





ORIGINAL ARTICLE

How did home care nurses support COVID-19 patients in Japan? A qualitative study

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Abstract

Aim: Home care nurses support patients with COVID-19 with mild to moderate symptoms at home due to the lack of community-based support. Little is known about how nurses initiated and maintained support for patients with COVID-19. This study explored the experiences of home care nurses in supporting patients with COVID-19 at home.

Methods: Using snowball sampling, 21 home care nurses participated in semi-structured interviews conducted either in person or online between September 2021 and February 2023. A qualitative study using a grounded theory approach was conducted.

Results: Home care nurses faced a situation where “suffering patients are overflowing” due to inadequate support from public health centers and designated hospitals. Despite their anxiety, they acted as a “flexible safety net by quickly compensating for uncertain support systems” for patients, families, and local health workers. They “built tentative support systems immediately” and “updated tentative support systems, own knowledge, skills, and mindset.” Home care nurses also “rushed to patient/family” to provide timely support and “avoided preventable death.”

Conclusions: Home care nurses act as a flexible safety net, preventing patient deaths by quickly compensating for uncertain support systems before and after initiating care. Their efforts complemented the inadequacies of traditional infectious disease control systems, typically managed by public health centers. Strengthening secondary and tertiary prevention systems is essential for home

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care nurses to save lives while delivering individualized care during the COVID-19 pandemic.

KEYWORDS

community health system, COVID-19 pandemic, home care nurse, infection control, public health center

1 | INTRODUCTION

Infectious disease pandemics are hazardous events that lead to disasters and overwhelm medical services (World Health Organization, 2019). By September 2021, the COVID-19 pandemic had resulted in approximately 231 million cases and 4.7 million deaths (World Health Organization, 2023). Home-based care for infected patients has become crucial in saving lives within communities. Trained health workers, including nurses, support and monitor the health status of patients in home isolation (World Health Organization, 2020c). However, many patients with COVID-19 (COVID-19 patients) who were not hospitalized received limited support in their homes, and some died at home, which became a social concern (Machida & Wada, 2022).

Nurses must be prepared to respond to disasters. Disaster nursing focuses on supporting each patient by prioritizing healthcare needs and available resources (Firouzkouhi et al., 2021; International Council of Nurses, 2022). Nurses' experiences during different types of disasters vary (Su et al., 2022), and few studies have examined infectious disease outbreaks prior to the COVID-19 pandemic (Lee et al., 2020; Liu & Liehr, 2009; Shih et al., 2007). Nurses are tasked with the mission and responsibility of caring for COVID-19 inpatients despite facing physical and emotional strain, new hospital systems, and a lack of adequate assistance and resources (Almomani et al., 2022; Chen et al., 2021; Heydarikhayat et al., 2022; Jia et al., 2021; Joo & Liu, 2021). Additionally, home care nurses (HCNs) faced delays in supporting COVID-19 patients at home because the tasks of public health nurses (PHNs) were not smoothly transferred to them. PHNs working in public health centers (PHCs) are responsible for infection control, treatment recommendations, work restrictions, epidemiological investigations, hospitalization coordination, and monitoring of COVID-19 patients' health conditions, in accordance with the Act on the Prevention of Infectious Diseases and Medical Care for Patients with Infectious Diseases (Ministry of Health, Labour and Welfare & Ministry of Justice, 1998). PHNs recognized COVID-19 as a disaster, but the lack of internal understanding and limited time available made it challenging for them to seek help from either within or outside their organization (Honda et al., 2022; Miyazaki

et al., 2023). Therefore, due to increasing COVID-19 cases in Japan, hospitals and PHCs could no longer provide adequate support to each patient (Machida & Wada, 2022). Previous studies have not focused on addressing the lack of PHN support and the unmet healthcare needs of many COVID-19 patients. However, HCNs likely needed to reform the support system quickly based on the Infectious Disease Control Act and clarify their roles to support COVID-19 patients who received insufficient care.

HCNs must support COVID-19 patients in the community instead of relying solely on hospitals and PHCs. In Japan, HCNs provide care in patients' homes under the national medical and long-term care insurance systems (Japan Visiting Nursing Foundation, 2021). They typically visit patients based on home care instruction forms authorized by physicians (Japan Visiting Nursing Foundation, 2021), but no formal system allows PHCs to request these visits. Most HCN patients primarily have non-infectious conditions, such as cardiovascular, respiratory, or cerebrovascular diseases, rather than specific infectious diseases (Ministry of Health, Labour and Welfare & Ministry of Justice, 1998; Otsuki et al., 2020). For patients at risk of infection, including those with urinary tract infections and pneumonia, HCNs assess risks, implement infection control measures, and primarily educate patients and their families on prevention (Dowding et al., 2020). To our knowledge, no studies have investigated how HCNs began supporting COVID-19 patients or their actual experiences with care delivery. Identifying HCNs' experiences and insights into supporting COVID-19 patients will help them prepare for future pandemics. Therefore, this study aimed to explore the experiences of HCNs supporting COVID-19 patients.

2 | METHODS

2.1 | Definitions

2.1.1 | Patients

Among COVID-19 patients, those recuperating at home include individuals living in elderly residential facilities that provide long-term care services (World Health Organization, 2020b, 2020c).

2.1.2 | HCNs' support for patients

HCNs support COVID-19 patients through telephone calls and home visits. Their support includes monitoring health status, providing medical and nursing care, and offering assistance with daily living (World Health Organization, 2020c).

2.2 | Study design

We used a qualitative study using a grounded theory approach (Corbin & Strauss, 2015). It is “a rigorous research method in which researchers construct conceptual frameworks or theories by building inductive theoretical analyses from data and subsequently checking their theoretical interpretations” (Charmaz, 2014). This approach is well-suited to this study as its purpose is to obtain in-depth descriptions of how HCNs experience supporting COVID-19 patients in Japan from the perspective of those providing care through an interactive process.

2.3 | Participants

The participants were 21 HCNs. Participants were recruited through the managers of home care nursing agencies and were contacted via connections with the home care nursing study's researcher. First, we approached the managers and explained the purpose and details of the study via email or telephone. After obtaining their consent, we conducted snowball sampling by asking the managers of the first agency to invite HCNs who met this study's criterion to participate. The inclusion criterion was providing direct support to patients, while the exclusion criterion was the lack of direct patient support. Based on the interim data analysis from participants at the first agency, we considered the characteristics of patients, home care nursing agencies, and individual participants necessary to define the categories. Therefore, beginning with the second agency, we followed theoretical sampling and asked the managers to invite HCNs who could represent these characteristics to participate. We obtained contact information of consenting HCNs through their managers, explained the purpose and details of the study to them, and scheduled interview dates and methods. To prevent COVID-19 transmission and accommodate the HCNs' busy schedules, each participant was interviewed only once. They could choose between in-person or online interviews at a convenient location.

2.4 | Data collection

Before the interviews, we collected the participants' demographics (e.g., age, sex, and years of nursing experience) and their agencies (e.g., agency founder and number of nursing staff). Patient demographics were obtained through interviews. We asked participants about their experiences supporting patients through semi-structured interviews. The interview guide included three main questions: (1) How did you feel about your agency initiating visits (supports) for COVID-19 patients? (2) How involved were you in the agency's implementation of visits (supports) for COVID-19 patients? (3) Did you face any challenges or barriers in conducting visits (providing support) for COVID-19 patients? If so, how did you or your agency address it? Data collection took place between September 2021 and February 2023. We recorded all interviews and field notes. The mean interview duration was 63.9 min (range: 31–97 min). To accommodate the first agency's busy schedule and limited time, the first author and three researchers conducted the interviews simultaneously. As the other four agencies were in the theoretical sampling stage, the first author, primarily responsible for the analysis, conducted all interviews. Additionally, the first author wrote self-reflective memos to ensure the credibility of the interviews and minimize bias and preconceptions. No new concepts emerged after the 16th participant interview, so data collection was concluded with 21 participants.

2.5 | Data analysis

The interview data were analyzed using constant comparisons (Corbin & Strauss, 2015). First, the first author and a transcription company transcribed all the interview data for open coding. We read the data multiple times and chronologically organized each participant's support for patients. At this time, we proceeded with line-by-line coding, constantly asking, “How did the HCN feel,” “What did the HCN do,” and “What is the meaning of the action in the HCN.” During the analysis, we used field notes regarding the situations and body language during the interviews to capture participants' emotions. Next, we interpreted the relationships between the concepts by capturing their conditions, actions, and consequences using axial coding. For example, when concepts had similar properties and dimensions, we examined whether they had similar processes and consequences. Thus, we explored the relationships between concepts and confirmed data saturation without discovering new patterns of experience. Finally, we selected the core categories of concepts and developed a conceptual model and storyline.

2.6 | Ensuring the quality of analysis

To ensure the quality of this study, we followed Charmaz's framework of credibility, originality, resonance, and usefulness (Charmaz, 2014). We utilized supervision from researchers experienced in qualitative studies and conducted member checking with two participants. Considering the busy workload of home care nursing agencies supporting patients, we decided on two participants: a manager and a staff member. They had experience in all categories under investigation, which allowed them to represent the participants. In addition, we sought reviews and feedback from nursing researchers and graduate students with experience in qualitative research. Based on their comments, we refined each concept.

2.7 | Ethical consideration

This study was approved by the Ethics Board of The University of Tokyo (No. 2020138NI-(1) - (4)). We explained the study's purpose and procedures to all participants and their managers, including the protection of privacy and the voluntary nature of participation. Written informed consent was obtained from all participants before the interviews commenced.

3 | RESULTS

We interviewed participants from five home care nursing agencies. While the agency location was not restricted, we ultimately included agencies from Tokyo, Chiba, and Osaka prefectures. Three agencies (60.0%) were incorporated as associations or foundations. Of the 21 participants, three were male (Table 1). The average number of years of nursing experience was 17.3 years (SD = 10.0), and eight participants (38.1%) held management positions that also supported patients. The total number of patients supported by HCNs was 38 (Table 2). Twenty-five patients (65.8%) were not clients of the agencies to which the HCNs belonged prior to their infection. PHCs requested that HCNs support 22 patients (57.9%).

3.1 | Core category: Becoming a flexible safety net by quickly compensating for uncertain support systems

The HCNs faced the challenging reality of “suffering patients are overflowing” (Figure 1). Due to the rapid increase in patient numbers, PHCs and designated hospitals became dysfunctional. As nursing professionals,

TABLE 1 Characteristics of participants and home care nursing agencies.

Categories	<i>n</i> (%) or mean (SD)
Home care nursing agencies (<i>n</i> = 5)	
Location	
Tokyo	3 (60.0)
Chiba	1 (20.0)
Osaka	1 (20.0)
Establisher	
Associations/foundations	3 (60.0)
For-profit	1 (20.0)
Medical corporation	1 (20.0)
Number of clients (as of October 2021)	238.6 (81.5)
Time to start support for patients with COVID-19	
Third wave onwards October 2020–February 2021	1 (20.0)
Fifth wave onwards July 2021–October 2021	4 (80.0)
Participants (<i>n</i> = 21)	
Age (years)	
20–29	3 (14.3)
30–39	4 (19.0)
40–49	8 (38.1)
50–59	5 (23.8)
60–69	1 (4.8)
Sex	
Male	3 (14.3)
Female	18 (85.7)
Position	
Manager	8 (38.1)
Staff	13 (61.9)
Years of nurse experience	17.3 (10.0)
Year of experience at the current agency	9.5 (6.7)
Qualifications (multiple responses)	
Registered nurse	21 (100.0)
Public health nurse	7 (33.3)
Care manager	5 (23.8)
Others	2 (9.5)

HCNs felt compelled to support patients with inadequate community support. They were “becoming a flexible safety net by quickly compensating for uncertain support systems” through the following four categories: “Building tentative support systems immediately,” “Updating tentative support systems, own knowledge,

TABLE 2 Characteristics of COVID-19 patients ($n = 38$).

Characteristics	Statics, n (%)
Age (years)	
0–69	8 (21.1)
70 over	13 (34.2)
Unidentified	17 (44.7)
Sex	
Male	5 (13.2)
Female	13 (34.2)
Unidentified	20 (52.6)
Cohabitant family structure	
Living with family	9 (23.7)
Alone	15 (39.5)
Unidentified	14 (36.8)
Type of residence	
Home	32 (84.2)
Residential facilities	4 (10.5)
Unidentified	2 (5.3)
Those who have been clients of the agency to which the home care nurse belongs since before the infection	
Yes	13 (34.2)
No	25 (65.8)
The person directing or requesting patient's support	
Physician	16 (42.1)
Public health center	17 (44.7)
Both	5 (13.2)

skills, and mindset,” “Rushing to patient/family,” and “Avoiding preventable death.” The HCNs moved back and forth between subcategories/categories connected by bi-directional arrows for support. They delivered assistance based on these categories, regardless of the severity of the patient's symptoms.

3.2 | Building tentative support systems immediately

Through their daily practices, news monitoring, and social networking services, HCNs recognized an increasing number of patients in the community. At the beginning of the pandemic, there was no system in place for PHCs to order patient care or share information about infected patients with HCNs. As a result, HCNs decided to quickly develop a support system in collaboration with local health workers to assist patients who were not receiving adequate community support. This effort was primarily led by HCNs in management positions.

3.2.1 | Grabbing PHC's SOS

Recognizing the reality faced by local PHCs, HCNs sought to create an opportunity to support patients through two ways. First, they identified the spontaneous SOS signals from PHCs through networks of medical and nursing associations. Second, due to their overwhelming workload, some PHCs often hesitated to openly acknowledge their inability to support patients in the community. HCNs reached out to PHNs affiliated with PHCs, inquired about their concerns, and proposed offering support. The PHNs' need for HCN assistance led to the establishment of a new support system.

I was emailing the PHN, asking, “How are things going (at your PHC) now?” and “What kind of issues are you facing?” [...] Then the PHN confided, “PHC alone cannot handle the support for patients, and we'd like physician assistance as well. In some cases, we may also need to involve HCNs. (ID2-001)

3.2.2 | Developing minimum requirements with local health workers to start support

HCNs worked to prepare for the initiation of patient care and developed three minimum requirements in three stages. First, they built relationships with local health workers, including PHCs, related departments within the local government to which the PHC belonged, and medical, nursing, and pharmacist associations. If PHCs had weak connections with local health workers, the HCNs took on a leadership role, helping to integrate them into the community health network. If PHCs were already connected to local health workers and could organize meetings independently, HCNs attended these meetings as supporters. Second, HCNs and local health workers emphasized mutual awareness and assistance. They shared specific problems and expressed a collective desire to support their patients. Third, the HCNs and local health workers immediately established tentative formats for initiating patient support, including signed contracts, guidelines, manuals, and assigned roles. Once the tentative support system was in place, HCNs were ready to receive orders from PHCs and physicians.

The local government (PHCs and related departments) established the specifications, and we agreed on the charges and other administrative matters within a week. [...] So, we said, “Let us start this (support system) now, even though we may change it later.” (ID3-001)

Becoming a flexible safety net by quickly compensating for uncertain support systems

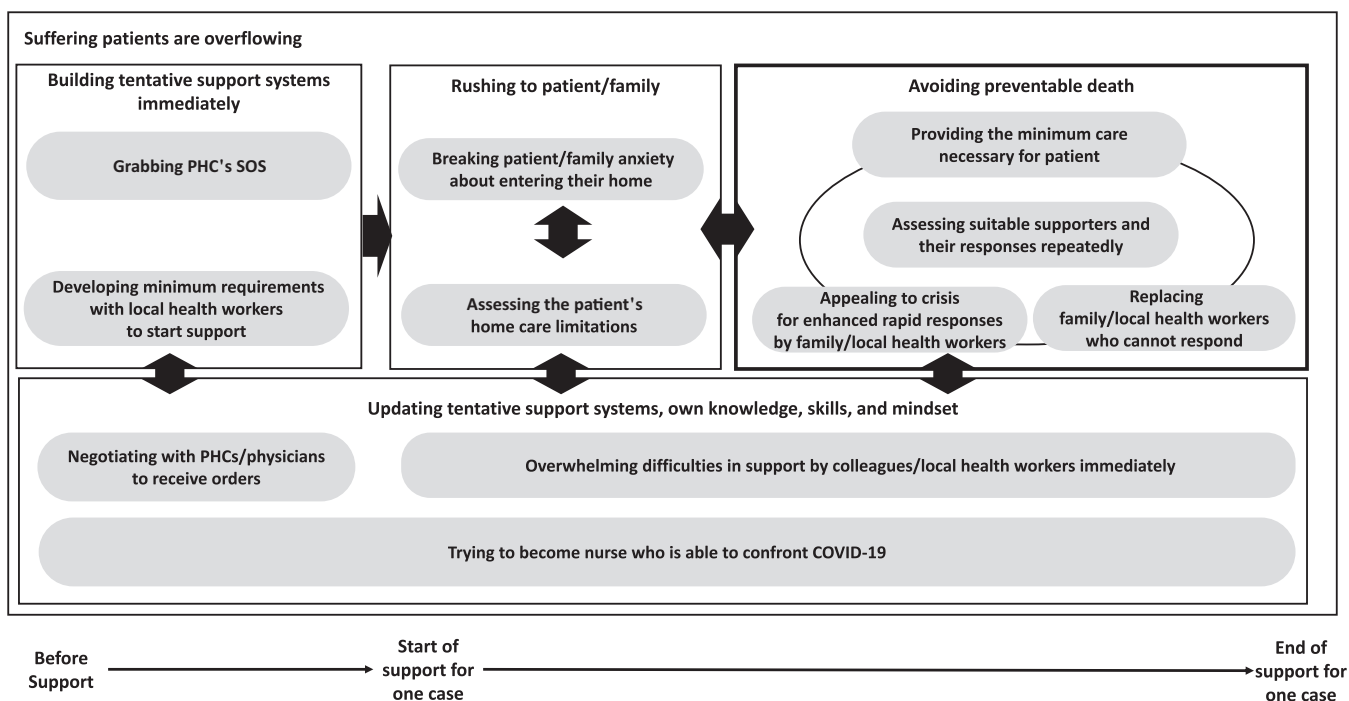


FIGURE 1 Framework of this study: Becoming a flexible safety net by quickly compensating for uncertain support system. PHC, public health center.

3.3 | Updating tentative support systems, own knowledge, skills, and mindset

The readiness of the support systems and HCNs was inadequate due to the sudden need for patient support. The HCNs sought to initiate and maintain effective support by quickly updating their knowledge, skills, mindset, and support systems.

3.3.1 | Negotiating with PHCs/physicians to receive orders

Even after developing support systems, some PHCs and physicians could not order support from HCNs. The HCNs exhibited three negotiation patterns toward a system that could receive orders. First, recognizing that PHCs were busy with their work, HCNs suggested using ICT to share patient information more efficiently. Second, because the PHCs were confused about organizing patient information, HCNs spent time helping them organize accurate patient data for ordering. Third, local physicians unfamiliar with standard home care practices did not understand the necessary orders. The HCNs received orders by emphasizing the need for visits and stating that they could support patients if they received those orders.

I told (the physician who did not give orders) that “since patients’ regular helper services have been discontinued, our daily lining support and condition monitoring is vital now, so as long as we have your orders, we will visit daily.” (ID5-004)

3.3.2 | Overwhelming difficulties in support by colleagues/local health workers immediately

The HCNs found the support manual too complicated and time-consuming for both themselves and the physicians performing their usual work. Additionally, HCNs lacked the knowledge and skills required to support patients within an unfamiliar support system. They became confused about how to start and continue support, regardless of their years of nursing experience. Colleagues and local health workers with practical knowledge and skills assisted HCNs by providing advice, feedback, and opportunities to observe their practices as role models. Local health workers included PHCs, as well as members of medical and nursing associations.

My supervisor (who accompanied me on my first visit) spoke to the person involved with the patient, saying, “I wanted you to call the

nurse (me) when the patient's situation changes." I probably could not express that very well on the first visit (so I learned.) (ID3-003)

HCNs also faced concerns about secondary infections, their agencies' workloads, the possibility of failing to save the patient's life, and dissatisfaction with support from the patient's family. They felt reassured that their colleagues, local health workers, volunteers, and patients would help them prepare for and implement infection control. HCNs found it essential for their mental stability that their closest colleagues listen to their feelings about the complexities of care.

3.3.3 | Trying to become nurse who is able to confront COVID-19

The HCNs gradually understood that caring for patients was a significant issue. They heightened their sense of mission and role awareness by considering information regarding patient support (e.g., shortages of hospital beds and the suffering of patients) and the situation of their agency or ownership (e.g., social role as the HCNs and expectations from their superiors). The HCNs were also positively motivated to provide ongoing support by reflecting on successful patient support cases and recognizing the importance of their care.

I knew that someday the HCNs would definitely go (to support), and now that COVID-19 has actually started to spread, "I have to go, I have to do my best." (ID4-002)

3.4 | Rushing to patient/family

The HCNs wanted to support each patient immediately after receiving orders from PHCs and physicians. They quickly worked to reduce both the physical distance to patients and the informational distance to understand their home care limitations as supporters.

3.4.1 | Breaking patient/family anxiety about entering their home

The patients and their families were anxious about home visits. They often could not understand the reason for HCNs visiting their homes, either due to inexperience with home visits or patients' cognitive decline. In addition, they were concerned that their neighbors might

notice their infection. Before the visit, the HCNs explained their profession, the purpose and process of the visit, and the need for wearing personal protective equipment (PPE). To protect the privacy of patients and their families, HCNs were mindful of the number of passersby when entering and leaving the home. They concealed their PPE in bags and wore or removed minimal PPE when necessary.

(The patient replied) "Who are you?". I explained to her that "the PHC could not contact you, so I visited you. I am your HCN." (The patient said), "Oh, I see." (ID4-003)

Some patients and their families initially refused visits from HCNs because they distrusted PHCs. However, after the HCNs explained their capacity to address healthcare needs, they were promptly allowed to enter as supporters.

3.4.2 | Assessing the patient's home care limitations

Due to the limited information obtained from PHCs or physicians, HCNs gathered available details on the patient's living conditions, such as the environment, prescriptions, families, and neighbors. They also assessed each patient's usual treatment and physical and mental condition, including vital signs, breath sounds, and oxygen saturation. Based on their empirical knowledge, HCNs selectively delved deeper into information related to home care limitations as soon as they identified it. For HCNs, in-person visits were more effective than phone calls in gathering information and assessing the limitations of continuing home care. However, some HCNs were prohibited from bringing necessary tools like a watch or stethoscope for infection control. As a result, they improvised by using a watch app on the patient's smartphone or relying on palpation.

The patient's respiratory rate was quite fast. [...] When the patient moved slightly, oxygen saturation dropped to 70 (%) immediately [...] the next day or two, I thought it was impossible (to continue home care). (ID3-001)

3.5 | Avoiding preventable death

Depending on the situation, HCNs take on four roles, but their primary aim is to save patients' lives.

3.5.1 | Assessing suitable supporters and their responses repeatedly

HCNs repeatedly assessed suitable supporters, such as themselves, patients' families, and local health workers, including PHCs, physicians, ambulance crews, and residential facility staff. Some supporters faced a sudden increase in workload or the need to rapidly change their roles due to the evolving circumstances of the COVID-19 pandemic. If HCNs assessed that the supporters could no longer respond effectively, they identified other supporters to step in.

The ambulance crews (I relied on) looked for a hospital but could not. [...] We decided that (the patient) would stay home [...] (I decided instead of hospitalization), make usual home visits, and procure meals. (ID5-003)

3.5.2 | Providing the minimum care necessary for patient

The HCNs provided rapid, intensive care using the knowledge and skills developed during their daily practice. Contracts with PHCs and infection control measures limited the number and duration of home visits by HCNs. As a result, they focused on providing the minimum care necessary to allow patients to continue home care as much as possible.

I visited, took care of (the patient's) toileting, fed her... and gave her soup... that is all for today. (ID2-003)

(Because the patient was dehydrated) I quickly put some water on the desk, [...] and I did not know where the medicine was, so I opened the drawers and searched around [...], and I found it. I prepared one tablet and gave him some nutritional supplements for now (and then left). (ID5-001)

3.5.3 | Appealing to crisis for enhanced rapid responses by family/local health workers

The HCNs required appropriate responses from supporters based on their relationships and specific situations. When HCNs needed families, ambulance crews, residential facility staff, and colleagues to respond, they specified the support methods required for patients. The

HCNs used direct language, which made it easier for the supporters to take action.

I could contact (the patient's) sister, and I said, "Well, I want you to come over here (to the patient's home) soon." [...] Eventually, we were able to (find and) save a patient who had collapsed. (ID1-004)

When HCNs required physicians or PHCs to respond, they primarily reported information about the patients and their families. The physicians and PHCs were responsible for ordering support, and the HCNs relied on their knowledge, judgment, and actions. However, some physicians and PHCs unfamiliar with the treatment and symptoms of COVID-19 did not respond, even after receiving urgent information from HCNs. The HCNs verbally informed the physicians about the details of the treatment manual. They also cooperated with physicians with specialized knowledge and persuasive skills to supplement medical findings and help persuade the PHCs. With the information provided by the HCNs, PHCs and physicians could better understand the necessity and methods of support, facilitating treatment and coordination of hospitalization.

When I consulted (with the attending physician) about a patient whose oxygen saturation had dropped to 92% and who was having difficulty breathing and needed care... the physician did not know what treatment to provide, so I said, "Dr., there is also... a method called steroids..." (ID1-001)

3.5.4 | Replacing family/local health workers who cannot respond

The HCNs assumed alternative roles to support patients and avoid preventable deaths due to a lack of support in two ways. First, based on their judgment, the HCNs immediately assumed the roles of families and local health workers, such as PHCs and home caregivers. Instead of relying on PHCs, they arranged and delivered meals and oxygen monitors to patients. HCNs also visited patients on behalf of home caregivers and families to support their daily lives and prepare them for emergency hospitalization. Second, HCNs were responsible for making recommendations for treatment and lifting work restrictions in accordance with the Infectious Diseases Act, which is essentially the role of PHCs. To avoid infringing on the PHC's legal authority by exceeding the

tentative support systems, the HCNs coordinated their roles with the PHC in advance. Recognition by PHCs that HCNs are reliable professionals who can collaboratively support patients was crucial for smooth coordination.

We (have adjusted our roles to) report who can have their restrictions lifted one day in advance; when the PHC gives us the “OK,” we can inform the patients that their isolation is lifted. (ID1-001)

4 | DISCUSSION

This qualitative study revealed that HCNs quickly developed a flexible support system and continuously addressed missing components. They sought to prevent patient deaths as community safety nets in place of families and local health workers. The participants provided emergency support to patients who were not contracted by their agencies. Their role extends beyond that of typical HCNs, who provide long-term support to contracted patients based on insurance (Japan Visiting Nursing Foundation, 2021). This difference may be attributed to the ethical issues arising from limited medical resources during the pandemic and the risk of severe COVID-19 (Hui & Zumla, 2022; World Health Organization, 2020a). Applying Japan's Infectious Disease Act to the Neuman system model, nurses working in hospitals and PHCs can protect themselves from the stressors of COVID-19 by implementing strategies from primary to tertiary prevention (Ministry of Health, Labour and Welfare & Ministry of Justice, 1998; Neuman & Fawcett, 2011). However, COVID-19 proved to be more severe and spread more rapidly than severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS), and influenza A (H1N1) (da Costa et al., 2020; Peiris et al., 2003; Zumla et al., 2015). HCNs are one of the nursing professionals responsible for initiating and supporting actions to meet people's health and social needs (International Council of Nurses, 2021). Therefore, they may have had to build a secondary and tertiary prevention system with leadership to address existing system deficiencies. In particular, in this study, “Building tentative support systems immediately,” which catalyzed building a new prevention system, was mainly handled by managerial HCNs. For the subsequent categories, both managers and staff were the primary individuals with experience. They took on roles as leaders who proactively assumed new responsibilities, both in the community and in their own organizations. Managerial HCNs may have taken on a leadership role not only within their agencies but also in the community, as they were the first to take on new

responsibilities (White, 2021). These findings suggest that the development of secondary and tertiary prevention by HCNs is similar to that of the Neuman system model's strengthening lines of resistance in the community. However, Neuman did not specify concrete methods for implementation (Neuman & Fawcett, 2011). Considering the severe shortage of healthcare workers during future pandemics, HCNs must collaborate with PHCs to develop needs-oriented secondary and tertiary prevention systems to save patients' lives.

In this study, the HCNs addressed weaknesses in the support system with the help of colleagues and local health workers. Disaster nurses also evaluate and redevelop disaster plans after a crisis (Firouzkouhi et al., 2021; International Council of Nurses, 2022); however, the participants in this study did so earlier, during the disaster. The HCNs provided patient support for extended periods while managing their regular duties, potentially leading to an overburdened workload. Additionally, HCNs are familiar with the community and play an essential role in providing home care as part of the local healthcare system (Irani et al., 2018). This familiarity may have made them more inclined to recommend improvements to the support systems than nurses dispatched to affected areas. When HCNs support patients with infections for an extended duration alongside their usual work, they must modify the provisional system, keeping sustainability in mind.

We found that HCNs quickly persuaded patients and their families to allow home visits, selectively gathered information, and determined the limitations of home care. While nurses in other disaster triage programs primarily focused on immediate medical needs (Li et al., 2017), the HCNs in this study also assessed the patients' living conditions. HCNs, as experts in holistic care, assess clients' entire situation, including their daily lives (Fjørtoft et al., 2021), which is a strength rooted in their routine practice. This ability to observe and assess from a broad perspective allows HCNs to accurately identify the limitations of home care. HCNs should develop community-specific triage criteria with local health workers and leverage their expertise to make informed decisions based on patients' living conditions.

We found that HCNs overcame the fears and concerns associated with patient care through support from supervisors and others before supporting patients. In addition, they received supplementary assistance from the beginning of any uncertainty related to their work. Nurses who began working in COVID-19 wards had difficulty forming connections and trust among colleagues (van der Goot et al., 2021), but HCNs received support from others more promptly. This difference may be influenced by the presence or absence of a collaborative

environment that was established during normal times. The COVID-19 wards were newly established, and nurses worked in unfamiliar environments with unfamiliar staff as outsiders, contributing to anxiety and making it harder to rely on colleagues (Sun et al., 2020; van der Goot et al., 2021). In contrast, the HCNs in this study worked with familiar team members, including supervisors and colleagues, making them more likely to seek support (White, 2021). The foundation for sustaining support during a pandemic lies in assisting HCNs by enhancing their knowledge, skills, and mental well-being. To improve the quality of care, HCNs and local health workers must foster relationships that encourage daily consultation and collaboration.

This study had several limitations. First, sampling bias may have occurred because the participants were affiliated with home-care nursing agencies in urban areas of Japan. While this study acknowledged the diversity across various community locations, HCNs in rural settings may have had varied experiences due to differing medical environments. Second, although we collected data promptly, recall bias was possible as the HCNs reflected on a chaotic period when they first began providing support. Third, to protect personal information, this study collected data by age groups instead of exact ages, preventing analysis based on the Japanese standard of 65 years for older adults. Future studies should consider collecting exact age data. Nevertheless, this study documents the previously unknown historical experiences of HCNs supporting COVID-19 patients and provides valuable insights for building local healthcare systems to prepare for future epidemics. HCNs can demonstrate leadership as frontline staff members during times of crisis. It is crucial that they establish supportive relationships with local health workers and develop a community-wide, flexible support system where residents can accept visits from HCNs during future pandemics. In addition, HCNs must be adaptable to uncertain and sometimes chaotic situations and acquire the knowledge and skills necessary to support home-care patients at risk of death. Future studies should focus on designing interventions for nursing students and HCNs to enhance their ability to serve as a flexible safety net in the next pandemic.

5 | CONCLUSIONS

We conducted a qualitative study to explore HCNs' experiences in supporting patients during the COVID-19 pandemic. In this study, HCNs served as a flexible safety net by quickly addressing the uncertainties of traditional infection control systems, often in coordination with PHCs during routine operations. They supported the patients by

“Building tentative support systems immediately,” “Updating tentative support systems, own knowledge, skills, and mindset,” “Rushing to patient/family,” and “Avoiding preventable death” for patients, their families, and local health workers. Strengthening secondary and tertiary prevention systems is a critical role for HCNs in saving patients' lives while providing individualized care during the COVID-19 pandemic.

AUTHOR CONTRIBUTIONS

Mana Shirouchi contributed to the conception and design of the study, as well as data acquisition, analysis, and manuscript drafting. Yuka Sumikawa contributed to the conception and design of the study and data acquisition. Kyoko Yoshioka-Maeda and Noriko Yamamoto-Mitani contributed to the conception and design of the study, critically reviewed the manuscript, and supervised the study. All the authors have read and approved the final version of the manuscript.

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CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interest.

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