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Research Paper

The roles of community health nurses for older adults during the COVID-19 pandemic in Northeastern Thailand: A qualitative study

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ABSTRACT

Objective: Community health nurses play an important role in primary health care service, especially during the spread of COVID-19. This study aimed to describe the work and activities of community health nurses focusing on the care of older adults during the COVID-19 pandemic in Northeastern Thailand.

Method: This was a qualitative research study. The methods, including observation, in-depth interview, secondary data, and focus group discussion, were employed to obtain data from 46 key informants. The process started from February to August 2022 in northeastern Thailand. Data were analyzed using content analysis.

Results: The results of this study were organized into 3 main themes focusing on 1) Community health nurses' role for older adults during the COVID-19 pandemic, which consists of 12 sub-themes; 2) Barriers of community health nurses in caring for older adults during the pandemic consisted of 2 sub-themes; and 3) Factors contributing to the success of community health nurses in managing health and providing care for older adults during the pandemic consisted of 4 sub-themes.

Conclusions: The findings showed that community health nurses had played important roles, such as educating and advocating health, providing care, promoting and empowering people in the community toward health, and giving emotional and nutritional support to older adults during the COVID-19 pandemic. This study can be used as a guideline for policymakers and health-related agencies to develop healthcare strategies and to optimize the management of community health nurses in caring for older adults during the pandemic. COVID-19 is a major public health challenge; therefore, understanding the roles and activities of community health nurses helps improve primary care cluster development, strengthens healthcare services in community, and for everyone in the community to be ready for possible challenge of future global pandemics.

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What is known?

- The COVID-19 pandemic has had a significant impact on older adults and human beings around the world.
- Older adults are a particularly vulnerable group during epidemics.

- Community health nurses play an important role in the prevention and control of the disease and in providing care for people during the COVID-19 pandemic.

What is new?

- Community health nurse is a vital person to prevent and control the spread of COVID-19 in older adults.
- Community surveillance prevention and control of the COVID-19 pandemic for older adults linked other key actors in the

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community together, such as the Local Administration Organization (LAO), community leaders, public sector officers, and civil groups in caring for older adults during the COVID-19 pandemic.

- The roles of community health nurses for older adults in the COVID-19 pandemic include health educators, health care providers, advocates, managers, health coordinators, health promotion for empowerment, health collaboration, health model, change agent, data collection and reporting, and nutrition support.

1. Introduction

Coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease has changed the world over the past year which was first notified on December 31, 2019. The World Health Organization (WHO) officially declared the disease as a global pandemic on March 11, 2020 [1]. Since then, there have been over 150 million confirmed cases and reported 3 million deaths worldwide [2]. In Thailand, there have been 4,546,854 confirmed cases, as well as 30,859 deaths as of July 11, 2022 [3]. The increase in number of cases has placed severe strain on the capacity of health care system in almost all countries; moreover, this situation potentially brings negative consequences to health workers who have to work amid the high risk of infection and limited resources that lead to the inability to provide proper patient management in hospitals [4].

The spread of the COVID-19 pandemic, in addition to directly affecting the health of the world's population [5,6]. The vast majority of patients with severe and fatal symptoms are older adults aged over 80 years [7,8]. Lack of social interaction and social distancing can have a negative impact on older adults, both psychologically and physically [9]. It was found that many older adults were affected by the COVID-19 pandemic in many areas. For instance, in terms of the economy, older adults faced obstacles in their work due to prevention and control measures such as social distancing and home isolation (81%), losing income (58%), and no income (67%). In terms of health, the majority of older adults experienced both physical and psychological health, including health deterioration related to COVID-19 (20%), anxiety and delirium (57.2%) [10,11]. However, older adults living at home in self-isolation, particularly those with chronic health conditions, needed surveillance to ensure adherence to pharmacological treatments and access to nutritious food, social and mental health support and information to maintain their emotional well-being [12].

In Thailand, the Department of Disease Control has issued prevention and control measures against the spread of COVID-19 among the Thai population [13]. In fact, most cases are managed at the community level; it requires the primary healthcare services to play a major role in improving the prevention and control of the infectious disease transmission. However, strengthening the capacity of primary care services is an important part of overall efforts in order to achieve optimal health. One of the important functions of the primary care service is providing nursing services [14]. According to standards of the International Council of Nurses (ICN), nurses were required to serve as disaster nursing in emergency response [15]. This role puts nurses—as health care providers—in the front line, a direct care provider playing an active role in the handling of victims in disaster response whose aim is to alleviate the impact of casualties that may occur

Community health nurses play an important role in primary health care service operating on the basis of integrated and holistic services [16]. Nurses play a role in giving care for older adults in the COVID-19 pandemic; especially to those who live alone, having

cognitive impairment, and need mental health care treatment and support [17]. Therefore, in the situation of the COVID-19 pandemic, community health nurses have played challenging roles in managing and providing health care services. Community health nurses are important people in the health system whose roles are responding to patient needs and acting as family caregivers, especially among vulnerable groups, including older adults.

The gap in knowledge even partially may affect the healthcare team to disregard the opportunity to understand various aspects of a comprehensive view of community health nurses' role for older adults during the COVID-19 pandemic. Therefore, understanding the roles and activities of community health nurses helps improve primary care cluster development, strengthens healthcare services in the community, and for everyone in the community to be ready for the possible challenge of future global pandemics on older adults. This research aimed to describe the work and activities of community health nurses focusing on the care of older adults during the COVID-19 pandemic in a model context area of North-eastern Thailand. The knowledge gained from this study can be used as a guideline for providing comprehensive knowledge-based services entirely to respond to the needs of older adults with diverse health conditions, lifestyles, and treatments in the COVID-19 pandemic as in the context of Thai society.

Consequently, the researcher was interested in exploring the roles of community health nurses focusing on the care for older adults during the COVID-19 pandemic and health-related activities in Northeastern Thailand in order to gain insight and a better understanding of their roles and activities in relation to culture, knowledge, explanations, meanings, and experiences, which derived from the social and cultural contexts of the northeastern community in Thailand.

2. Material and methods

2.1. Study design

This descriptive qualitative research aimed to explore community health nurses' role and health activities focusing on the care for older adults during the COVID-19 pandemic. The data was obtained through in-depth interviews, field observations, secondary data, and focus group discussion using a semi-structured interview as a guideline. Key informants include 1) Local Administration Organization (LAO), 2) Community leaders, 3) Public sector officers, 4) Civil groups, and 5) Older adults and their family caregivers. Data were analyzed using qualitative content analysis.

2.2. Setting

This research focused on one specific sub-district in North-eastern Thailand. This sub-district was selected as a model area for outstanding practice community management of COVID-19. The characteristic of the area is suburban, including 14 villages. There were total number of 2471 households, with a population of 11,620 and 1,148 older adults (9.87%). There were 149 trained health volunteers, 16 trained caregivers, and 3 trained care managers in the COVID-19 management area.

2.3. Research instrument and reliability verification

The semi-structured interview questionnaire was used in the in-depth interview and focus group discussion. The questions were open-ended, focusing on activities concerning the role of community health nurses for older adults in the COVID-19 pandemic. The examples of the questions are shown as follows: 1) What is the situation of the COVID-19 pandemic in your community? 2) What is

the situation of older adults' living conditions? 3) What kind of work or activities do community health nurses involve in caring for older adults during the COVID-19 pandemic? 4) What are the results of the activities done by community health nurses? 5) Who are the beneficiaries of community health nurses' work? 6) What are your opinions on the work or activities of community health towards community management for the care of older adults during the COVID-19 pandemic? 7) What are conditions influencing the results of the work or activities positively? Subsequently, more questions relevant to the objective of this study were added to gain insight and understanding. Multiple sources of data were used; and meetings among researchers were organized for triangulations. The data was re-checked with the original informants to validate the obtained data's quality. Confirmation of the results was done by reviewing experts who have worked in caring for older adults in the pandemic.

2.4. Participants

The researcher approached key informants through gatekeepers by employing a purposive sampling method. There was a total of 46 key informants, categorized into 5 groups: 1) LAO including one public health personnel; 2) Community leader including two heads of the villages; 3) Public sector officers including a director of sub-district Health Promotion, four community health nurses, and one public health staff; 4) Civil groups including 15 individuals, of which two were health volunteers; and 5) Older adults and their family caregivers including 22 distinct individuals. Therefore, they were selected to be the representatives of older adults who gained benefits from the work and activities of community health nurses during the COVID-19 pandemic in the community.

2.5. Ethical considerations

This study was approved by the office of the Committee for Research Ethics (Social Sciences), Faculty of Social Sciences and Humanities, Mahidol University, Thailand. The approval number was 2022/014.0202 on February 2, 2022. The researcher asked for permission from the LAO. The researcher informed key informants of the objective and detailed information before conducting the study. Key informants gave their informed consent before participating in the study. The rights and privacy of the informants were protected. The results of this study and the moral principles were also considered as follows: 1) Respect for a person, 2) Beneficence or non-maleficence, and 3) Justice.

2.6. Data collection and data analysis

The data collection started from February 2022 to August 2022. The researcher obtained qualitative data using multiple methods. In-depth interview with semi-structured interview was employed to interview 35 key informants in order to gain insight and understandings of individuals' experiences. The duration of the interview ran for 45–60 min per person. Observation data was obtained by observing the work and activities of those who provided care for older adults by visiting them at their homes, villages, and offices. The focus group discussion four sessions were organized using a semi-structured interview as a guideline to facilitate the discussion for the groups of public health officers and the groups of health volunteers. A number of 4–8 key informants participated in each group lasting approximately 2 h. The interviews and focus group discussions were tape-recorded using an audio recorder. After the researcher obtained consent from key informants, the data were transcribed.

Text data were analyzed using field note analysis and content

analysis. The transcripts were read, and responses were listed by themes. The codes samples of the transcripts were checked for similarities and differences. The identified data reflected on the procedure and activities of the COVID-19 management process for older adults, key actors, social groups, community organizations, and related organizations. We conducted the analysis along with the data collection and reviewed all the data with the informants afterward for triangulation purposes [18,19]. To determine the reliability of the study, Lincoln and Guba criteria including credibility, dependability, transferability and conformity were considered [20].

2.7. Trustworthiness

Regarding the credibility of research trustworthiness [21], the study covered the accuracy and reliability of the data operated by a team of experienced researchers in the field of qualitative research. The researchers checked the quality of the obtained information. After completion of the research, an analysis and a review were concluded. The research team provided an opportunity for the informants to participate in the research during the review of the data and the analysis of the findings. The collaborative review between the researchers and key informants was conducted using the triangulation technique to confirm the validity of the data (dependability). In addition, the researcher was aware of the verification of the data (conformability) [22], so that the informants would review the data after the data collection was completed.

The researcher employed the triangulation technique using multiple data collection methods such as observations, in-depth interviews, field recordings, etc. [21]. In addition, the researcher confirmed the correctness of the data with members by checking the data obtained from the interviews and re-check with the key informants for clarification [22].

3. Results

A total of 46 participants (38–78 years) participated in the in-depth interviews and focus group discussions. Their general characteristics information is shown in Table 1.

The results of this study were organized into 3 themes: 1) Community health nurses' role for older adults in the COVID-19 pandemic consisted of 12 sub-themes; 2) Barriers of community health nurses in caring for older adults during the pandemic consisted of 2 sub-themes, and 3) Factors contributing to the success of community health nurses in managing health and providing care for older adults during the pandemic consisted of 4 sub-themes, and the detail is as follows.

3.1. Community health nurses' role for older adults in the COVID-19 pandemic

This theme described community health nurses' role for older adults in the pandemic, which consisted of 12 sub-themes of their roles, including health educator, health care provider, advocator, manager, health coordinator, health promotion for empowerment, health collaboration, health model, change agent, data collection and reporting, and nutrition support.

3.1.1. Health educator

Community health nurses have played a role as educators. Their main actions as educators were to promote prevention and control of the COVID-19 disease and to provide training surveillance skills, namely 1) They provided knowledge and advice on how to care for the older adults and their family caregivers by designing suitable teaching materials for the older adults and using easy-to-

Table 1
Socio-demographic characteristics of the participants (n = 46).

Participant ID	Gender	Age	Marital status	Health status	Position
OA1	Female	66	Divorce	Infected and Chronic disease	Older adults 1
OA2	Female	62	Married	Infected and Chronic disease	Older adults 2
OA3	Male	63	Married	Infected	Older adults 3
OA4	Female	80	Divorce	Infected and Chronic disease	Older adults 4
OA5	Female	75	Divorce	High risk and contact infected person	Older adults 5
OA6	Female	73	Married	Chronic disease	Older adults 6
OA7	Female	74	Divorce	High risk and caregiver	Older adults 7
OA8	Female	65	Divorce	Chronic disease and living alone	Older adults 8
OA9	Female	73	Married	Infected	Older adults 9
OA10	Female	80	Married	Infected and living alone	Older adults 10
OA11	Female	71	Married	High risk and contact infected person	Older adults 11
OA12	Male	73	Married	High risk	Older adults 12
OA13	Female	62	Married	Infected and Chronic disease	Older adults 13
OA14	Male	71	Married	Infected and Chronic disease	Older adults 14
OA15	Male	69	Married	High risk and Chronic disease	Older adults 15
OA16	Female	84	Divorce	High risk and disability	Older adults 16
OA17	Male	63	Married	High risk and disability	Older adults 17
OA18	Male	62	Married	High risk and bed ridden	Older adults 18
OA19	Female	75	Married	High risk and Chronic disease	Older adults 19
OA20	Male	78	Married	High risk and Chronic disease	Older adults 20
OA21	Female	63	Married	High risk and Chronic disease	Older adults 21
OA22	Male	67	Married	Infected and Chronic disease	Older adults 22
PhS, LAO	Female	40	Single	Healthy	Public health staff, LAO
HV1	Male	49	Married	Infected	Head of village 2
HV2	Male	57	Married	Infected	Head of village 6
CHN 1	Female	45	Single	Infected	Community health nurse 1
CHN 2	Female	38	Single	Infected	Community health nurse 2
DTHP	Female	52	Married	Healthy	Director of Tambon Health Promotion
CHN 3	Female	33	Married	Healthy	Community health nurse 3
PhS	Male	45	Married	Healthy	Public health staff
CHN 3	Female	55	Married	Healthy	Community health nurse 4
HV 1	Female	59	Married	Healthy	Health volunteer 1
HV 2	Female	43	Married	Healthy	Health volunteer 2
HV 3	Female	55	Married	Healthy	Health volunteer 3
HV 4	Female	65	Married	Infected	Health volunteer 4
HV 5	Female	61	Married	High risk	Health volunteer 5
HV 6	Female	42	Married	Healthy	Health volunteer 6
HV 7	Female	53	Married	Healthy	Health volunteer 7
HV 8	Female	45	Married	Healthy	Health volunteer 8
HV 9	Female	59	Married	Healthy	Health volunteer 9
HV 10	Female	43	Married	Healthy	Health volunteer 10
HV 11	Female	44	Married	Healthy	Health volunteer 11
HV 12	Female	62	Married	High risk	Health volunteer 12
HV13	Female	63	Married	High risk	Health volunteer 13
HV 14	Female	58	Married	Healthy	Health volunteer 14
HV15	Female	40	Married	Healthy	Health volunteer 15

understand language or dialects such as washing hands, wearing masks and social distancing, etc. They also took all necessary precautions regarding the infectious disease if someone with suspected symptoms of having infections comes in from risk areas, walks around the community, and/or people in the household are infected with COVID-19; then actions must be made. Teaching materials regarding the prevention and control of infectious diseases were prepared and provided. They ensured that everyone in the community had access to information. Public relations in a variety of channels, such as Line group, Facebook, public audio announcement car, news broadcasting tower in the community, and village meetings, and knocking on the door of the older adults' houses, etc. were done in the community. 2) The training for community caregivers during the COVID-19 pandemic were provided to Infectious Disease Control Committee, health volunteers and community caregiver, etc. Some of the interesting relevant quotes in this regard are as follows:

"... We knocked on the door of every older adult's house with community health nurses. We provided advice on preventing the spread of COVID-19, such as wearing a mask, washing hands, social

distancing, and encouraging older adults to vaccinate against COVID-19 ..." (Focus group, Health volunteer)

"... Community health nurses would educate the village headman. When I had knowledge, I would pass it on to the villagers. I announced the method of prevention and control of COVID-19 through the village news broadcasting tower every morning and during the merit making at the temple. There were many older adults there, and they understood what to do, such as wearing masks, washing their hands, and keeping distance ..." (HV1)

3.1.2. Health care provider

Health care providers provide health services for and respond to the problems and needs of the older adults in the community; the services include social-bound, homebound, and bed bound for high-risk and infectious groups. The Health provider performed surveillance activities, assessed the severity and symptoms of the disease, and considered forwarding the patient to quarantine at home or specific places in community quarantine facilities. Some of the interesting, relevant quotes in this regard are as follows:

“... The COVID-19 vaccination for all target groups. Our principle is that all citizens must have universal and equal access to vaccinations; for example, older adults who are bedridden, have difficulty coming around, or are unable to receive services at health care centers. There would be a team of community health nurses to vaccinate older adults at home. Some people went to inject vaccines while raising cows at the cowshed. We went to give injections outside of working time, after 8 p.m., because some people went to work in the city and then came back to the community in the late evening. And after the vaccination, community health nurse sat and observed symptoms for another 30 minutes ...” (CHN2)

“... During COVID-19 epidemic. We had a home medicine delivery service for patients with chronic diseases. Most of them were older adults. Community health nurses would notify health volunteers to pick them up for” (HV9).

3.1.3. Advocate

Community health nurses play a major role in protecting patients' rights according to the Ten Patient Rights Declaration. Nurses ensured that if older adults were required to undergo screening for COVID-19 or needed to be hospitalized, the actions would be taken immediately. Patients would be explained and given information about the guidelines for further hospitalization according to their treatment and voluntary rights in order to ensure that the patient receives appropriate care. Some of the interesting, relevant quotes in this regard are as follows:

“... The COVID-19 pandemic is causing people in the area to have difficulty in living and making a living; what community health nurses did with the community team, and they must work together, namely providing health services that enable people of all target groups to have access to health services thoroughly, equally and fairly. The service model must be adjusted to be diversified. We would always follow up and provide information on treatment guidelines to protect the patient's rights” (CHN1).

“... When I was infected with COVID-19. Community health nurses came down to check on me at home, provided advice on treatment guidelines and rights to receive care, and coordinated ambulances for me to go to the hospital for treatment. So, I was not worried because I was well advised” (OA 9)

3.1.4. Manager

Community health nurses must have good management skill in order to help older adults in care operations during COVID-19. Management included planning, organizing, budgeting, preparing medical equipment and supplies needed, and coordinating with relevant departments through public relations campaigns. They also helped providing the older adults and their family members accessing to health services. There was a joint follow-up and evaluation process for operating results. Some of the interesting, relevant quotes in this regard are as follows:

“... The community health nurses would prepare materials and equipment, such as face masks, face shields, alcohol gel, ATK test kits and PPE kits, etc. We received support from the local political sector. And donations were accepted from companies, private shops, and some were supported by hospitals resulting in equipment to be used to manage the work and activities in our sub-district which helps a lot ...” (Focus group, Health volunteer)

“... Because in the early stages there was a shortage of necessary medical supplies. We determined if the management of the COVID-19 would work with the supplies we had” (CHN1).

“... In the sub-district, we had set up a local quarantine to observe the onset of illness to separate high-risk groups from the community. It was a method for preventing, controlling, and reducing the spread of infection in the community because there were risk groups returning from risk areas and getting infected. To reduce the risk of infection in the older adults, the community health nurses acted as quarantine center managers to observe the onset of symptoms, together with the working group at the sub-district level, integrated into all sectors ...” (PhS, LAO).

3.1.5. Health coordinator

Community health nurses play a role in coordinating infected people in the community with healthcare providers during the prevention and control of COVID-19 and collaborate with key actors in the community, such as community leaders. They arranged, transported and referred the patients for hospitalization; and helped the returning patients to reduce social stigma. Some of the interesting, relevant quotes in this regard are as follows:

“... The community health nurses are responsible for the continuous assessment of the patient's condition and, in case of severe changes, they coordinated care and referred the patients to a hospital physician. There was a shuttle bus from the local political sector and a hospital car to pick up, resulting in fast service ...” (PhS, LAO)

“... Our district was fortunate to have community health nurses who were good at coordinating. They coordinated with the sub-district Administrative Organization, Civil society, political sector, and related agencies. These people come together to work as a team. The group of sub-district assisted our management of the COVID-19 infectious disease very well. All parties work together” (Focus group, Health volunteer)

“... In the area, if we detected someone from a positive ATK test, the infected person would coordinate with the health volunteers and community leaders. The information would then be transmitted by telephone and LINE to community health nurses. We would then coordinate the information with the family, medicine physician who provided care, and considering taking care at local quarantine, or referring to hospital” (CHN3)

3.1.6. Health promoter for empowerment

Community health nurses play a role in empowering people to realize the dangers of the deadliest disease, COVID-19, for older adults. Family caregivers and the community team worked together to control factors affecting health, keeping close care for older adults. This had increased older adults' confidence and trust in community health nurses. Some of the interesting, relevant quotes in this regard are as follows:

“... The community health nurses which acted as the leadership in the area must build trust, faith for the community team. For example, set up the service unit to inform high-risk groups to quarantine. In case there was a problem, older adults and family members could contact the call center and notify via line of the service unit 24 hours a day. When the high-risk group was detained or had more severe symptoms, our citizens had access to services that were truthful and received proper care immediately” (CHN1).

“... The community health nurses in our area were very good at taking care of older adults. Other areas also come to request services. Grandma had confidence in service quality. Even in the COVID-19 situation, they could still provide thorough care, dependable, and you could ask anything and coordinated with the service at any time ...” (OA 13)

3.1.7. Health collaborator

Community health nurses must work with many individuals and departments. Health care for older adults requires teamwork with relevant agencies and network partners such as village headmen, leaders of each sector, local government organizations, and government and private agencies inside and outside the community area. The work and activities of community health nurses include screening vulnerable groups, preparing a quarantine facility in the community, and managing the prevention and control of COVID-19. Some of the interesting, relevant quotes in this regard are as follows:

“... The goal of the work process was to create engagement with the community at all levels, from the individual, family and community levels, and build trust. Health service design must come from all people coming together to think, decide, act, and receive mutual benefits from the community as a working team. Activities ranged from the main mission to and joint mission. The community health nurse term was one of the important teams in the community” (CHN1).

“... Our Sub-District Administrative Organization worked in coordination with the health service for surveillance, prevention and control of COVID-19. Community health nurses were the main coordinators in caring for the older adults, who were vulnerable groups in the community, which needed special care in all matters” (PhS, LAO).

3.1.8. Health model

Community health nurses must act as a role model in prevention measures for the spread of infectious diseases. They were a good role model for older adults; for instance, the model for self-defense against the disease, wearing mask in the community, social distancing, providing knowledge regarding vaccination against COVID-19, etc. Some of the interesting, relevant quotes in this regard are as follows:

“... Working in the COVID-19 pandemic, it had to be strict compliance with professional standards at the ministry, provincial, and community levels. In term of community resolutions, we communicated with everyone and encouraged them to practice together, in which we as healthcare providers acting as a service unit, a community leader in control of infection ...” (CHN2).

“... Community health nurses were a good role model. Older adults like us could not do this. We took this into consideration because they were dedicated to taking care of us. We must behave well. Whether it's about getting vaccinated against COVID-19 or wearing a mask” (OA21).

3.1.9. Change agent

Community health nurses must act as a change agent for health development and the prevention of COVID-19. For instance, their roles as a change agent were: establishing a community-based COVID-19 control committee, encouraging preventive measures

such as social distancing, wearing a mask properly, and adapting life to a new normal, etc. Some of the interesting, relevant quotes in this regard are as follows:

“... Community health nurses led the team and made decisions based on information and resources given in the context of the community area. They dared to design different but feasible services, managed spatial problems, and presented solutions to the community. For example, disease control management, food management and career Management were managed in the community. They must dare to link to the relevant agencies and the private sector in order for the community to continue to function and to support itself through the crisis together ...” (CHN1).

“... Community health nurses acted as a change agent for older adults in the COVID-19 pandemic. Several activities including proactive service arrangement, caring for the older adults, caring for homebound and bedridden groups, and providing universal access to health services with community caregiver and all sectors were taken in the community” (PhS, LAO).

3.1.10. Data collection and reporting

Data obtained during the COVID-19 pandemic was necessary for health operations and management. Information including health status, current situations, caregivers, activities, and household issues of the older adults were important in the time of the pandemic. In order to have accurate and up-to-date information, community health nurses needed to collect health and all these data and report for quality care of the older adults in the community. Some of the interesting, relevant quotes in this regard are as follows:

“... Our nursing team would have all health status data stored in our data storage program, which were the Hos-XP program and JHCIS program. All data would be analyzed and then returned to the community team and the SAO. This was useful information to use in planning work and forecasting the situation in the area, such as health screening, and older adult situations during COVID-19. We would know where the older adults were or if there was a risk group of people that had a congenital disease and needed special care ...” (CHN3).

“... Community health nurses from health service units would collect information on the COVID-19 situation. Then sent the information to the sub-district administrative organization team and to communicate the situation with the people through the sub-district administrative organization's Facebook page; then reported to the provincial disease control team ...” (CHN1).

3.1.11. Consultant

Community health nurses played a role in giving advice to the older adults in the community regarding their current situations and health status. They provided guidelines for older adults to act and facilitated access to health services when at risk or when quarantined in time of the COVID-19 pandemic. COVID-19 had a huge impact on older adults in many aspects, including social, economic and health aspects, causing the older adults to experience stress and anxiety, and they had to adapt to the new normal situations that occurred in the community at all times. Community health nurses provided consultations through phone, line group, and follow-up home visits at older adults' homes, etc. Some of the interesting, relevant quotes in this regard are as follows:

“... The community health nurses had set up line groups for the community and working groups to prevent and control the disease and to coordinate consultation, to receive reports on the situation in the area 24 hours a day, and to solve problems in caring for sick groups. High-risk and vulnerable groups in need of community assistance could contact these nurses, such as an older adult who had to do 14-day quarantine and needed food arrangements for those in quarantine time ...” (HV12).

“... When there was an abnormality happening, I called to consult with a community nurse. Three days before my child came back from Bangkok. When the child returned, he called and told me that he had COVID-19. I suspected myself of contracting COVID-19. Community health nurses and the team rushed me to the hospital for screening and coordinated referrals to be admitted to the hospital. Because I had many congenital diseases” (OA14).

3.1.12. Nutrition support

Community health nurses played a role in nutrition support for the older adults, namely 1) Screening for nutritional status; 2) Managing food from donations and local government such as rice, chicken eggs, milk and vegetables and distributing to older adults at home and to those individuals who had a financial problem during the pandemic; and 3) Managing food support from the hospital welfare for older adults who had to quarantine at home and who could not afford to buy food. Some of the interesting, relevant quotes in this regard are as follows:

“... Community health nurses set up a meeting with the team to discuss work and food management in the community, and there was a consensus on accepting donations of food and equipment necessary for quarantine, such as rice, eggs, dry food, etc., to support vulnerable groups including older adults, the poor and the sick after leaving the hospital and had to continue quarantine” (DTHP)

“... We are open for donations which we have received support from all sectors. This allowed us to have a large stockpile of food to support detention-risk groups, the older adults, the vulnerable and the poor. We accepted donations through the Facebook page of our primary care unit, the government, community and private sectors” (CHN1).

“... Community health nurses provided food 50 baht per meal during the ten-day home quarantine period, approximately 1,500 baht/person ...” (OA22).

3.2. Barriers to community health nurses in caring for older adults during the COVID-19 pandemic

This theme described the barriers to community health nurses in caring for older adults during COVID-19 consisted of 2 sub-themes: 1) The decrease in numbers and discontinuation of the work in home visit care for homebound and bedbound; and 2) The older adults in community area did not have access to telehealth details shown as follows:

3.2.1. The decrease in numbers and discontinuation of the work-in-home visit care for homebound and bed bound

The role of community health nurses focused on prevention and surveillance of the COVID-19 and providing care for people in the community. During the pandemic, the workload of community health nurses was double. Besides the routine schedule that they

had to care for patients, they had to manage local quarantine, home quarantine and home isolation of infected people. Community nurses were unable to effectively provide care for the older adults for home visits, homebound and bedbound, because they had to take care of infected with COVID-19, which was the priority during the pandemic. Some of the interesting, relevant quotes in this regard are as follows:

“... During the COVID-19 pandemic, we had more workloads. Most of the work priorities focused on surveillance and prevention of COVID-19. Therefore, the numbers of community health nurses were limited in taking care of older adults at home in homebound, and bedbound and the nurses had to discontinue giving care to them because the priority was out on the infected persons. However, it was resolved by having health volunteers, community caregivers, and family caregivers for older adults take the place of the community nurses.” (CHN1).

“... When the COVID-19 pandemic happened, the community health nurses would have doubled their workload. They would manage care plan for community caregiver to monitor the older adults at home and provide home care instead and report the results” (HV9).

3.2.2. The older adults in the community area did not have access to telehealth

In the situation of the COVID-19 pandemic, telehealth was used to follow up the patients infected with COVID-19 and patients with chronic diseases. The older adults in rural communities did not have access to telehealth. This was a main obstacle in caring for older adults, especially among those who lived alone, were illiterate, and were poor. Some of the interesting, relevant quotes in this regard are as follows:

“... Problems and obstacles of the Northeastern Community, we found that most of the older adults did not have internet and were not as good at using technology. Telehealth system was used in the situation of COVID-19; however, older adults in our country did not have access to this service, because it's too modern” (CHN2).

“... I had a cell phone, but I could use only call and pick up calls from my child, no internet, and I could not use the LINE application. When the community health nurses contacted me, they had to only visit my home or had a health volunteer visit instead. This happened the same as the other older adults in the community. Health nurses or health volunteers had to take older adults to talk with a doctor or nurse. I'm an ancient old man. I don't know how to use telehealth.” (OA 13)

3.3. Factors contributing to the success of community health nurses in managing health and providing care for older adults during the pandemic

This theme described factors contributing to the success of community health nurses in managing health and providing care for older adults during the pandemic, which consisted of 4 sub-themes, including human factor, work factor; data factor; and resource factor.

3.3.1. Human factor

The human factor: 1) There are key actors in the community, including LAO, community leaders, public sector officers, civil groups, health volunteers, community caregivers and family

caregivers. The key to success in managing health, community surveillance prevention and control, and providing care for older adults in time of the pandemic resulted from cooperation and building trust among these important actors; 2) Building and developing of the health capacity among care providers and health volunteers enabled effective health managing and caring for older adults; 3) Building strong networks from all organizations such as health-related agencies, local politicians, private sectors, and etc., could support health management within the community; and 4) Developing skilled team and working mechanisms by sub-district helped to assist surveillance prevention and control of COVID-19.

3.3.2. Work factor

The community health nurses were the commander of surveillance prevention and control of the COVID-19 pandemic teams. There was a collaborative work process among teams. The operating system was communicated, commanded and controlled from a single commanding center. The community had established a day care center for older adults to be an area for activities, including health and career promotions for older adults.

3.3.3. Data factor

The community health nurse collected data and user data from various sources, including 1) Java Health Center Information System (JHCIS); 2) HOSxP; 3) Specific information on the issue of older adults; 4) Specific information on the situations of COVID-19 pandemic. This enabled the community health nurses and sub-district surveillance prevention and control of COVID-19 teams to learn about the problems and needs of older adults, leading to the initial design comprehensive plan for surveillance prevention and control of the COVID-19 pandemic for older adults.

3.3.4. Resource factor

Community health nurses raised funds and resources to contribute to older adults in the COVID-19 pandemic. They set up the sub-district fund to support the work and activities of older adults, such as health screening, exercise activities, and career promotion. The LAO created sponsor plans for older adults' care, and the community health nurses collaborated with other associates for their roles and budget.

4. Discussion

This study aimed to describe the role of community health nurses focusing on the care of older adults during the COVID-19 pandemic in Northeast Thailand. The results showed 3 main themes identified in the study; 1) Community health nurses' role for older adults in the COVID-19 pandemic consisted of 12 sub-themes, including health educator, health care provider, advocate, manager, health coordinator, health promotion for empowerment, health collaboration, health model, change agent, data collection and reporting, and nutrition support. 2) Barriers to community health nurses in caring for older adults during the pandemic consisted of 2 sub-themes, including the decrease in numbers and discontinuation of the work in home visit care for homebound and bedbound; and the older adults in community area did not have access to telehealth; and 3) Factors contributing to the success of community health nurses in managing health and providing care for older adults during the pandemic consisted of 4 sub-themes, including human factor, work factor, data factor, and resource factor.

The findings in this study are in the line with other studies which reported that community health nurse has played a major role in an integration of health and social services during the COVID-19 pandemic [23,24]. Nursing care management adapting to

the COVID-19 pandemic can assist the community health nurse to minimize the risk of exposure to COVID-19 in the community. Apart from this, the nurse also plays additional roles in the community [25]. Community health nurse plays a vital role in managing the COVID-19 pandemic within the scope of the primary health care service because they provide nursing care for individuals, their families, and the community [26]. Community health nurses must be knowledgeable, skilled, or well-versed in specific diseases. They also must know the symptoms of the disease, stage of disease, progression in medical treatment, side effects from treatment, complications, and transfer knowledge to the public [27], including the epidemic situation of COVID-19. More roles from community health nurses are promoting practices to prevent COVID-19, educating patients, caregivers, and village health volunteers [28,29] and families on how to do self-isolation at home, and family nursing care to increase family independence [30].

The community health nurses' role of being a health service provider requires a nursing process, including data collection, defining nursing diagnoses, nursing planning, nursing practice and nursing evaluation. Education is provided by handing out guidance documents on COVID-19 [27,29], as well as anticipating potential problems and prevention plan in advance; for example, if you experience a cough, fever and difficulty breathing, you should see a doctor or call for consultation by phone, and having to self-isolate from other people, etc., [28]. Moreover, complex health services included initial screening for COVID-19 health services, vulnerable group management services, COVID-19 contact tracing in the community, readiness of nurses to implement the COVID-19 vaccination program, selective home visits, and optimization services in the community [30]. Community health nurses ensure patients' rights and protect people who receive standard medical care. At the same time, they also maintains the benefits of patients and their families and concerns ethics of nurses in which they should treat all patients and families equally [27]. They also ensure the rights to government remedies as well as other rights related to those infected with COVID-19 and the public [29].

Community health nurses play a role as health managers, including planning, organizing work and budgets, finding useful sources, organizing manpower, allocating resources, preparing materials, equipment, and supplies, and coordinating with all parties involved. They also manage public relations to ensure all people have access to health; they evaluate work and adjust the plan accordingly, such as screening for COVID-19 and promoting health services [27] according to social distancing principles, jointly develop a building a house as a place of quarantine; and organizing a system to work with health volunteers in caring for infected people. Patients with chronic non-communicable diseases who are not at risk of infection when picking up medications in a health care facility and allow the health volunteer to assess the necessary information such as blood pressure level, blood sugar levels, etc., are brought to the nurse. In the case of normal information, a health volunteer will deliver the medication to the patient at home. In the case of abnormal results, health teams will do home visits for health assessments [29]. The community health nurses act as good coordinators. They forward the medical treatment plan to the relevant personnel of the health team. It is the coordination at the departmental level within the hospital and/or between the hospital and outside agencies, such as the right to treatment of the patient, etc. Community health nurses must have communication and negotiation skills, including requesting help by acting as a coordinator for the benefit of patients and their families, such as coordinating with community leaders and public relations, communicating news of the COVID-19 infectious disease situation, and collaborating with community volunteers, etc. [27].

The role of community health nurses in promoting the health of

older adults and empowering them during the COVID-19 pandemic included capacity building and developing the potential of individuals, families, and communities to be aware of the dangers of disease and the importance of health by community health nurses to help deal closely and continuously until the service recipient has confidence, can take care of himself and has a change in health behavior for better outcomes [27]. And helping community health nurses to empower health cadres, to educate the community, to empower health cadres to trace COVID-19, and to empower health cadres to control social stigma in the community are the roles of health promotion [28]. Health cadres can assist in providing support related to COVID-19 under the community health nurse implementation. This finding is in line with efforts to handle COVID-19 in Thailand, which involved village health personnel in supporting surveillance in the community. Health cadres can also assist health professionals in carrying out proactive screening to detect the early spread of the virus in the community [31].

Social isolation contributes to multiple health problems for older adults residing in the community and residential care facilities. Mitigating the effects of social isolation requires a holistic approach that focuses interventions on the physical, psychological, and psychosocial needs of older adults. Nurses possess unique expertise in developing holistic interventions and using creativity to counteract the negative health sequelae resulting from social isolation. The nursing role in holistic care serves to protect the older adult's ego integrity, improve quality of life, and maintain wellness during this time of mandated social distancing [32] in order to combine quality health service activities, such as assisting in screening for at-risk groups, preparing a quarantine facility in the community in accordance with the COVID-19 prevention measures, and distribution of materials to prevent infection, etc., [28,29]. Related to this study found that community health nurses play a role including 1) Collaboration with Non-Government Organizations (NGO) to train health workers on 3 T (Tracing, Testing, Treatment), 2) Collaboration with NGOs for health education and community-based surveillance training for people in the community, 3) Collaboration with the local COVID-19 task force, and 4) Optimizing of human resource allocation through collaboration [30].

Community health nurses act as role models for healthy people who practice strictly according to preventive measures against COVID-19. This will enable people to have the correct attitude and practice according to the role model in living a new way of life, such as protecting themselves by wearing a mask all the time in the right way, less meeting in crowded areas, maintaining social distance, working from home, and balancing life according to a new way of life, etc. [28]. Community health nurse play as a change agent in health development to prevent COVID-19, such as encouraging and establishing community organizations for the prevention and resolution of COVID-19, by the community itself to live a new way of life such as meeting less, keeping social distance, protecting yourself by wearing a mask at all-time properly when meeting people, living a life of self-sufficiency, and work from home. People with different levels of risk must cooperate and act according to the measures in order to prevent infection with COVID-19 [28,29]. Community health nurses should have good information for system management. The utilization of technology to deal with information needs was identified in this study as one of the community health nurse interventions to provide nursing care services. The use of social media and tele-consultation in disseminating knowledge to the public is used as one of good communication channels during the pandemic. Other qualitative studies also reported that nurses use digital media to spread awareness and combat misleading beliefs about COVID-19 [33]. Related to the community health nurse and community members co-created such data and deployed them

to design plans for various cases of older adults' care [34].

The community health nurses had to give advice to people according to what status they were, such as low-risk groups, medium-risk groups, or high-risk groups. Guidelines were used when encountering various levels of risk. Nurses provide information that facilitates access to health services when at risk to detain oneself, counseling those who are worried that they have symptoms of COVID-19 by doing an assessment of the disease, etc., [28]. Utilization of technology to bridge the information needs in health management included the use of social media, online nursing and monitoring during self-isolation, and tele-consultation [29]. Telehealth has also been used for management of COVID-19 patients. Individuals with symptoms pertained to COVID-19 were initially consulted remotely via telephone or video to reduce the risks of the virus spreading in some countries. A paper published in BMJ describes the steps and strategies on how to choose and utilize appropriate telehealth technologies, which provided a guidance for supporting physicians or nursing practitioners to make remote consultations, such as taking a history remotely, performing a remote physical examination, and making decision for remote management and providing advice or further in person assessment [35].

Approaches using digital technology can support the monitoring of patients undergoing self-isolation [36,37]. Community health nurses play a role in nutrition care. The study found that 1) Nutritional screening and appropriate nutritional care should be an integral component of holistic care for people with or without COVID-19 illness. 2) Patients with moderate-to-severe infections of COVID-19 are at risk of malnutrition and diet-related distress, which, if unaddressed, can affect function, rehabilitation and quality of life. 3) The underlying malnutrition affects the immune system, potentially making people more vulnerable to infections such as COVID-19 and affecting recovery. 4) Patients recovering from severe illness are likely to have muscle wasting or feel weak and may have increased protein needs [38].

However, during the COVID-19 pandemic, nurses have played an important role such as developing leadership and assistance in the services in charge [39,40], recognizing that they are at the heart of the different health systems playing a crucial role in health promotion, prevention and treatment of diseases and subsequent rehabilitation of patients [41,42] So, the community health nurses have the duty to provide nursing care for older adults in the community to improve the community's quality of life in dealing with various problems and must be able to apply an integrated and holistic approach in responding to the existing challenges [43].

5. Limitations of the study

The study employed a gatekeeper approach in selected sub-district; therefore, the context of each area must be considered when interpreting the results of this study.

6. Conclusion and implications for health personnel practice

The findings of this study indicated important understandings of the roles of community health nurses for older adults during the COVID-19 pandemic. This information was obtained from the experience of LAO, community leaders, public sector officers, civil groups, older adults and family caregivers. The findings of this study can be used as a reference and suggestions on the implications for nursing practice, health policy, education and research. The recommendations are as follows:

Nursing practice. Community health nurses should 1) design nursing care based on community health nurses for older adults during the COVID-19 pandemic, 2) provide information related to

the health of older adults in the community in order to develop a monitoring and evaluation COVID-19 management plan, 3) encourage key actors in the community to take part in caring for older adults in the COVID-19 pandemic, and 4) enhance knowledge and skill set for health volunteers in the community.

Education. Educational institutions should design a short course training on community health roles and actions for the COVID-19 pandemic and/or dangerous communicable diseases.

Research. Nursing institutions should develop a community-based research project to manage COVID-19 for older adults.

Policies. The Thailand Nursing and Midwifery Council should develop a guideline for community health nurses to work with social capital in the COVID-19 management for older adults and promote knowledge management regarding the roles of community health nurses in COVID-19 pandemic and/or dangerous communicable diseases for older adults.

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Data are absent due to reasons of privacy.

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Pairin Yodsuban: Conceptualization, Methodology, Software, Formal analysis, Investigation, Data curation, Writing – original draft, Editing, Visualization, Project administration, Funding acquisition. **Supa Pengpid:** Project administration, Methodology, Data curation, Resources, Writing – review & editing, Supervision, Funding acquisition. **Ruangurai Amornchai:** Formal analysis, Investigation, Data curation, Funding acquisition. **Prakaikeaw Siripoon:** Formal analysis, Investigation, Data curation, Visualization, Funding acquisition. **Weha Kasemsuk:** Investigation, Data curation, Resources. **Nittaya Buasai:** Investigation, Data curation.

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Appendix A. Supplementary data

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