enhance your emotional well-being, such as practicing stress management, relaxation, mindfulness, and reflective writing/journaling
- Self-care activities that enhance your spiritual well-being, such as gratitude, acceptance, prayer, and meditation
- Self-care activities that enhance your social well-being, such as establishing new and enhancing existing relationships with peers, friends, and family
- Self-care activities that enhance your financial well-being, such as seeking information on emergency grants, funds, or other financial support for nurses
- Seeking education and training on work-related skills, such as conflict management, communication, and how to work in a team
- Seeking counseling offered or sponsored by your employer
- Performing self-assessments, such as for burnout, stress, or compassion fatigue

Employer-led strategies

- Formal debriefings led by a chaplain, social worker, or other peer
- Formal education or training on self-care strategies for your physical well-being, such as healthy eating, exercise, sleep hygiene, and lifestyle changes
- Formal education or training on self-care strategies for your emotional well-being, such as practicing stress management, relaxation, mindfulness, and reflective writing/journaling
- Formal education or training on self-care strategies for your spiritual well-being, such as gratitude, acceptance, prayer, and meditation
- Formal education or training on self-care strategies for your social well-being, such as establishing new and enhancing existing relationships with peers, friends, and family
- Formal education or training on work-related skills, such as conflict management, communication, and team-building exercises
- Leadership rounding, huddles, check-ins with staff, and access to experts for consultation
- Formal recognition from leadership and staff, such as a “kudos” board and “thank you” cards, and verbal support
- Ensuring a safe work environment, such as providing adequate PPE
- Establishing formal and anonymous processes for listening to staff feedback, such as staff forums and suggestion boxes
- Offering individual (1:1) support for employees, such as mentorship or counseling
- Offering financial support, such as subsidizing hotel rooms for staff
- Supporting social gatherings, such as book clubs, journal clubs, coffee talks
- Supporting spiritual health, such as holding moments of silence, ethics rounds or consultations
- Establishing support groups, such as peer support groups and psychological first aid responders

PPE, personal protective equipment.

care workers,” “health care providers,” “nurses,” “frontline nurses,” “emergency department,” “ED,” “burnout,” “occupational stress,” “compassion fatigue,” “psychological distress,” “support system,” “support program,” “support resources,” “COVID-19,” “pandemic,” and “public health emergency.” The search was limited to articles published since 2015 in the English language. Queried

sources included the CINAHL, MEDLINE, PubMed and ProQuest databases, Google Scholar, and gray literature. A total of 50 articles were found, 23 of which did not meet patient/population/problem, intervention, comparison, outcome criteria, resulting in 27 articles included in the review. The authors reviewed the articles to identify recommended support strategies, and each

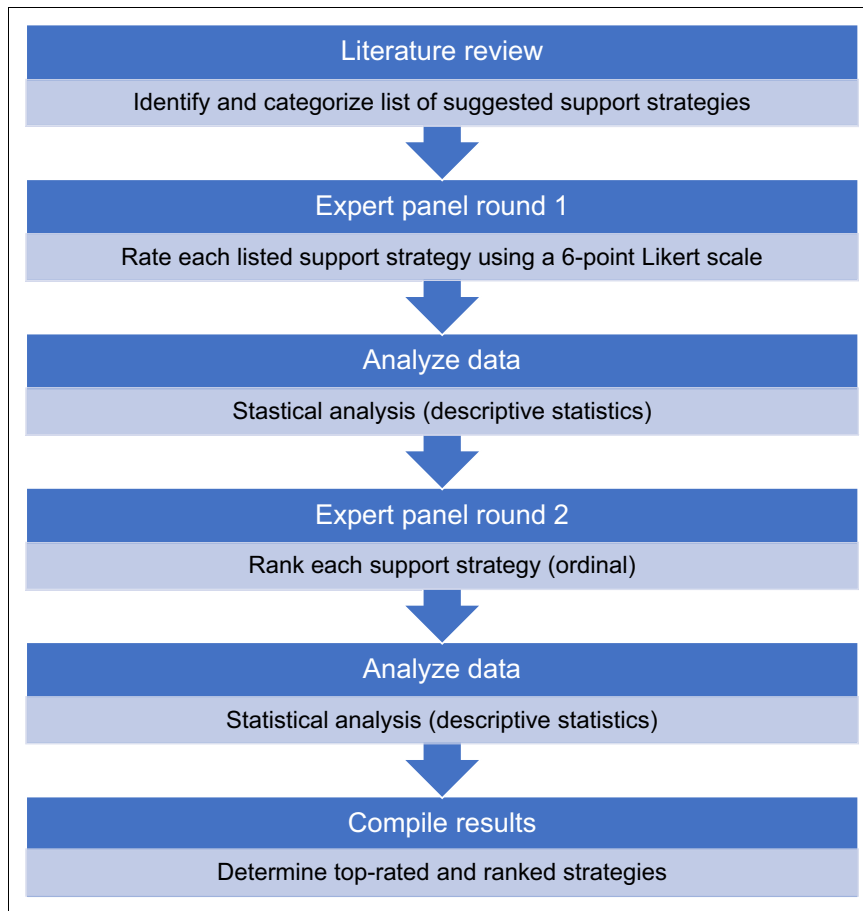


FIGURE
Delphi study schematic.

strategy was then categorized into various themes that were either employee led or employer led (Box 1).

The results of the literature synthesis informed the creation of 2 sequential surveys administered to eligible emergency nurses over 10 weeks (Figure). The surveys queried opinions regarding listed support strategies (Box 1). Given that Delphi studies do not require a specific number of participants,^{18,19,21,22} investigators pragmatically aimed to recruit at least 30 participants across 9 study sites within a single health care system. All employed emergency nurses (registered nurses and licensed practical nurses) who provided direct patient care during the COVID-19 pandemic were eligible for participation, regardless of their employment status (full time, part time, per diem/flex time). In addition, float pool nurses who self-reported working at least 75% or more of typical shifts in the emergency department met eligibility criteria. Nurses not considered employees of the organization, those working outside the ED setting, and nurses not engaged

in direct patient care, such as emergency nurse managers or directors, were excluded from participation. The study received institutional review board approval and final authorization on January 28, 2021.

Recruitment occurred over approximately 3 weeks in May 2021 and included various web-based and direct, in-person communication methods. Recruitment included sharing recruitment flyers via organizational communication platforms and posting flyers in ED staff work areas. In addition, all employed emergency nurses received private emailed survey invitations and, if needed owing to no response, a maximum of 2 weekly reminders via REDCap (Vanderbilt University), a secure electronic database platform, to mitigate associated risks with loss of confidentiality.^{23,24} Owing to the nature of the study, all participants were employees and considered a vulnerable population. During the study, one investigator served in a supervisory role for potential participants at 1 study site. Safeguards to protect participants and

BOX 2

Sample survey questions for employee-led support strategies

Initial survey

On a scale of 1-6, with 6 being highest, rate your perception of the effectiveness of the following employee-led support strategies for emergency nurses working during the COVID-19 pandemic. Effectiveness is defined as perceived positive impact to employee well-being.

On a scale of 1-6, with 6 being highest, rate your perception of the accessibility of the following employee-led support strategies for emergency nurses working during the COVID-19 pandemic. Accessibility refers to perceived ease of activating, accessing, understanding, or using a specific support strategy.

On a scale of 1-6, with 6 being highest, rate how likely you are to participate in the following employee-led support strategies for emergency nurses working during the COVID-19 pandemic.

On a scale of 1-6, with 6 being highest, rate how likely you are to participate in the following support strategies for emergency nurses working during the COVID-19 pandemic that are accessed or delivered in the following manner

- In person
- Online, at a website or via a webinar
- By telephone or calling a hotline
- An application on a mobile device, such as a cellphone or tablet
- By wearing smart technology, such as a smartwatch, sensors, or virtual reality headsets

Final survey

Based on an initial survey of emergency nurses, the following employee-led support strategies scored at least an average score of 4 of 6 on the 6-point Likert scale in terms of how likely you are to participate in the strategy. Now, rank each item from 1 to 2, in order of most likely to participate to least likely to participate.

Overall, which strategies would you most recommend for supporting emergency nurses working during the COVID-19 pandemic? Rank each item from 1 to 2, in order of most recommended to least recommended

COVID-19, coronavirus disease 2019.

reduce bias included a statement in all study materials, including the informed consent form, that participation was voluntary and the choice to participate or not would have no effect on employment. Participants were allowed to withdraw at any time, without penalty, for any reason without requiring disclosure.

Two sequential surveys were developed in REDCap and emailed to the group. The initial survey asked the panel to use a 6-point Likert scale (1, lowest; 6, highest) to rate their preference for employee-led and employer-led support strategies on 3 dimensions: effectiveness, accessibility, and likelihood of participation (Box 2). Effectiveness was defined as perceived positive impact on well-being, and accessibility referred to perceived ease of activating, accessing, understanding, or using a specific support strategy. Employee-led strategies refer to those initiated and acted upon by employees, whereas employer-led strategies refer to those initiated and acted upon by employers. Additionally, the initial survey included a question on the likelihood of participation in strategies accessed or delivered in the following manner: in-person, online (visiting a website or via webinar), by telephone, via an application on a mobile device, and by wearing smart technology. Of note, participants were not required to have used or participated in a specific strategy to offer opinions on perceived potential effectiveness, accessibility, or likelihood of participation.

There are no strict requirements for conducting Delphi studies, and there is no agreement on the best way to conceptualize consensus.^{18-22,25} For this study, participants independently rated various support strategies using a 6-point Likert scale to avoid potential pitfalls with a midpoint option.²¹ A priori, researchers agreed that only strategies averaging at least a 4 of 6 on the Likert scale would be considered for inclusion in the final survey. A biostatistician used SAS (SAS Institute Inc) version 9.4 to calculate descriptive statistics, specifically central tendency and dispersion measures. To account for outliers in the data set, the study team focused on the interpolated median (IM) and interquartile range (IQR).²¹ After consulting with the biostatistician, researchers defined consensus for top-rated strategies as those with an $IM \geq 4$ on a 6-point Likert scale and $IQR \leq 2$. The second (final) survey included only top-rated first-survey strategies, and participants then ranked the strategies from most to least preferred in each category (employer led and employee led) and overall. Because there were so few favorably-rated strategies from which to choose in round two, the final survey provided only 2 options from which to select—"most preferred" and "least preferred." Incomplete responses from either survey were retained in the data set (ie, not eliminated).

Results

A total of 327 emergency and float pool nurses received targeted recruitment emails. Of those, a total of 52 employees responded to the initial recruitment email, and 28 of those met the inclusion criteria. Twenty-eight completed the initial survey (100% response rate), and 19 of the 28 (68% response rate) also completed the final survey. Of all respondents, 61% identified as female, 39% identified as male, and most were between 35 and 44 years (36%). Two float pool nurses (7%) participated. In terms of years of emergency nursing experience, most of the panel had 1 to 5 years (36%) or >10 years of experience (39%). The bulk of respondents worked full time (82%) and day shift (54%) and practiced in an urban or suburban emergency department (64%) (Table 1).

Round 1 results show emergency nurses perceived employee-led self-care activities to enhance social well-being, such as establishing new and enhancing existing relationships with peers, friends, and family, as most effective (IM = 4.1, IQR = 2). Conversely, emergency nurses did not perceive employer-led strategies as effective. There were no top-rated strategies in terms of accessibility for either employee-led or employer-led supports. Only 2 strategies were top rated for likelihood of participation: those for employee-led self-care strategies to enhance social (IM = 4.4, IQR = 2) and emotional well-being (IM = 4.1, IQR = 2). These 2 strategies met the criteria for inclusion in the final survey. Finally, emergency nurses strongly preferred to participate in strategies accessed or delivered in person compared with other means (IM = 5, IQR = 2) (Table 2).

For the final round, participants ranked 2 strategies in terms of likelihood of participation and overall recommended. For both, employee-led self-care strategies to enhance social well-being outranked employee-led activities to enhance emotional well-being.

Discussion

To the best of our knowledge, this is the first study to systematically query emergency nurses about various types of support strategies by looking comprehensively at strategies suggested in the published literature. The purpose of this study was to identify emergency nurse consensus on the most effective and accessible support strategies during the COVID-19 pandemic. Overall, the data suggest emergency nurses perceive employee-led strategies to support social well-being as the most effective support strategy, followed by strategies to enhance emotional well-being. These findings

TABLE 1
Expert panel characteristics

Characteristic	n (%) of respondents
Survey	
Round 1	28 (100)
Round 2	19 (68)
Sex	
Female	17 (61)
Male	11 (39)
Age*	
< 25	1 (4)
25-34	8 (29)
35-44	10 (36)
45-54	6 (21)
55-64	3 (11)
≥ 65	0 (0)
Years of experience	
< 1 y	3 (11)
1-5 y	10 (36)
5-10 y	4 (14)
≥ 10 y	11 (39)
Employment status [†]	
Full time	23 (82)
Part time	3 (11)
Flex/per diem	2 (7)
Worksite	
Urban or suburban emergency department	18 (64)
Rural, critical access, or free-standing emergency department	10 (36)
Work shift*	
Day shift	15 (54)
Mid shift	8 (29)
Night shift	5 (18)

* Percentages may not total 100 owing to rounding.

[†] Includes 2 float pool nurses.

align with a multicenter study showing emergency nurses preferred to cope by spending time with friends and family.¹³ Another survey showed that, for health care workers, relying on emotion-focused coping mechanisms may improve symptoms of anxiety and depression.²⁶ Furthermore, a 2020 scoping review on ameliorating interventions to reduce occupational stressors among ED staff indicated strategies such as mindfulness and relaxation aimed at ED health care workers reduced burnout, stress, and anxiety.²⁷

TABLE 2

Initial survey responses indicating top-rated strategies

Topic	Employee-led strategy	Employer-led strategy
Perceived effectiveness	Self-care activities that enhance social well-being, such as establishing new and enhancing existing relationships with peers, friends, and family	None
Perceived accessibility	None	None
Likelihood of participation	Self-care activities that enhance your social well-being, such as establishing new and enhancing existing relationships with peers, friends, and family. Self-care activities that enhance your emotional well-being, such as practicing stress management, relaxation, mindfulness, and reflective writing/journaling	None

For this study, emergency nurses did not rate any employer-led strategies favorably. Congruently, a recent study conducted in the same health system evaluated nurse responses to both self-initiated and leader-led resilience activities and found that nurses do not engage in leader-led activities.²⁸ These findings warrant further exploration of why employees do not engage with employer-led support activities or resources. Engaging employees is critical when designing, implementing, and evaluating support systems. Moreover, Fitzpatrick and Valentine²⁹ explicitly call for nursing organizations to assist health care leaders in building upon organizational practice research to identify effective interventions. Otherwise, organizations risk wasting resources on interventions not rooted in empirical evidence.

Despite physical distancing limitations implemented during the pandemic and the availability of various technological tools to support staff, emergency nurses preferred in-person support. This particular finding may reflect the reality of the day-to-day work life for emergency nurses, where there is minimal, if any, downtime to view a webinar, call a hotline, or log in to an application. However, a cross-sectional study of nearly 1000 doctors and nurses showed that more than 50% of participants accessed psychological support resources through online media during the pandemic.³⁰ Although using technology to deliver mental health interventions may be low cost and highly scalable, more research is needed to evaluate effectiveness.³¹

Limitations

Limitations to the study include focusing solely on emergency nurses working in a single health care system in the Mountain West area. Results may not be and were not

intended to be generalizable to other types of health care professionals, such as intensive care nurses, physicians, and nonfrontline health care professionals affected by the COVID-19 pandemic. Although there is no requirement for a minimum sample for Delphi studies, participation by emergency nurses in both the initial and final surveys was limited, and this may have introduced nonresponse and attrition biases. The limited participation may be attributed to the unique challenges posed by the peaks and dips of COVID-19 activity at the time of the study and the potential lack of motivation or available time to respond. It is reasonable to assume the dynamic nature of the pandemic may influence support preferences at any given time. In addition, the reported support preferences may be unique to long-term situations with chronic stress compared with short-term events, such as mass casualty incidents. The body of evidence related to COVID-19 has dramatically changed and expanded since the conceptualization phase of this study in early 2020. Thus, there may be new empirical evidence that helps us better understand effective ways to support emergency nurses. Finally, the study measured perceptions of effectiveness and accessibility but did not directly measure those outcomes; thus, researchers recommend caution when equating consensus results with “best” interventions.²¹

Implications for Emergency Nurses

The National Academies of Sciences, Engineering, and Medicine’ report, *The Future of Nursing 2020-2030: Charting a Path to Achieve Health Equity*, highlights the critical importance of continually supporting the well-being of nurses responding to disaster and public health

emergencies through the actions of various organizations within and outside health care, as well as nurses themselves.³²

This study highlights strategies nurses and their employers can take to support nurse well-being through the course of the COVID-19 pandemic and to prepare for future crises.

Conclusion

As we better understand the depth and breadth of pandemic's impact on the well-being of frontline health care workers, a multifaceted approach may be most effective in addressing short- and long-term support needs. Not all nurses cope with stress the same way. Therefore, support strategies should be dynamic, adapted to local cultures and contexts,^{15,27,33} and holistic to include personalized strategies and supportive work environments.^{11,27,33} Opportunity exists for future, large-scale research comparing long-term effectiveness and accessibility of support strategies, both for emergency nurses and other health care professionals affected by the pandemic.

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Author Disclosures

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