


## RESEARCH ARTICLE

# A qualitative study on a novel peer collaboration care programme during the first COVID-19 outbreak: A SWOT analysis

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## Abstract

The pandemic has forced nursing teams to incorporate new programmes that modify the organization of care and the use of material resources.

**Aims:** The purpose of this study was to describe the perspectives of the nursing team about the strengths/opportunities and weaknesses/threats of a novel peer collaboration care programme during the first outbreak of the pandemic.

**Design:** A qualitative case study with focus groups was conducted in June 2020.

**Methods:** We included 23 participants (seven nurses, seven assistant nursing care technicians and nine charge nurses). Thematic and strengths/opportunities and weaknesses/threats analysis were performed.

**Results:** The strengths of the peer collaboration care programme are the optimization of care and protective equipment. Its weaknesses are that veteran nurses carry the entire burden, and the lack of personal protective equipment makes it difficult to implement the peer collaboration care programme. Finally, misinformation, lack of facilities and time to teach the peer collaboration care programme are considered threats.

**Conclusion:** This strengths/opportunities and weaknesses/threats analysis has led to a comprehensive new project to improve the nursing care.

**Impact:** The incorporation of the peer collaboration care programme contributed to the development of new organizational and management programmes for the COVID-19 pandemic. This study has gave empirical evidence to nurses and care managers to optimize and organize care, work, human and material resources during the pandemic.

## KEYWORDS

COVID-19, nurses, nursing evaluation research, qualitative research, swot analysis

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## 1 | INTRODUCTION

The COVID-19 pandemic caused by severe acute respiratory syndrome coronavirus (SARS-CoV-2) remains a serious issue for global health, given widespread infectivity and a high contagion rate (Ashraf et al., 2021). The widespread transmission of the COVID-19 virus has led to the massive application of infection prevention and control guidelines. Strategies in these guidelines include the use of personal protective equipment (PPE) such as masks, face shields, gloves and gowns; the separation of patients with respiratory infections from others; and stricter cleaning routines (Ashraf et al., 2021; Houghton et al., 2020). Also, front door screening, triage for high-risk groups, access control, universal mask wearing, increasing diagnostic capability for COVID-19, and isolation wards were used (Ashraf et al., 2021; Baek et al., 2020).

Health workers are at the front line of the COVID-19 outbreak response and as such are exposed to hazards that put them at risk of infection. These hazards include pathogen exposure, long working hours, psychological distress, fatigue, occupational burnout, stigma, and physical and psychological violence (Osseiran, 2020). Also, inadequate awareness and precautionary measures, patient overload and staff burnout are considered relevant reasons for health worker infections (Gao et al., 2020; RENAVE, 2020). COVID-19 infections among health workers are common and fatal to the health system. Infections with COVID-19, insufficient measures for infection prevention and control, occupational safety and health, mental health and psychosocial support for health workers result in high rates of absenteeism, which deplete the health workforce (Osseiran, 2020) and even lead to the collapse of the entire services (Ye et al., 2020). Among 315,531 U.S. COVID-19 cases reported to CDC during 12 February to 9 April, 9,282 (19%) were identified among healthcare personnel (CDC COVID-19 Response Team, 2020). In Spain, the last report of the National Epidemiological Surveillance Network, dated 29 May 2020, confirmed 40,961 cases of COVID-19 among healthcare professionals (RENAVE, 2020). Spain had to face a sudden shortage of health workers induced by the COVID-19 pandemic, decreasing the number of nurses in active service (Raurell-Torredà, 2020; RENAVE, 2020). Consequently, the care of isolated patients and the use of PPE were modified based on existing resources (Raurell-Torredà, 2020).

### 1.1 | Background

Numerous initiatives have emerged to improve and optimize recommendations in the fight against the pandemic, in the designated areas of PPE donning and doffing in risk zones, (CDC COVID-19 Response Team, 2020; Yuan et al., 2020) together with restructuring and planning nurses' work and the spaces within the units (Omess et al., 2021; Ye et al., 2020). These strategies can be difficult and time consuming to adhere to in practice. Previous studies (Atay & Cura, 2020; Houghton et al., 2020; Omura et al., 2020) show barriers and facilitators among nurses for the correct use of PPE, and

adherence to safety protocols. Multiple barriers exist such as shortage of PPE, lack of training, failure to update safety protocols, lack of staffing, physical injury from PPE, lack of trust among superiors, beliefs and stereotypes. Investigating the nurses' perspective in applying new ways of organizing care for patients with COVID-19 may identify barriers and facilitators to improve safe care for nurses and patients (Felix et al., 2020; González-Gil et al., 2021).

Qualitative methods are useful for understanding the beliefs, values and motivations that underlie individual health behaviours (Creswell & Poth, 2018). SWOT analysis refers to the assessment and evaluation of strengths (S), weaknesses (W), Opportunity (O), Threats (T), and other factors that influence a specific process or topic. This helps to formulate strategies, plans and countermeasures. This method can be used to identify favourable and unfavourable factors and conditions, solve current problems in a targeted manner, recognize the challenges and obstacles faced and formulate strategic plans to guide scientific decisions (Wang & Wang, 2020). In this study, the SWOT analysis was chosen in contrast to other systems, because it gave a framework to organize and analyse the data. Healthcare organizations, in both the public and private sphere, commonly use the SWOT analytical model to strategically plan for future initiatives and improvement programmes (Harrison, 2016). It gives a robust foundation for a situation analysis of a national health policy, strategy or plan and can inform strategic stakeholders by illuminating both internal and external factors (Rajan, 2016). Furthermore, qualitative studies and SWOT analyses have been used to research the perceptions of health professionals about Counter-COVID-19 pandemic strategies (Ben Abdelaziz et al., 2020; Torri et al., 2020) to describe practice changes in the management of diseases and surgeries (Bhat et al., 2020) to study the prevention and control strategy for the COVID-19 epidemic among different countries, (Wang & Wang, 2020) and the adaptations to health sciences education in response to the pandemic (Longhurst et al., 2020).

## 2 | THE STUDY

### 2.1 | Aims

The aim of this study was to describe the perspectives of a nursing team (nurse, Assistant Nursing Care Technician [ANCT] and charge nurse [CN]) based on the SWOT analysis of a novel peer collaboration care programme (PCCP) against COVID-19, during the first outbreak of the pandemic. This study addressed the following research questions: (a) What was the perspective of a new PCCP against COVID-19 among the nursing team? (b) What was the SWOT of the new PCCP from the perspective of the nursing team.

### 2.2 | Design

A qualitative descriptive case study with embedded units was conducted in June 2020 (Baxter & Jack, 2008; Carpenter & Suto, 2008;

Korstjens & Moser, 2017). A case study may be formed of different units, which help to describe a phenomenon. These units may be different participants, from different contexts and places who are only connected by the phenomenon under study (Baxter & Jack, 2008; Carolan et al., 2016). In this study, the phenomenon under study was the impact of a novel PCCP among different participants, including nurses, ANCT, and CN from different hospitalization wards at the Infanta Leonor University Hospital (ILUH). This study was conducted following the Consolidated Criteria for Reporting Qualitative Research (Tong et al., 2007) and the Standards for Reporting Qualitative Research guidelines (O'Brien et al., 2014).

### 2.3 | Research team and reflexivity

The research team consisted of six members (three women and three men), three were from ILUH (CBL, PAC and MARM), one was from X (JFVG), and two were from the X (DPC, CFdIP). Five members were nurses, and one was a physical therapist. Three members had worked at the ILUH. The remaining authors had no previous contact with any of the participants.

### 2.4 | Context

Currently, a recent study (Jiménez et al., 2020) reported clinical characteristics, as well as outcomes, of 1,549 patients admitted for COVID-19 in the ILUH. The percentage of hospital beds occupied with COVID-19 almost doubled (702/361), with the number of patients in ICU quadrupling its capacity (32/8). Also, 1,393 patients had a fatal outcome at the end of the study period (case fatality ratio: 21.2% (296/1,393).

At ILUH, the nursing team is made up of (a) a nurse, a professional who has completed a nursing degree at the University and who organizes and implements care; (b) an ANCT, a nursing professional who performs the work delegated by the nurse and is responsible for applying basic care such as hygiene, feeding and mobilization of patients; and (c) the CN who is responsible for managing human and material resources, care planning and leadership of the unit (Spanish Government, 2003).

During the pandemic, a new PCCP was applied to isolated COVID-19 patients. The purpose of the PCCP was to control and prevent virus infection and transmission, improve care and optimize care time in each isolated room, and improve the use of PPE (see Table 1).

### 2.5 | Sample/participants

The inclusion criteria were (a) participants aged 18–65 years, (b) belonging to the nursing team (being a nurse, ANCT and/or charge nurse) and (c) having worked during the first wave (1 March to 1 June 2020) of the COVID-19 pandemic at ILUH.

TABLE 1 Peer collaboration care programme

PCCP is based on 1:1 work in pairs: nurse-nurse or nurse-ANCT pairing. The charge nurses organize the human resources of each unit to provide the ratio.

In paired work, one nurse will wear all the PPE, he/she alone enters the room of the isolated patient and remains there until the end of care. This nurse is supported by another nurse who remains outside. The support nurse also assists in the correct donning of PPE. This is informally referred to as "mirroring" assistance.

"Mirroring" refers to the moments when the nurse who is inside the room, through the glass or partition, asks for help from the support nurse, and both are facing each other, as if they were looking into a mirror.

The PCCP was applied to avoid excessive entries and exits in isolated rooms, to avoid the risk of virus spread, and to control "clean" (not exposed to virus) and "dirty" (exposed to virus) areas.

Due to the lack of nurses, the 1:1 ratio was not maintained. Therefore, the support nurse was shared by supporting several nurses at the same time (ratio 1:0.5). If there were not enough nurses, ANCTs were used. This was informally referred to as "shared mirroring".

In PCCP, the care and activities to be performed in the rooms of patients with COVID-19 were concentrated and grouped in order to optimize the exposure time of the nurses and the consumption of PPE (scarce in the first wave of the pandemic). The nurse entering the room was dressed in full PPE (masks, face shields, gloves and gowns) for 4–5 continuous hours.

In the PCCP, face-to-face visits by families to patients were prohibited and communication was carried out online using tablets.

Abbreviations: ANCT, assistant nurse care technician; PCCP, peer collaboration care programme; PPE, personal protective equipment.

A purposeful sampling strategy (not clinical representativeness) was employed (Creswell & Poth, 2018; Moser and Korstjens, 2018) which involved deliberately selecting participants (health care professionals who participated in the PCCP, during the COVID-19 outbreak). In this qualitative study, the researchers included the participants who met the inclusion criteria. Also, the researchers decided by consensus to recruit nurses, ANCTs and the CN of each ILUH unit in order to have a greater breadth and understanding of the phenomenon (Baxter & Jack, 2008; Miles et al., 2013). Sampling and data collection were pursued until the researchers achieved information redundancy, at which point no new information emerged from the data analysis (Moser et al., 2018). In our study, this was achieved after the inclusion of 23 participants (seven nurses, seven ANCTs and nine CNs). There were no dropouts.

### 2.6 | Data collection

Focus groups (FGs) were conducted to examine different perspectives within the same group, acquire understanding of the problems faced by the group and facilitate the identification of values and

norms (Moser et al., 2018). In total, three FGs were conducted. Each FG comprised between seven to nine participants. Proportional numbers of nurse professionals were established in order to avoid having more members in any of these groups, as well as to avoid imposing a single perspective (see Table 2).

The FGs were conducted by a moderator following a uniform structure (Creswell & Poth, 2018; Moser et al., 2018). The moderator posed questions, to which each participant responded, respecting their turn to speak. Subsequently, the moderator posed further questions, based on the issues raised in the discussion to further explore or clarify aspects, either on an individual level or with the group as a whole. The researchers asked and rephrased or repeated these questions as necessary.

Also, questions evolved from the general to the particular, that is, starting with open-ended questions on broad issues (Please, can you share your personal experience with me regarding PCCP during the COVID-19 pandemic?) and subsequently focussing on more specific questions (Carpenter & Suto, 2008; Creswell & Poth, 2018; Moser et al., 2018). Some examples were (1) "Can you describe the organization and your work at the hospital during the COVID-19 outbreak?"; (2) "What was most relevant to you regarding the PCCP?"; (3) "How did the PCCP influence your safety...and that of patients and other professionals?"; (4) "How did the PCC influence the daily care of patients?"; (5) "How did it influence the use of material, safety or human resources?". Additionally, "Please tell me more about that" was also used to enhance the depth of the discussion on a specific topic.

A total of three FGs were undertaken. Overall, 318 min of FGs was recorded, of which 113 corresponded to the nurse FG, 99 to the ANCT focus group and 106 min to the CN focus group. Focus groups were conducted in Spanish and were audio recorded. Permission for these recordings was sought before the recordings began. Subsequently, the FGs were transcribed verbatim (by CBL, PAC and MARM).

## 2.7 | Ethical considerations

The present study was carried out in accordance with the International Code of Medical Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans. The study was approved by the Local Ethics Committee of the

Hospital Universitario X (code: 091-20). All participants gave oral informed consent prior to their inclusion.

## 2.8 | Data analysis

The full verbatim transcripts of each FG, the researchers' field notes and their descriptions were collated to perform a qualitative analysis (Miles et al., 2013). Four researchers (CBL, PAC, DPC and JFVG) undertook the analysis of the FG data. A thematic analysis was performed (Miles et al., 2013).

The thematic analysis consisted of identifying the most descriptive content to obtain codes, and subsequently reduce and identify the most coded groups (categories). Accordingly, categories were formed (Miles et al., 2013). This thematic analysis process was performed separately to the focus groups. Subsequently, joint meetings were held to combine the results of the analysis and to represent the participants' perspective (Miles et al., 2013). In cases of potential discrepancies, theme identification was based on establishing a consensus between the research team members. Thereafter, the SWOT analysis was performed (Wang & Wang, 2020).

The SWOT strategic planning analysis was obtained from the results of the thematic analyses of the FGs. Statements of each study category were summarized in SWOT categories. Strengths were defined as advantages associated with the programme's internal organization. Weaknesses were defined as limitations associated with the programme's internal organization that might hinder the programme's success. Opportunities were defined as external environmental factors that could enhance the success of the transition programme.

Finally, threats were defined as any environmental factor that could act as a barrier to the transition programme. No qualitative software was used to analyse the data.

## 2.9 | Rigor

We used criteria by Guba and Lincoln for establishing trustworthiness of the data by reviewing issues concerning data credibility, transferability, dependability and confirmability (Creswell & Poth, 2018; Korstjens & Moser, 2018). Table 3 summarizes the procedures used to enhance trustworthiness and credibility.

TABLE 2 Focus groups and participants

| Data collection tool | Participants                    | Female/male | Mean age (SD)       | Mean years of experience at ILUH (SD) |
|----------------------|---------------------------------|-------------|---------------------|---------------------------------------|
| Focus group 1        | N = 7 nurses                    | 6/1         | 33.85 ( $\pm$ 6.69) | 9 $\pm$ 2.82                          |
| Focus group 2        | N = 7 ANCT                      | 4/3         | 47 ( $\pm$ 10.32)   | 6.57 ( $\pm$ 3.30)                    |
| Focus group 3        | N = 9 charge nurse <sup>a</sup> | 7/2         | 42.33( $\pm$ 5.31)  | 10.55 $\pm$ 2.92                      |

Abbreviations: ANCT, assistant nursing care technician; ILUH, Infanta Leonor University Hospital; SD, standard deviation.

<sup>a</sup>We included one nurse, one ANCT and one charge nurse for each unit/ward of the hospital. Also, we included two charge nurses without ward/unit, general nursing supervisor and material resources charge nurses.

**TABLE 3** Criteria and techniques applied to establish trustworthiness

| Criteria        | Techniques performed and application procedures  |
|-----------------|--|
| Credibility     | Investigator triangulation: each focus group was analysed by four researchers. Thereafter, team meetings were performed in which the analyses were compared, and categories and themes were identified.<br>Participant triangulation: the study included participants belonging to different units/wards from ILUH. Thus, multiple perspectives were obtained with a common link (the perspectives of the nursing team applying PCCP during the COVID-19 pandemic).<br>Triangulation of data collection methods: focus groups were conducted, and researcher field notes were kept.<br>Participant validation: this consisted of asking the participants to confirm the data obtained at the stages of data collection. None provided additional comments.<br>Researcher reflexivity was encouraged via the previous positioning, performance of reflexive reports and by describing the rationale behind the study. |
| Transferability | In-depth descriptions of the study performed, providing details of the characteristics of researchers, participants, contexts, sampling strategies and the data collection and analysis procedures.  |
| Dependability   | Audit by an external researcher: an external researcher assessed the study research protocol, focussing on aspects concerning the methods applied and study design. Also, the external researcher specifically checked the description of the major themes, participants' quotations, quotations' identification and themes' descriptions.   |
| Confirmability  | Investigator triangulation, participant triangulation and data collection triangulation.<br>Researcher reflexivity was encouraged via the performance of reflexive reports and by describing the rationale behind the study.   |

Abbreviations: ILUH, Infanta Leonor University Hospital; PCCP, peer collaboration care programme.

### 3 | FINDINGS

The study took place in June 2020 (1 month after the first COVID-19 pandemic outbreak) and lasted 1 month. Twenty-three participants were included in the study (17 female) with a mean age of 41.17 years ( $\pm 8.93$ ) and 8.86 years ( $\pm 3.33$ ) of mean hospital stay. The thematic analysis shows how nurses, ANCTs and CNs display differences about the PCCP, care organization and the use of PPE.

#### 3.1 | The PCCP from the nurses' perspective

The organization of care was determined by the professional experience of the pairs, the workload and the severity of the patients. Thus, in the application of the PCCP, the pairs were formed by veteran and novice nurses. The PCCP included other professionals such as physical therapists and orderlies when nurses were absent.

Within the pair, the responsibility and guidance of care fell on the senior nurse. The senior nurse also had the greatest workload and fatigue, as he/she was the person who entered the isolated rooms with the full PPE. For this reason, in some units, one of the nurses was exchanged midway during the workday. There were peaks of admissions that caused increases in the workload, where the PCCP was applied with greater difficulty.

The application of the PCCP was also influenced by the presence of PPE. The lack of PPE made it difficult for nurses to frequently visit COVID-19 patients in their rooms as often as they wished. This lack of PPE was a constant concern among nurses. Paradoxically, nurses felt safer in units with patients who had a confirmed diagnosis of COVID-19 because they had more PPE. The participants reported that the updated information and follow-up of professionals with symptoms on behalf of the occupational risk prevention service did not meet their expectations; for example, some members of the nursing team with symptoms were sent to work without any screening test. The nurses felt that they needed more support from their hierarchical superiors; however, as this was lacking, the feelings of collaboration and companionship among nurses and other professionals were reinforced.

#### 3.2 | The PCCP from the perspective of the ANCTs

During the PCCP, the new staff members were inexperienced, which led to reduced communication and lack of trust among team members. Moreover, the PCCP forced all the care procedures of an isolated patient to be concentrated at the same time, resulting in slower work, and long and exhausting rounds. Paradoxically, the patients were monitored less frequently, because once they had been

attended to, the rest of the patients were attended to until the round was over.

Everything had to be continuously reorganized to adapt to changes. The PCCP was not applied equally; it was modified according to the needs of the units. There was a feeling of lack of control and organization. The ANCTs believed that greater organization was needed about the patient admissions, correct identification of patients with a positive diagnosis of COVID, identification of clean and contaminated areas, unification of criteria about medical and family visits, and the use of PPE in families.

There was insufficient information on PPE, and this information was contradictory, of low quality or insufficient. As a result, on certain occasions, patients' rooms were not entered due to the lack of PPE available for the staff and feelings of insecurity.

### 3.3 | The PCCP from the perspective of the CNs

The application of the PCCP was conditioned by the trust in the expertise within the pair. This meant that often the veteran nurse always assumed responsibility for care and the PCCP. The supervisors emphasized the need to organize the pairs so that two novice nurses did not coincide. The PCCP was strictly applied among novice nurses, while with veteran nurses the "mirroring system" was more flexible, enabling rotations between nurses during the day. Progressively, nursing teams with experience in the PCCP supported the new units where it was being implemented.

The application of the PCCP led to more professionals per shift, which made it necessary to suspend leave, hire new professionals and transfer nurses from other units. Due to the lack of nurses, nursing students in their last year of nursing were hired under a relief contract for health workers. The lack of experience and inadequate profile was compensated by the veteran and experienced ACNTs, who were decisive in applying the PCCP and care, despite the fact that some newly incorporated nurses undervalued them.

The workload and lack of staff caused the prioritization of care, suspending scheduled activities. There were situations of lack of control due to the lack of homogeneous criteria to organize the areas of care, clean and contaminated areas, and to identify and assign an area for suspicious, positive and negative patients.

The availability of PPE determined the frequency of patient care. The shortage of PPE forced the CNs to control its distribution, and to assign those responsible for the control and proper use of PPE in each shift, which led to further difficulties in relation with other professionals such as physicians. Furthermore, they perceived that the information given by the Occupational Risk Prevention Service was contradictory.

From these perspectives, strengths, weaknesses, threats and opportunities in the application of PCCP were identified. After the SWOT analysis, two areas for improvement were identified in relation to the application and organization of the PCCP, and about the acquisition, distribution and proper use of PPE (see Table 4).

About the application of the PCCP, the authors propose (a) increasing the number of nurses and ANCTs, (b) adapting the number of nurses according to their seniority and the type of unit, (c) unifying the PCCP application protocols in all units, according to their characteristics, (d) reinforcing PCCP training for future pandemics and (e) improving the transmission of communication and the quality of information to the professionals.

About the PPE, the authors propose (a) to unify the criteria for distribution and use among professionals and in the different units, (b) to improve training and information on the use of PPE from the occupational risk prevention service, (c) to adapt the quantity and quality of PPE for professionals and patients, (d) to improve the identification of clean and contaminated areas and (e) to improve patient identification (suspicion, confirmation COVID-19).

## 4 | DISCUSSION

This study presents the SWOT analysis of the PCCP, highlighting the barriers encountered when applying the PCCP, such as shortage of staff, incorporation of inexperience, lack of PPE, burnout of the nurse in charge, and difficulties in correctly identifying patients with a positive diagnosis of COVID and identifying clean and contaminated areas.

Our results coincide with previous studies that show the nurses' concern to optimize the time dedicated to caring for patients with COVID-19. Thus, there is a need to limit exposure to the virus while maintaining quality care (Gao et al., 2020; Ye et al., 2020; Yuan et al., 2020). Omess et al. (2021) reported that they applied a novel Warm Zone Model during the COVID-19 pandemic. This model allowed team members to reduce the times they donned and doffed PPE per shift while maintaining or increasing the times they entered and exited patients' rooms. This model improved workflow and teamwork while maintaining staff members' personal safety.

In addition, together with the optimization of time, the optimization of the PPE is also important, due to the limited supply available during the first wave of the pandemic. The previously mentioned "warm zone model" (Omess et al., 2021) reported how staff members wore the same mask, eye protection and gown while moving between the rooms of patients who had tested positive for COVID-19. Gao et al. (2020) and Raurell-Torredà (2020) described how in ICUs and isolation units, the nurses' work was reorganized to reduce PPE expenditure, with maximum care activities grouped together and the CN placed in charge of direct control of PPE allocation.

The pandemic has forced the need to rethink nursing care, along with workflow, protocols, human resources, space use and supplies (Nadarajan et al., 2020). These authors reported how the evolution of the pandemic (peak-plateau-recovery and steady-state stages) has determined the organization, distribution and use of resources and space. As an example, the organization of nursing care and use of PPE should be different in inpatient ward units with different

TABLE 4 SWOT analysis of peer collaboration care programme

| Strengths   | Weaknesses   |
|---|--|
| <ul style="list-style-type: none"> <li>• It enables the ability to compensate for the inexperience of the members of the pairs.</li> <li>• Adaptation of care to the needs of the unit.</li> <li>• Contributes to the safety of professionals and patients.</li> <li>• It enables the clear identification of contaminated areas.</li> <li>• After its application, it reinforces teamwork, communication between professionals and motivation within the unit.</li> </ul>                      | <ul style="list-style-type: none"> <li>• At first, the pairs were unbalanced based on experience.</li> <li>• Veteran nurses may experience burnout, and novice nurses may experience fear and insecurity.</li> <li>• A new work system can lead to lack of control and disorganization.</li> <li>• It is affected by PPE, understaffing and workloads.</li> <li>• Not applied uniformly in all units equally.</li> </ul>   |
| Opportunities   | Threats  |
| <ul style="list-style-type: none"> <li>• Recognition of the experience of veteran nurses and ANCTs.</li> <li>• Applying and learning about new work systems.</li> <li>• Encouragement of teamwork.</li> <li>• Improvements in care with paired work and the support of new professionals.</li> <li>• Optimization of work with the incorporation of technical means.</li> <li>• Identification of nurses with the ability to lead, take responsibility and support the charge nurse.</li> </ul> | <ul style="list-style-type: none"> <li>• Concentration of care in rounds may impact on the quality of care and attention.</li> <li>• The PCCP requires adequate isolation spaces and facilities.</li> <li>• Lack of information, shortage and poor quality of protective equipment.</li> <li>• Lack of experience of newly hired staff.</li> <li>• Lack of time to teach and train new COVID units regarding the PCCP.</li> <li>• Lack of uniformity in the criteria for the identification of risk and safe areas, and for the identification and allocation of patients (suspected, confirmed virus).</li> </ul> |

Abbreviations: PCCP, peer collaboration care programme; PPE, personal protective equipment.

levels of risk, that is, low risk wards, intermediate risk cohort wards and high-risk isolation wards. Therefore, the measures used should be highly flexible.

When new respiratory infectious diseases become widespread, such as during the COVID-19 pandemic, healthcare workers' adherence to infection prevention and control guidelines becomes even more important (Houghton et al., 2020).

Our results are consistent with previous studies (Galehdar et al., 2020; Houghton et al., 2020; Liu et al., 2020a, 2020b; Tan et al., 2020) that describe how during the pandemic, nurses and other health professionals have worked under adverse conditions such as the lack of PPE, understaffing, exhausting work shifts, exposure to risks, lack of information and contagion of numerous health professionals. Houghton et al. (2020) reported that, as a result of all these conditions, healthcare professionals may reject and be skeptical of new protocols and organizational changes, along with mistrusting hierarchical superiors, causing a decrease in adherence to infection prevention and control guidelines.

Our study highlights the shortage of experienced qualified nurses in the face of the pandemic. Prior to the pandemic, there was a shortage of nurses in Spain compared to Europe. While in Europe the ratio of nurses per 1,000 inhabitants was 8.52, in Spain it was 5.32 (Spanish Institute for Nursing Research, 2020). In 2018, Spain presented a ratio of 587 practicing nurses per 100,000 inhabitants, compared to France, with a ratio of 1079, 1322 in Germany, 1288 in Ireland and 1079 in France (Eurostat, 2021). This forced the Spanish government, during the first wave of the pandemic, to allow the hiring of students in their senior year of nursing and medicine under a special relief contract (Spanish Government, 2020). Recently, the experience of these students has been documented (Casafont et al., 2020; Collado-Boira et al., 2020) describing their role in the

healthcare team, their adaptation and learning, highlighting the presence of fear, uncertainty, loneliness and lack of support.

The incorporation of novice nurses and their transition to qualified nurses is not an easy process. García-Martin et al. (2020) describe how during the pandemic the fear of infecting the family, of being the cause of the spread of the virus to colleagues and within the hospital, of not possessing enough knowledge and skills, and not being able to control their emotions was heightened.

Finally, the authors believe that the incorporation of new programmes against COVID-19 can facilitate the incorporation of a new role for nurses, while increasing their competencies for leading care teams (Abuhammad et al., 2020; Morse & Warshawsky, 2021; Stucky et al., 2020).

The main strength of this study is the SWOT analysis about a new PCCP, presenting first-time accounts that can influence patient care. To the best of the authors' knowledge, this is one of the few studies that describes how novel management initiatives were applied in patients with COVID-19 and nursing organization care (Chen et al., 2020).

#### 4.1 | Limitations

This qualitative study has some limitations. The first is that the results cannot be extrapolated; however, they can be applied to contexts with similar characteristics. The results presented describe the organization of the work of one hospital in the face of the first wave of the COVID-19 pandemic, in a context where most other hospitals were able to use other systems of work and organization. This limitation has been controlled via the exhaustive description of the context and methods, thus enabling other researchers to

apply these methods in other contexts (i.e., ensuring transferability) (Carpenter & Suto, 2008). Second, the present study did not describe the perspective of other professionals who participated in PCCP (physicians). Studies incorporating their perspective would be necessary. Finally, the SWOT system used in this study was used to describe a complex reality; it was not used to identify causal relationships. An analytical approach would allow the establishment of cause-and-effect relationships to improve the model of care during the pandemic. Strategy scholars have suggested combining the SWOT analysis to the Balanced Score Card and/or the Quality Function Deployment into a single tool for analysis (Sammut-Bonnici & Galea, 2014). Despite its limitations, it is generally accepted that SWOT remains a useful tool to review and identify strengths and opportunities of an institution (Sammut-Bonnici & Galea, 2014).

## 5 | CONCLUSIONS

The incorporation of PCCP in the ILUH has helped optimize and organize care, work, human resources and use of PPE during the pandemic. Nonetheless, there are weaknesses and threats that should be considered to improve the forthcoming PCCP proposals. Including the entire nursing team in the development of new organizational and management programmes is essential to be flexible and adaptable to the COVID-19 pandemic. Describing and analyzing each team member's perspective can help identify unknown opportunities and threats. The results of this study may help managers of healthcare institutions to make decisions for the organization of care. Moreover, the application of PCCP would help to protocolize patient care and health care, helping to improve the quality of care of hospitalized patients with COVID-19. In future research, it is necessary to describe the experience of other professionals who have participated in PCCP, to incorporate the barriers and difficulties observed, and to establish programmes to improve PCCP, in order to improve and validate this new organizational model and facilitate its implementation in other centres.

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## CONFLICT OF INTEREST

The authors declare that they have no competing interests.

## AUTHOR CONTRIBUTIONS

Carmen Baez-Leon made substantial contributions to the conception, to the design of the work, to the acquisition and analysis. Also, she substantively revised it and approved the submitted version. Cesar Fernandez-de-las-Peñas made substantial contributions to the analysis, interpretation of data, drafted the work and substantively revised it. Also, he approved the submitted version. Domingo

Palacios-Ceña made substantial contributions to the design of the work, to the analysis, interpretation of data, drafted the work and substantively revised it. Also, he approved the submitted version. Juan Francisco Velarde-García made substantial contributions to the analysis, interpretation of data, drafted the work and substantively revised it. Also, he approved the submitted version. M<sup>a</sup> Ángeles Rodríguez-Martínez made substantial contributions to the conception, to the design of the work, to the acquisition and analysis. Also, she substantively revised it and approved the submitted version. Patricia Arribas-Cobo made substantial contributions to the conception, to the design of the work, to the acquisition and analysis. Also, she substantively revised it and approved the submitted version. All authors read and approved the final manuscript.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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