Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Pain Management Nursing 23 (2022) 9–16

Contents lists available at ScienceDirect

Pain Management Nursing

journal homepage: www.painmanagementnursing.org

Original Article

Pain Management Nurses' Roles During the COVID-19 Pandemic

Timothy Joseph Sowicz, Ph.D., R.N., N.P.-C.[*,##], Mitchell R. Knisely, Ph.D., R.N.[†], Staja Q. Booker, Ph.D., R.N.[‡], Jinbing Bai, Ph.D., M.S.N., R.N.[§], Anitha Saravanan, Ph.D., R.N.[‖], Barbara St. Marie, Ph.D.[¶]

[*] The University of Arizona College of Nursing, Tucson, Arizona
[†] Duke University School of Nursing, Durham, North Carolina
[‡] University of Florida College of Nursing, Gainesville, Florida
[§] Emory University Nell Hodgson Woodruff School of Nursing, Atlanta, Georgia
[‖] Northern Illinois University School of Nursing, DeKalb, Illinois
[¶] The University of Iowa College of Nursing, Iowa City, Iowa

ARTICLE INFO

Article history:
Received 27 August 2021
Accepted 26 September 2021

Keywords:
Nurse's Role
Covid-19
SARS-CoV-2
Qualitative Research
Pain

ABSTRACT

Background: Millions of people globally have been affected by the Covid-19 pandemic. It's impact on pain management nurses roles' remains unknown.
Aims: To explore role changes among pain management nurses performing patient care during the Covid-19 pandemic.
Design: Qualitative descriptive research study.
Settings: The American Society for Pain Management Nursing's listserv, E-News Brief postings, and snowball sampling.
Participants/Subjects: English-speaking registered nurses or advanced practice registered nurses who provided direct patient care since 2020 were eligible.
Method: Data were collected through individual, semi-structured telephone interviews. An interview guide was used and included questions about participants' characteristics and the effect of the Covid-19 pandemic on their roles in clinical work. Data were analyzed using qualitative content analysis.
Results: A homogenous sample of eighteen nurses from the United States was interviewed. Their normal roles, roles during the pandemic, and surges in patients with Covid-19 as the condition for role changes emerged from their descriptions. Most participants did not experience significant changes in their normal roles, but all described how their normal functions were impacted by the pandemic.
Conclusions: As the infectious variants of this disease evolve or other disastrous conditions occur, further changes to roles may occur. The skill sets of pain management nurses, including understanding assessment of pain across the lifespan, administration of opioids and multimodal analgesia, monitoring of patients, and communicating by educating and consultations, reinforce the significant contribution pain management nurses have as valued team members in times of crisis.

Background

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), commonly known as COVID-19, has infected more than 207 million people and resulted in approximately 4.3 million deaths around the world (Johns Hopkins University & Medicine, 2021). This contagious respiratory infection has caused an international pandemic that has significantly impacted frontline providers and health systems. Nurses, the largest contingent of providers, have been indispensable in COVID-19 prevention and response efforts.

The COVID-19 pandemic required health systems to adapt to the increasing number of people requiring hospitalizations by reallocating resources to prevent further spread of the infection and to meet the needs of patients. Consequently, nurses had to adapt, and some were reassigned new roles within facilities to meet the additional needs (Pontieri-Lewis, 2020; Purba, 2020; Ulrich et al., 2020; Wierenga et al., 2020; Yaffee et al., 2020). Nurses have been featured prominently in the lay press and mounting empiric evidence about their experiences has been published and is beginning to be synthesized since the onset of the pandemic (Fernandez et al., 2020). However, the effects of the pandemic on

[##] Address correspondence to. Timothy Joseph Sowicz, Ph.D., R.N., NP-C, The University of Arizona College of Nursing, 1305 N. Martin Ave, PO Box 210203, Tucson, AZ 85721-0203.
E-mail address: sowicz@email.arizona.edu (T.J. Sowicz).

https://doi.org/10.1016/j.pmn.2021.09.006
1524-9042/

pain management nurses (PMNs) have been absent from the literature. While PMNs' scope and standards of practice have been articulated (American Nurses Association (ANA) and the American Society for Pain Management Nursing (ASPMN) 2016), the impact of the pandemic on them remains unknown. Understanding nurses' normal roles and changes to them because of the pandemic is important for informing these specialty providers and the public, aiding in preparing for future health crises, and providing a historical record of their work during this pandemic. Therefore, this study was conducted to explore role changes of PMNs performing patient care during the COVID-19 pandemic.

Literature Review

Since 1990, the ASPMN has been dedicated to promoting and providing optimal care to patients who experience pain across the lifespan and continuum of care, while periodically analyzing the role of PMNs to deliver credentialing examinations and enhance public safety (ASPMN, 2021; Pellino et al., 2002). The mission of ASPMN is to "advance and promote optimal nursing care for people affected by pain by promoting best nursing practices" (American Society for Pain Management Nursing ASPMN, 2021). Since the inception of PMN, how and where PMNs practice has been central to understanding their unique position within the discipline and practice of nursing, developing scope and standards of practice, and informing clinical practice guidelines (American Nurses Association ANA, 2018; de Moraes et al., 2021; Registered Registered Nurses' Association of Ontario, 2013; The Joint Commission, 2017).

Pain management nurses are committed to the care of more than 120 million Americans impacted by pain (Nahin et al., 2019). They provide pain assessment, monitoring, evaluation, and treatment with pharmacologic and nonpharmacologic pain management interventions. Additionally, PMNs provide therapeutic communication and counseling, patient and family teaching, and collaborative and organizational activities across a variety of clinical care settings and community centers (Pellino et al., 2002; Vallerand et al., 2011). Members of ASPMN rose to the challenge of helping patients during the COVID-19 pandemic.

Throughout the COVID-19 pandemic, health systems were reorganized to contend with surges in the volume of infected patients and frequent updates to guidance as more information about the virus became available (Houghton et al., 2020). To respond to the increasing number of infected patients and prevent further spread, nurses were reassigned from their normal responsibilities to new roles to help bolster staffing in intensive care units, new COVID-19 units, and serve in other support roles (Fernandez et al., 2020; Yaffee et al., 2020). As a result, nurses encountered many personal and professional challenges (Arnetz et al., 2020; Gordon et al., 2021). Nurses were the most frequent healthcare personnel to be infected by the virus (Gómez-Ochoa et al., 2021; He et al., 2021). Additionally, nurses experienced high levels of stress and burnout (Murat et al., 2021), feelings of fear and uncertainty (Labrague & de Los Santos, 2021), moral distress and ethical challenges (Jia et al., 2021; Morley et al., 2020), limited resources such as personal protective equipment (Houghton et al., 2020), and communication deficits with managers and administrators (González-Gil et al., 2021).

Despite these practice, policy, and system challenges, nurses' professional and ethical obligations to society bolstered them to continue caring for patients during the pandemic. Until now, the role of PMNs during the COVID-19 pandemic remains unclear. Understanding the roles of PMNs during pandemics could help healthcare leaders prepare and support nurses for similar events in the future.

Methods

Design

Qualitative description was used to address the aim of the study. An underlying assumption of this method is that "humans can describe retrospective and prospective life events" (Parse, 2001, p. 57). This design is appropriate because no data about PMNs' role changes during the COVID-19 pandemic exist (Sandelowski 2000; Sandelowski, 2010). Qualitative descriptions of events such as changes in roles during a pandemic are characterized by discovering patterns in these events.

Philosophical Frame

The study was informed by the central beliefs associated with the naturalistic paradigm. These beliefs include its ontology, epistemology, nature of generalizations, causality and values for research (Lincoln and Guba, 1985). For example, the epistemology holds that "realities are multiple, constructed, and holistic" (Lincoln and Guba, 1985, p. 37). Therefore, we assumed nurses' experiences of their role changes during the pandemic would have similarities and differences which is desirable as this more fully represents the phenomenon of inquiry.

Procedures

Participant recruitment

A convenience sample of nurses was recruited for the study through a web-based announcement on the ASPMN's listserv, postings on the organization's weekly E-News Brief, and snowball sampling of authors' and participants' colleagues. Nurses who were engaged in direct patient care beginning January 2020, were licensed as a registered nurse (R.N.) or advanced practice R.N. (A.P.R.N.), and were able to understand and speak English were eligible to participate in the research study. In March 2020, there were 337 ASPMN members who subscribed to the organization's listserv. Recruitment began July 15, 2020.

Interested nurses were instructed to email one of the co-principal investigators. These potential participants were then assigned to 1 of 3 interviewers who contacted them via email to arrange a time to determine their eligibility. An information sheet about the study was included in this initial email. At an agreed upon time, the interviewer and potential participant spoke via telephone. A screening form was used to determine eligibility. Potential participants were given an opportunity to ask questions about the study and then provided verbal consent to participate. Following the interviews, participants were mailed a check for $20 as remuneration.

Data collection

Data were collected through individual, semi-structured telephone interviews. Each participant was interviewed once. Nine interviews were conducted in July 2020, 4 between August and December 2020, 3 in April 2021, and the remaining 2 in June and July 2021. Interviews were audio recorded and then uploaded to a professional transcription service and were transcribed; two hundred eighty-two pages were generated across 18 interviews. Interviews lasted between 23 and 85 minutes ($\bar{X} = 47$ minutes). An interview guide was used and included questions to elicit participants' characteristics (e.g., sex, years in practice), the impact of the pandemic on PMNs' work, and perceptions of how the pandemic affected people identifying as ethnic and racial minorities and older people. Post-interview memos about perceptions and feelings about

the interview, participants, and preliminary ideas about emerging data and analysis were written by the interviewers.

All data and study related materials were stored on a research data storage service (RDSS) maintained by the University of Iowa. The RDSS was accessed through a virtual private network (VPN), which required a username, password, and multi-factor authentication. Only members of the research team had access to the RDSS.

Data analysis

Text data from transcripts were analyzed using qualitative content analysis (Graneheim and Lundman, 2004). Microsoft Word and Excel were used to organize, and store analyzed data. The first author (TJS) read all 18 interviews and wrote memos about the data concerning nurses' roles and role changes. Then, 2 authors (BSM and TJS) independently read and coded the first 3 transcripts to begin analysis. They then met to perform consensus coding, which included reviewing their independent coding schemes and discussing differences and similarities between them. They determined that these preliminary data pertaining to nurses' roles and role changes could be organized into 4 broad domains: (1) normal role; (2) transition to new role; (3) role during COVID-19; and (4) support during COVID-19.

One author (BSM) then read the remaining interview transcripts and created 4 documents, each with segments of data about each of the 4 domains taken from the full transcripts; these documents of segmented data served as the units of analysis. The term "role" was operationalized by the authors prior to data segmentation and included functions, actions, work, behaviors, practices, or tasks described by participants. It also encompassed title, autonomy, accountability, licensure, credentialing, and scope of practice. "Role changes" were how these changed due to the pandemic. Data about personal experiences (e.g., family members), descriptions of patients' or colleagues' experiences, support during role changes, and teamwork not relevant to roles or role changes were not included in this article. "Transition to new role" was defined as a non-static state between normal role and new role (if applicable), including data about participants' experiences associated with the transition.

Data in the 4 domain documents were then analyzed by 2 authors each, which enhanced inter-coder reliability. For example, 2 authors (JB and TJS) independently coded the data about nurses' normal roles (domain 1). Each author-analyst created individual codes and then met as a pair to discuss them and resolve discrepancies. Similar codes were organized into subcategories, and subcategories with similar ideas were collapsed into more distinct and descriptive categories. Codes, subcategories, and categories were organized using a codebook.

Two authors (B.S.M. and T.J.S.) independently reviewed the coding schemes for each of the 4 domains, scrutinizing categories and subcategories for their applicability for describing PMNs' role changes during the pandemic. After this, 3 authors (BSM, JB, and TJS) met to discuss analysis, including interrogating the 'transition to new role' domain and making decisions for re-presenting the data. The 'support during Covid' domain data were not included in this analysis because the data were about nurses' experiences during the pandemic generally and not specific to nurses' current roles or role changes.

Rigor

Trustworthiness is the term commonly used to indicate the rigor in which a qualitative research study was conducted. Historically, a study regarded as trustworthy met 4 criteria (credibility, transferability, dependability, and confirmability) (Lincoln & Guba, 1985). It has been suggested that "rigor" be used instead of trustworthiness, and the criteria listed above be replaced with reliability, validity, and generalizability (Morse, 2015). In the current study, reliability and validity were established using coding schemes, including the development of codebooks. Validity was also established through regular debriefing (i.e., every 2 weeks) among the authors, including identifying our own biases as nurses and researchers. The authors met collectively and in smaller groups during the design, recruitment, data collection, analysis, and writing phases.

Human subjects considerations

The study was approved by each of the institutional review boards (IRB) of the authors' affiliated universities. A waiver for documentation of informed consent was obtained. Participants were assigned an identification number at the beginning of the interview.

Results

Participants' Characteristics

Eighteen nurses were enrolled in and completed the study. All but one (94%) self-identified as female and 94% as White (1 identified as Asian/Pacific Islander). Most held graduate degrees: 44% with a master's and 33% with a doctorate (4 with a D.N.P. and 2 with a Ph.D.). Practice as an R.N, ranged from 7-47 years ($\bar{X} = 28$) and 72% practiced solely in inpatient settings. Before the pandemic, 50% reported they were employed as nurse practitioners, seven as R.N.s, and 2 as clinical nurse specialists. Normal department affiliations varied and included acute pain service, pain team, palliative care, GI and oncology, hospice, nurse-led pain team, medical-surgical, pain consult team, wound care, and education. They maintained R.N. licenses in 11 states; northeast region (n = 7), south (n = 6), midwest (n = 4), and west (n = 2). One participant was licensed in 2 states (midwest and west regions).

Roles Before the Pandemic

To understand if and how PMNs' roles changed because of and during the pandemic, it was necessary to describe their roles before its onset. Participants discussed many of the components included in the conceptualization of role used for this study, including behaviors, functions, and tasks. Additionally, they talked about patient assignments, certifications, department affiliations (e.g., palliative care), patients' characteristics (e.g., those recovering from surgery), and settings where they carried out their work to convey aspects of their roles. Overall, participants expressed that connecting with other professionals and providing pain management were major roles pre-pandemic.

Connecting with other professionals to coach and role model pain management practice

Participants used words such as calling, consulting, contacting, meeting, and talking to describe ways of initiating interactions with other professionals. Professionals were referred to generically as either members of teams (e.g., interdisciplinary team) or as individuals (N.P., nurse, or fellow). Nurses made these connections with other professionals as part of carrying out their roles to discuss pain management generally and pain medications specifically, talk about the expectations of a consultation, and to follow up on whether recommendations made by participants were appropriate and helpful. Attending meetings served as a means for interacting with others prior to the pandemic.

Nurses also noted that connecting with other professionals was an opportunity to provide coaching about pain management practice for other professionals. Their roles enabled them to educate, teach, train, and provide feedback to colleagues. Since non-drug

treatments are an aspect of pain management, one participant educated nurses about the importance of documenting these interventions: "We're trying to push more towards nonpharmacologic modalities for pain control and educating the nurses exactly where to document that. Because I think we're using those types of modalities, but we're not documenting it [*sic*]." This opportunity to provide education also demonstrates participants' connecting with others to role model behaviors of PMNs, especially for other nurses with less experience.

Providing pain management

Participants frequently described behaviors consistent with those of consultants and interventionists when talking about their normal roles. Nurses addressed patients' needs and provided pain management by gathering information, making recommendations, prescribing practices, administering medications, offering or providing non-medicine alternatives, providing information, and enabling and supporting family involvement. Recognizing pain and symptom management were examples of patients' needs. To address these needs, participants gathered information about patients through health assessments, reviewing health records, and talking to patients and family members. Information gathering was often used to make recommendations (e.g., using opioids) for managing patients' pain. Some participants moved beyond merely making recommendations to engaging in prescribing practices, such as writing orders associated with procedures. Prescribing practices also included providing refills of medications and weaning "them [patients] off of narcotics" when other treatments such as acupuncture were used. Administering medications was a practice associated with their role. Words such as "doing" and "giving" conveyed the action-oriented nature of this task. Participants mentioned that administering chemotherapy, injections, analgesia (including regional), and sedation was a component of their role.

Offering and providing non-drug alternatives for pain relief was another role carried out by nurses. Guided imagery, music, affirmations, painting, yoga, touching, and holding group sessions were activities that participants provided for patients. Providing information to patients and families and enabling and supporting family involvement were also roles described by nurses. Giving bad news, instructions, and anticipatory guidance were types of information. Allowing others to be with patients, attending family meetings, discussing goals of care, and managing family distress were examples of how nurses worked with patients and families. Advocating for comfort, coordinating treatment and discharge plans, and implementing or navigating policies and processes were activities also undertaken to address patients' needs.

Roles During the Pandemic

Five of the 18 participants (28%) experienced a change in their title during the pandemic. Title changes included: (1) inpatient consultant to ICU NP; (2) inpatient pain team to hypoxic team member; (3) educator to "runner" assisting in COVID-19 units; (4) pain management to critical care nurse; and (5) educator to nurse in a COVID-19 unit. Most participants self-reported changes to their normal role functions during the pandemic (even if their title remained the same).

Functioning in new roles and specialties

Participants described a few new roles that they took on during the pandemic. These included providing palliative and compassionate care, being an advocate for families, providing team-based patient care and employee support. Some participants became more steeped in palliative care practices, specifically addressing emotional pain and ethical concerns. One participant noted that they became "a valuable part of the palliative care team, but I wasn't on the palliative care team, but I worked with them. Actually now, since then, they've adopted me into the palliative care team and they're opening up a position."

Being a family advocate included serving as the communication liaison between families and patients and advocating for patients. As communication liaisons, nurses used telephones and videos to give families updates about patients and to facilitate difficult conversations, especially at the end-of-life. Nurses called families to determine patients' health care proxies and if advanced directives were available. Families were updated often about patients' conditions using technology when they were unable to be with patients in-person. Some patients opted to remain out of the hospital, if possible, to avoid being sequestered from their family, such as a patient with cancer and pain. In this instance the nurse ensured that the patient had drug and non-drug pain treatments to honor the patient's wish to remain at home with the patient's fiancé.

Advocating for families also included not perfunctorily telling families that their infected loved ones were likely to die, despite being asked to do so by other professionals. One participant explained that they did not do this because it hurt families, and death was not always the outcome. Despite the number of patients who died, nurses were buoyed when someone recovered from their infection and was able to be discharged from the hospital. One participant shared that extubating a patient and weaning them off oxygen therapy "gave us strength to keep going on. You know what I mean? And keep doing what we were doing. Because even if only one person made it, it was worth it." Technology also allowed families to see their loved ones at the end of their lives. One nurse described this as acting as "the connection between the family at home and the loved one here in the bed." Another aspect of this new role included taking extra steps to ensure that pain management continued. For example, making sure that pharmacies were open and able to fill prescriptions for opioids for cancer pain management during the pandemic.

Providing team-based patient care and employee support were also acknowledged by participants as new roles. Nurses helped develop and joined new teams during the pandemic, which they may not have been members of previously. These included a hypoxic team and serving as team members acting on rapid responses and codes. One participant described a hypoxic team as made of practitioners charged with continually rounding within a facility to identify patients in respiratory distress and to intervene by proning patients, instructing them to cough and breathe deeply, sit upright, and use a spirometer. Additionally, this role allowed hypoxic team members to help nurses identify patients at risk for respiratory distress through continually assessing respiratory rates and pulse oximeter measurements using video technology. Other participants described that being intentional about visiting different areas of health care facilities regularly to be present for staff and assist where needed was a new role. Doing so sometimes presented opportunities for participants to lend their pain management expertise to providers without the need for a formal consultation.

In addition to supporting nurses at the point-of-care, a new role that one participant took on during the pandemic was to provide support for employees who became infected with the virus. This support included tracking infected employees and following up with them regularly depending on their needs. Following up included providing information about the duration of their quarantine and returning to work. If an employee was at home and experiencing concerning symptoms, this participant would help the employee arrange a telehealth visit with their practitioner or assist with getting them to the emergency department.

These roles may have been practiced peripherally before, but they became central roles during the pandemic. These new roles

were learned on the job. For example, telehealth was used to carry out work with patients remotely, interact with other healthcare professionals during meetings, and provide screening and follow-up services for infected patients and employees.

Managing pain and COVID-19 symptoms safely

Nurses had to be creative when addressing pain during the pandemic because patients were in isolation and contact had to be minimized. For example, one participant described moving patient-controlled analgesia pumps outside rooms, monitoring patients for signs and symptoms of pain, and administering bolus doses as needed from a distance. Nurses also had to contend with shortages of some medications when providing treatment for pain and other virus-related symptoms like dyspnea. For example, when certain opioids were in short supply, ketamine or rotating opioids were used to help alleviate these symptoms. Medications sometimes had to be changed because patients' usual regimens did not alleviate some virus-specific symptoms such as headaches.

Certain medications were not routinely prescribed for infected patients. NSAIDs were not used because of reports that these increased patients' odds of becoming infected. Because many patients required sedation, opioids were used generously; therefore, acetaminophen was also not commonly prescribed. As patients began to recover from their infections, some nurses noted that the rapid reduction in opioid doses led to withdrawal symptoms. One nurse recalled needing to mentor the rest of the healthcare team about slower tapers to reduce or prevent opioid withdrawal. While opioids were used to treat tachypnea at times, other participants noted that opioids were used sparingly in infected patients because of concerns for respiratory depression. When feasible non-drug treatments for pain were used. These included heat and ice packs, ice helmets, mindfulness, pet and music therapy, and therapeutic touch; however, their use was sometimes limited or unavailable because of the need to minimize contact with infected patients. As with drugs, nurses drew on their creativity to offer non-drug treatments. One nurse reported, "I think I probably ran the hospital out of their heated, the shampoo packs that come in a hat that you put on the patient."

To summarize, nursing during the pandemic involved managing pain and other symptoms associated with the virus, including dyspnea and headaches. While managing pain was sometimes not a priority, nurses devised new ways to administer medications while limiting contact with patients through placing and using equipment outside of rooms. Some classes of pain medications could not be used with infected patients and using non-drug treatments was often not feasible because contact with patients was restricted; this also created difficulties for re-assessing pain and other symptoms.

Impact of changing practices on patient care

Pain management practice, including the new roles described above, was impacted by the pandemic for some nurses. Limiting contact with patients and families was a major change in practice. Clustering care (e.g., administering medications, delivering meal trays, and cleaning patients' environments were completed during one interaction with a patient) was a way that nurses minimized being exposed to infected patients, which also resulted in less frequent patient-nurse interactions. Personal protective equipment also impacted nurses' abilities to engage with patients as they normally would.

Shifting priorities

Pain management was not always prioritized. Given the emphasis on helping patients survive and the need to limit contact with infected (or potentially infected) patients, pain management was not always able to be practiced as it traditionally had. Furthermore, pain management services were sometimes unavailable. For example, elective procedures like injections may not have been available to prevent possible exposure between patients and providers or usual ways of contacting someone from the pain service (e.g., beeper) were unavailable.

Not all participants felt that the pandemic impacted their roles; they were able to maintain sufficient patient contact to provide pain management as they would during other times. However, one participant noted that pain became less of a concern for patients, stating, "If there was any pain, it was not recognized because the patient was focused on breathing. That was really it. The focus was on breathing."

Experiencing workload changes

As the number of infected patients increased, participants acknowledged changes in their workloads, not only in terms of numbers of patients but their complex and acute needs (generally, not specifically pain management needs). In addition, workloads changed because of staff shortages. Practice settings were described as "war zones" in which the empty beds did not remain unoccupied for long, leading participants to refer to themselves as "air traffic controllers", contending with getting patients "in and out." In keeping with the military terminology, nurses described themselves as "paratroopers" because they acted immediately, sometimes neglecting their own safety. Changes in workload occasionally meant that educational needs for patients and families increased, but providing education was not always possible. For example, one participant described having aromatherapy ("lavender sticks") to help patients relax to cope with their pain, but nurse-led explanation and demonstration was not always possible.

Transitions in Role

The pandemic created great unpredictability and ambiguity resulting in a need for nurses to transition to new roles or adopt new functions. Transitions theory (Meleis, 2010) provides a definition of transitions, including the types, as well the conditions under which transitions occur. Nurses in this study described transitions to their new roles including the condition triggering them, and then back to their usual roles after surges in numbers of infected patients receded.

Condition that triggered transitions

The surge in the number of infected patients, especially those requiring hospitalizations, was the condition that triggered role transitions among participants. These surges occurred between March and May 2020 for some participants, depending on their location within the US. One participant stated, "because of the pandemic… there were some staffing changes within our acute pain service." Pain management nurses were reassigned to new roles to help bolster staffing in intensive care units, newly created COVID-19 units, and other support roles in response to these surges of patients and the need for infection prevention efforts. Participants described this time as a "whirlwind… everyone was doing day to day survival."

Experiences of transitions in roles

Participants described role transition as difficult or challenging, mandatory or voluntary, and associated with ambiguity. The difficult or challenging experiences of transitions were, described in ways such as, "we weren't use [*sic*] to this kind of a thing," or "… it can rattle the most seasoned nurses." Transitions occurred as changes in roles or functions that were mandatory or voluntary. A participant explained their experience with mandatory transition:

"They threw us in together. It immediately worked out really well with people just lining up and giving me face sheets for [patients] that were coming in." Further explanation of the mandatory transition was described as "told to" such as, "I was told to educate the operating nurses," "I was told to come here," or "they told us to stop coming to the hospital" Participants also experienced optional or voluntary transition, stating "I just kind of said okay. You know? I just went with them." Another said, "I want to do whatever I could [*sic*] to help. I've said whatever I can do, I'll be there." Participants went to where the help was needed.

The transitions between roles (i.e., normal to new during surges) were accompanied by ambiguity. Transitioning to a new clinical experience was described as "unfolding as we went along… treatment protocols were changing on an ongoing basis…we didn't know what to do." For example, some participants spoke about treatment protocols changing daily and PPE requirements changing hourly. Ambiguity characterized the sudden and sometimes unexpected movement from one role to another (or a change in how normal roles were carried out; i.e., change in functions associated with normal role) as a response to the increased number of infected patients requiring participants' attention and nursing services. Consistent with the ambiguity of their situations, nurses weighed the risk of interacting with patients without SARS-CoV-2 screening results. One participant asked rhetorically, "is this a patient we should really be seeing, or one that was being screened? Should we wait a little bit, get the test results back before we make contact" Their descriptions of ambiguity, the unknown, illustrates the context of moments that were not frozen in time, rather ebbed and flowed throughout their clinical experiences.

Transitioning back to normal role

There were transitions back to normal pain management roles following the high-volume surges when fewer patients were hospitalized. Like transitions to new roles during surges, some participants found that going back to pre-surge or normal roles was also difficult. One participant explained:

> [It] was hard to go back into my traditional role without thinking of all the things that went on… All that stuff that you had pushed in the back of your head started coming out… so doing normal things that you used to do before the surge and before working in the ICU environment [suddenly] it was hard to get back into your routine role. So it took a little while.

Prior to the pandemic, some of the participants in our study were working in established pain services in their normal role, but during the surge of infections they experienced a reduction in the number of patients experiencing pain. One stated, "the work of directly, of providing the care that was specifically related to pain management became much less common for our service." After surges they had to return their focus to managing patients with pain. One participant stated they were "getting ready to go do a relaunch of our acute pain service, going to every nursing unit to make sure everybody knows that we still have the acute pain service available to use." After focusing on patients', families', and colleagues' acute needs (e.g., respiratory status, addressing end-of-life decisions) during surges, some participants had to remind colleagues in their facilities of their normal roles and functions and in doing so highlighted the need for ongoing and specialized pain management.

Discussion

To our knowledge this is the first study to describe how PMNs' roles were affected by the COVID-19 pandemic. Roles before pandemic, roles during the pandemic, and transitions in roles emerged from the data as major categories. While not all participants experienced major changes in their normal roles, all described either changes to some of their regular functions or how those were carried out because of the pandemic. The findings add to the growing literature about the experiences of nurses during this period in global history, primarily the changes and agility in role expectations.

Role is "a function or part performed especially in a particular operation or process" (Merriam-Webster, 2021). Pain management nurses' functions have been developed by professional organizations (ANA and ASPMN, 2016; Czarnecki & Turner, 2016). These functions can be organized into a process (e.g., ANA's 6 standards of practice). Our study participants described functions that fit into the components of a process in their normal, pre-pandemic positions. They also described their roles using our expanded conceptualization of role (i.e., defined more broadly than functions), including the characteristics of patients they work with. A worthwhile future scholarly endeavor may be to reexamine if nurses' roles encompass more than just published scopes and standards of practice. Their normal roles continued during the pandemic but in more creative and intentional ways to ensure some level of pain management was provided.

The COVID-19 pandemic: (a) unearthed new roles not typically under the purview of PMNs; (b) uncovered potentially new roles and practices (e.g., telehealth, coaching pain services); (c) shifted normal roles to focus on more general nursing services and/or life-sustaining services; and (d) heightened current roles (e.g., patient advocacy). These changes were primarily driven by the need to respond to a crisis, during which nurses are among the first to respond (Buchan, Charlesworth, Gershlick, & Seccombe, 2019).

Earlier studies have demonstrated that pandemics can cause disruptions to services, impacting care quality (Halcomb et al., 2020; Hartmann-Boyce & Mahtani, 2020). Similarly, our study found that the capacity for, and quality of, pain management were affected. Participants explained they had higher workloads with acutely ill patients requiring intensive respiratory interventions. They described COVID-19 units as "war zones," and likened nurses to paratroopers and air traffic controllers, jumping right in to care for critically ill patients. These results are consistent with another study that found nurses reported excessive work demands, fast changes in the workplace, and rapid changes in patients' statuses (Ardebili et al., 2021). Such disruptions have caused dilemmas among nurses since they are unable to provide care in line with patients' needs (Corley et al., 2010). Our study participants also expressed difficulty in providing usual pain management due to uncertainty about how to manage symptoms of COVID-19 and its related pain syndromes. Recently, guidance for managing pain for infected patients have been released, and these may guide nurses during future pandemics (Cohen et al., 2020; Eccelston et al., 2020; Murphy & Latif, 2021).

Surges of infected persons requiring hospitalization was the condition that triggered transitions in roles. A crucial role change was the need for our participants to become patient advocates. Some took on the new role as family communication liaison, often making calls to families to give updates about patients, determine advanced directives and end-of-life (EOL) decisions, and have difficult EOL conversations. In our study nurses were faced with imminent changes, including the death of patients. According to Meleis and colleagues' (2010) theory of transitions, changes in health create a process of transition for patients that may expose them to vulnerabilities in the environment. In our study, patients and nurses both experienced transitions in health and illness, transitions in roles, and transitions in healthcare delivery. The high mortality rate associated with COVID-19 infections led to feelings of uncertainty, which has been identified in studies in-

volving other infectious diseases (Chung et al., 2005; Mok et al., 2005). As COVID-19 infection and mortality rates declined, nurses slowly returned to pre-pandemic roles, providing pain management services. This study demonstrated the importance of PMNs' roles in managing pain safely and opportunities to re-define or update PMNs' roles for future agility in responding to the evolving pain needs of patients, families, and even members of the nursing profession.

A strength of this study was its focus on role and role changes in a specialty area. Our results provide context and evidence for expanding roles for PMNs to address existing healthcare complexities and uncertainties. Convenience sampling yielded a homogenous sample. Maximum variation sampling would likely have generated a diverse sample, including more nurses in the midwest and western regions of the US (and internationally), nurses of color, men, different types of A.P.R.N.s, nurses with only baccalaureate or associate degrees, and those practicing in ambulatory settings. Researchers who use the APSMN listserv in the future should understand this sampling frame before recruitment; that is, the number and characteristics of listserv subscribers. Subscribers should be compared with the larger membership of ASPMN to determine how this subset reflects the entire membership. Accessing PMNs was relatively easy as all the authors are members of ASPMN whose nursing practice has included interacting with people experiencing pain, either exclusively or while practicing generally. The authors' emic views were helpful, but also may have impacted data collection. For example, if a participant described an aspect of PMN, the interviewer (a nurse) may have assumed they understood the meaning of, and value placed upon, it by the interviewee; however, care was taken to clarify participants' perceptions, feelings, and experiences. Our results should be interpreted within the context of dominant culture experiences and may not reflect experiences of nurses with varying identities within these settings.

Implications for Nursing Education, Practice, and Research

This study found that during a pandemic, patients may not report, and practitioners may not ask about, pain because of other urgent physiological or psychological concerns. Pain management nurses should understand that in such times, assessing and addressing pain should occur regularly. Sequelae from infections may cause new, or exacerbate existing, pain. Controlling acute pain is imperative to prevent transition to chronic pain; this may be especially important for patients with long-haul symptoms. It is important to integrate existing knowledge of disaster nursing into educational opportunities (e.g., a disaster simulation) for PMNs to prepare them to address pain during such events.

This study is foundational for future research. First, historical research about nurses' roles in pain management during other domestic and global infectious disease outbreaks (e.g., HIV, tuberculosis) may provide useful insights about the evolution of pain management as a nursing specialty in general, and in times of crisis specifically. A historian interested in nurse-delivered nonmedication interventions to reduce or alleviate pain during outbreaks of various infectious diseases may compare these to strategies used by PMNs today. Second, descriptions of PMNs' new roles and functions creates opportunities for informal theory development based on practice (Rolfe, 1996). For example, one participant in this study described how they had to become creative in providing comfort to patients when resources and supplies were limited. An informal theory of nursing creativity for pain management could be developed into a situation-specific theory through empirical research and further explication of its conceptual components (i.e., necessity, frustration, curiosity) and then tested among nurses. Doing so would further the theoretical basis of PMN practice.

Conclusions

Nurses working with patients during the COVID-19 pandemic described their roles before and during the pandemic, and the transitions between them. Before the pandemic many of the roles commonly associated with PMNs' standards of practice were carried out by the participants (regardless of practice setting, department affiliation, or title). While few participants experienced significant role changes in which a set of familiar skills or functions was temporarily replaced by another, often less familiar set (e.g., transitioning from a N.P. pain consultant to a N.P. managing critically ill patients), most conveyed changes in how they carried out their roles and functions due to surges of infected patients into their practice settings. New roles (e.g., family advocate) and practice specialties (e.g., palliative care), maximizing self and others' safety while managing pain, and changes in priorities and workload emerged as changes in roles. The lingering effects of the pandemic provide an opportunity to examine PMNs' traditional roles and explicate new ones, develop educational opportunities to provide pain management under crises, and create new theories of PMN.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgments

This work was supported by the Barbara and Richard Csomay Center for Gerontological Excellence, the University of Iowa College of Nursing. The authors thank the study participants for their time and expertise.

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