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Nurses' Perspectives and Needs in Delivering COVID-19 Care within Critical Care Units and Hospital Emergency Services

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Abstract

Background: The ongoing COVID-19 pandemic continues to present significant challenges to public health systems worldwide, particularly impacting critical care units (CCUs) and hospital emergency services (HESs). Nurses working within these settings have been providing care to COVID-19 patients amidst heightened pressure and uncertainty.

Objective: This study aims to identify the perceived needs of critical care and emergency nurses , concerning safety, organization, decision-making, communication, and psycho-social-emotional support during the acute phase of the pandemic crisis.

Methods: Conducted as a cross-sectional study, this research represents the first phase of a mixed-methods approach involving critical care and emergency nurses . Data collection was carried out through an online questionnaire.

Results: The study received 557 responses, revealing significant concerns among respondents. These included fears of infection (37.5%), elevated workloads and patient-nurse ratios (28.2%), challenges in disconnecting or resting due to demanding shifts (28.2%), increased responsibilities in managing COVID-19 patients (23.9%), communication deficiencies with middle management (21.2%), limitations in providing psycho-social care to patients and families (53.5%), and emotional exhaustion with difficulties in emotional release (44.9%).

Conclusions: The findings underscore the vulnerability of critical care and emergency nurses during the COVID-19 pandemic. Further research is needed to explore additional aspects of their experiences during this challenging time.

Keywords: COVID-19, Emergency service, Hospital, Health planning guidelines, Health services research, Intensive care units, Needs assessment, Nursing services

Introduction

On January 30, 2020, the Director-General of the World Health Organization (WHO) declared the outbreak of the novel coronavirus 2019 (COVID-19), in the People's Republic of China, a Public Health Emergency of International Concern (PHEIC) (Ministerio de Sanidad, Consumo y Bienestar Social [Spanish Ministry of Health, Consumer Affairs, and Social Welfare], 2020a). The spread and seriousness of this infection led the WHO to declare COVID-19 a pandemic on March 11, 2020 (WHO, 2020). In Europe, the rapid spread of the virus in some countries led governments to declare a state of emergency, imposing total or partial lockdown restrictions for their population, the partial closure of borders and cessation of productive and educational activities as essential measures (CIDOB, 2020).

As of May 26, 2020, the number of reported cases in Europe was 1,361,100 with Spain being the third most affected country (European Centre for Disease Prevention and Control, 2020), with 236,259 confirmed cases and 27,117 deaths (Ministerio de Sanidad, Consumo y Bienestar Social [Spanish Ministry of Health, Consumer Affairs, and Social Welfare], 2020b). The region of Madrid was the most affected in Spain, with a total of 68,066 cases. Of these, it is estimated that 41,913 required hospitalization, with 3,538 individuals admitted to Critical Care Units (CCUs) (Ministerio de Sanidad, Consumo y Bienestar Social [Spanish Ministry of Health, Consumer Affairs, and Social Welfare], 2020b). Intensive care units (ICU) saw an increase of up to 300% in the number of critical care patients in hospitals, which posed an unprecedented challenge in terms of healthcare delivery and logistics (Ferrer, 2020). Caring for people affected by COVID-19 has put intense pressure on nursing care (Catton, 2020), especially in the CCU, where, in order to meet this demand, it was necessary to rearrange nurses' shifts, recruit nurses who were working in other services, reinstate retired professionals or hire temporary staff (Lucchini et al., 2020, Jackson et al., 2020, Raurell-Torredà, 2020).

Background

Critical Care Unit (CCU) nurses have faced the challenge of managing the risk of contagion, sometimes with inadequate protective measures (Iserson, 2020), while delivering regular care utilizing personal protective equipment (PPE). Moreover, they have had to adapt to evolving diagnostic protocols and pharmacological treatments and have witnessed the distressing scenario of patients dying alone due to stringent isolation measures. Hospital Emergency Services (HES) have been under immense pressure to deliver care during the most critical moments of the pandemic (Comelli et al., 2020, Estalella et al., 2020), with nurses attending to patients exhibiting severe symptoms and uncertain serological status under constantly updated triage and referral criteria.

Studies conducted in countries previously impacted by outbreaks of severe acute respiratory syndrome (SARS), Middle East Respiratory Syndrome (MERS), or Ebola have highlighted the profound impact of such experiences on healthcare professionals (Chang et al., 2006, Chen et al., 2006, Kim, 2018, Liu and Liehr, 2009). It was observed that levels of anxiety, depression, and sleep deprivation among nurses only began to decrease from the second week of the crisis outbreak

onwards, coinciding with the implementation of rigorous isolation measures, clear procedural guidelines, and the availability of sufficient, high-quality PPE (Chen et al., 2006). The commitment to the profession and the decision to continue working in healthcare post-epidemic were found to be influenced by nurses' perception of the high risk of contagion (Chang et al., 2006). Furthermore, positive outcomes such as professional growth (Kim, 2018) and increased awareness regarding the necessity of preparedness for future crises were also noted (Lam et al., 2019, Liu and Liehr, 2009). In the current COVID-19 pandemic, both CCU and HES nurses have been operating within highly stressful environments and facing immense pressure to deliver care. Therefore, exploring their experiences is crucial for establishing actionable plans aimed at ensuring the sustainability of care management.

The aim of this study is to identify the safety, organizational, decision-making, communication, and psycho-socio-emotional needs perceived by CCU and HES nurses

Methods

A cross-sectional study utilizing an online questionnaire with closed questions was employed,

The study was conducted across public hospitals , categorized as high complexity hospitals (HCHs), intermediate complexity hospitals (ICHs), and low complexity hospitals (LCHs). All nurses providing care to COVID-19 patients and those suspected to have COVID-19 in Critical Care Units (CCUs) and Hospital Emergency Services (HESs), who voluntarily consented to participate, were included in the study population. Nursing professionals in medium-stay hospitals, highly specialized hospitals, or auxiliary hospitals within the public hospital network , as well as those in inpatient care units, were excluded.

A non-probabilistic sampling method was employed, considering participant accessibility due to the absence of an official register of the total number of nurses caring for patients in CCUs and HESs during the crisis. The sample was recruited through contact with middle-level care management staff (CCU and HES supervisors), associate professors, clinical collaborators involved in student clinical placements, and the personal and professional networks of the research team members, facilitated via email and mass text messaging.

Data collection utilized a questionnaire developed by the research team, drawing on references such as the SARS Team Questionnaire (Lee et al., 2005), the Practice Environment Scale of the Nursing Work Index (PES-NWI) (de Pedro-Gómez et al., 2009), the Medical Office Survey on Patient Safety Culture (MOSPSC) (Torijano-Casalengua et al., 2013), and the Granada Burnout Questionnaire applied to nurses (de la Fuente et al., 2015). The questionnaire comprised 31 items rated on a four-point Likert scale, covering dimensions such as safety (10 items), organization (6 items), decision making (4 items), communication and team relationships (5 items), and psycho-socio-emotional needs (6 items). The questionnaire, hosted on the SurveyMonkey platform, was accessible via a link and Quick Response (QR) code and accompanied by an invitation letter. Data were collected between April 1 and 15, 2020, during the peak period of the pandemic in Spain.

Descriptive analysis of the data involved calculating absolute and relative frequencies for all variables, with differences in proportions tested using Student's t-tests. Analyses were conducted at a 95% confidence level ($p \leq 0.05$) using the Stata 12 program.

This study received approval from the Research Ethics Committee . The questionnaire was designed on the SurveyMonkey platform to ensure respondent anonymity. Participants were informed about the study objectives and invited to participate through a cover letter.

Results

A total of 622 questionnaires were returned, of which 65 (12.5%) were eliminated for not meeting the inclusion criteria. The variable "current work unit" was missing from 32 questionnaires. The decision was made not to exclude these questionnaires. As a result, 557 questionnaires were finally analyzed in this study.

Among the participants, 87.4% were women, 69.1% were aged between 26 and 45 years, and 50.2% had over 10 years of professional experience. Seventy-four percent of the nurses held a bachelor's degree, while 24.8% held a postgraduate degree. Concerning the COVID-19 patient care unit, 38.2% worked in Hospital Emergency Services (HESs) and 56% in Critical Care Units (CCUs). Of the nurses in CCUs, 35.3% had less than a month's experience (10.3% of them for less than a week). Nearly 50% of the nurses reported having dependents. Only 11.7% received training in the care of COVID-19 patients, while 87.6% did not. The participation from hospitals was distributed among high complexity hospitals (HCHs) (55.6%), intermediate complexity hospitals (ICHs) (34.8%), and low complexity hospitals (LCHs) (6.2%).

Regarding the questionnaire scores, key variables of interest were described by dimension. In the safety dimension, significant percentages of nurses reported concerns about the risk of infection, fear of infecting others they lived with, and worries about being asymptomatic carriers. In the organizational dimension, many felt there was inadequate staffing and insufficient provision of food and fluids during shifts. In decision-making, a considerable number reported needing to exercise greater autonomy in patient management. Communication issues included middle and senior management not inquiring about team needs and difficulty meeting the psycho-emotional needs of patients' families. Emotional exhaustion was prevalent among respondents, with many experiencing difficulties sleeping.

Analysis of relationships between responses and socio-demographic, occupational, and academic variables revealed significant differences ($p < 0.05$). Nurses with advanced training felt less afraid of making mistakes and reported fewer problems related to rest and sleep. Those with fewer than ten years of experience expressed more frequent concerns about mistakes, autonomy in patient management, and moral suffering from decisions made by others. CCU nurses reported more availability of protective equipment but also more frequently felt asked to perform untrained tasks and experienced organizational problems compared to HES nurses.

Overall, these findings shed light on the nuanced experiences of nurses in different dimensions of care provision during the COVID-19 crisis in Madrid.

Discussion

The average profile of nurses providing support in Critical Care Units (CCUs) and Hospital Emergency Services (HESs) during the outbreak reflects a seasoned nurse with over 10 years of clinical experience, basic training, and often with dependents. This demographic aligns with the predominantly female workforce during this crisis, as observed in other studies (Wenham et al., 2020), where approximately 90% of healthcare workers were female.

Participants expressed subjective concerns regarding safety, particularly regarding the risk of COVID-19 infection and their potential role as asymptomatic carriers. These anxieties may stem from insufficient personal protective equipment (PPE), limited knowledge about the novel coronavirus, and unclear protocols for managing COVID-19 patients. Similar fears were noted in studies on other outbreaks such as MERS, where nurses cited changes in infection control protocols and lack of disease knowledge as primary concerns (Kim, 2018).

Organizational challenges were evident, with reported imbalances between workloads and staffing levels. The increased workload associated with caring for COVID-19 patients, as evidenced by Lucchini et al. (2020), necessitated adjustments in nurse-patient ratios and workload management strategies. Rest and recovery between shifts were compromised, contributing to emotional exhaustion and sleep disturbances among nurses. Effective management strategies, including structured shift schedules and adequate rest periods, are essential for mitigating these challenges (Huang et al., 2020; Raurell-Torredà, 2020).

Communication breakdowns between frontline nurses and managers were apparent, with nurses feeling their voices were unheard and their needs unmet. Effective communication and collaboration are crucial during crises to enhance coping and resilience among healthcare teams (Jun et al., 2020). Middle managers play a pivotal role in implementing care plans and should consider frontline nurses' experiences when managing crisis responses (Estalella et al., 2020).

Nurses reported making more autonomous clinical decisions, particularly in CCUs, reflecting the need for agile decision-making in crisis situations. While this autonomy was viewed positively by experienced nurses, there remains a gap in formal training and recognition of their expertise in Spain. The importance of mentorship and knowledge-sharing among nurses during crises cannot be overstated (Chen et al., 2009).

The inability to adequately address the psycho-socio-emotional needs of patients and families, coupled with challenges in processing their own emotions, contributes to emotional fatigue among nurses. Frontline nurses are at heightened risk of anxiety, depression, insomnia, and psychological stress symptoms, necessitating ongoing mental health support initiatives (Lai et al., 2019; Alharbi et al., 2020). Professionalism, safety, and self-confidence were found to positively influence nurses' willingness to care, underscoring the importance of holistic support mechanisms (Oh et al., 2017; Lee and Kang, 2020).

In conclusion, the findings highlight the multifaceted challenges faced by nurses during the COVID-19 crisis in Madrid. Addressing these challenges requires a comprehensive approach that prioritizes safety, organizational support, effective communication, training, and mental health

care for frontline healthcare workers. Maintaining such initiatives is crucial for preparedness in future outbreaks.

Limitations

This study is subject to several limitations that warrant consideration. Firstly, the questionnaire utilized was adapted from existing instruments without conducting a pilot study to assess item discrimination, which may have impacted the questionnaire's reliability and validity. Secondly, the sampling method relied on intentional recruitment through professional and personal networks, potentially limiting the generalizability of the findings.

Furthermore, the needs identified in this initial phase of the study provide a foundation for further exploration through qualitative methods (phase 2). A deeper understanding of nurses' experiences is essential to elucidate the identified needs and explore coping strategies developed amidst the pandemic, informing urgent healthcare system interventions (Teti et al., 2020).

Conclusions

In response to the COVID-19 pandemic, Critical Care Unit (CCU) and Hospital Emergency Services (HES) nurses expressed significant concerns regarding personal safety, increased workloads, and autonomous decision-making. Communication challenges with management and difficulty meeting patients' psycho-socio-emotional needs were also prominent. These findings underscore the considerable distress experienced by nurses during the pandemic, attributed to workload-resource imbalances and communication gaps with mid-level managers. Consequently, nurses reported high levels of emotional exhaustion and difficulty expressing their emotions, suggesting vulnerability to short- and medium-term psycho-emotional challenges. Further exploration of nurses' experiences is imperative to elucidate additional dimensions not captured in the quantitative analysis.

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