



Potentials and Challenges for Village Health Volunteers After COVID-19 Outbreak: Thailand

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Abstract

The GHS Index 2021 ranked Thailand first in virus detection and rapid reporting of COVID-19. However, the spread still continues across the country. Although more than 1,040,000 Village Health Volunteers (VHVs) are the key to Thailand's success, no previous investigation into a cross-country comparison of how VHVs manage COVID-19. This study was based on a mixed-method approach. The results revealed differences between VHVs in the seven locations (namely Bangkok, Central, Northern, Northeastern, Eastern, Western, and Southern) in managing COVID-19 in the six topic areas (namely effectiveness of COVID-19 health service management; problems with the operation of COVID-19 control, strategies, measures, and practices to control the outbreak; leadership in public health and control; needs for additional development and training, and location-related issues). The findings revealed insights into which topic areas and indicators are effective or ineffective in which locations. The findings have practical implications for VHVs and the general public in all locations. For policymakers, the insights practically imply what topic areas and indicators need to be further developed for more effective management at the local and national levels. The lessons that can be learned from Thailand can also help other developing countries prepare for future outbreaks.

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1. Introduction

Currently, countries are working to contain COVID-19. The outbreak has affected people worldwide, especially in developing nations. Bangladesh (Sattar et al., 2020), India (Raju & Ayeb-Karlsson, 2021), Mali Sagaon-Teyssier et al., 2020) and Ethiopia (Delbiso et al., 2021) are at risk due to ineffective health services, ineffective physical health infrastructure, healthcare maldistribution, and insufficient mitigation efforts. According to Raju and Ayeb-Karlsson (2021), the outbreak does affect rural areas more. It has exacerbated social inequality. Even the WHO guidelines on preventing COVID-19 (hand washing, and working from home) physical are difficult to implement in informal rural settlements. Local responses depend on how health crises are managed. Not all rural areas are in crisis. This deserves investigation. This investigation will benefit other low and middle-income nations.

Prior research on the success of containment in low and middle-income countries is scant, so it is not always clear why not all rural locations are at risk. Real-world evidence is needed to investigate this gap. Evidence from Thailand, the first country outside China infected by the virus, may show how effective health management and systems in rural areas could contain COVID-19 local transmission in 2019-2020. The Global Health Security Index 2021 immunized Thailand's healthcare and health (ranked fifth out of 195 countries for its strong healthcare system). More than 1,040,000 VHVs nationwide are key to the system's success. WHO called them "unsung heroes" or "Frontline fighters" (Kertesz et al., 2020).

It is interesting to see how VHVs managed COVID-19 transmission nationwide. Thailand's effective COVID-19 containment was due to its comprehensive healthcare system, which links the community to the hospital and has rapid disease control in every subdistrict. Since the 1980s, VHVs have been assigned to manage virus control in collaboration with community

health security mechanisms, public health, and security authorities. Their role is crucial for understanding COVID-19 controls and Thai community resilience. Other developing countries can learn from how VHVs manage transmission despite poor health services. Case studies can help identify potential challenges in VHVs in Thailand in response to COVID-19.

This article has seven sections. Section 1 provides background and a research gap. Section 2 reviews relevant literature and prior research on COVID-19 and outlines the study's Framework and questions. Section 3 explains the study's methodology. Section 4 presents study results and research questions. Section 5 compares key findings from previous research. Section 6 presents a conclusion, a synthesis of the key findings, and recommendations for future policy-making and research. Each section proceeds as follows.

2. Literature Review

2.1 COVID-19 risk-management policies, measures, and initiatives

2.1.1 Travel restrictions

Travel made the virus uncontrollable, so travel restrictions were imposed. Inflexible travel restrictions hindered COVID-19 containment. According to Thombre and Agarwal (2021), flexible policy planning should be part of public transport systems to handle future pandemics. Due to policy modification constraints, Marsden and Docherty (2021) suggested a paradigm shift. Gaskin et al. (2021) recommended better policies to detect and isolate infected travelers. Cross-border restrictions and multi-sector cooperation were also crucial, as shown next.

2.1.2 Cross-border restrictions and multi-sector cooperation

Cross-border travel restrictions were included and could be achieved through multi-sector cooperation. Djalante et al. (2020) looked at the policies of different ASEAN countries and found that the best way to



contain COVID-19 is through cross-border and multi-sector cooperation.

2.1.3 Lockdown

Prevention or emergency prompted a lockdown. Several researchers (e.g., Kumar & Choudhury, 2021; Sardar et al., 2020) have studied lockdown policy. Toba (2021) offered post-lockdown livelihood solutions and these policies must be supported by mechanisms that allow health workers to shape local transmission policies.

2.2 Healthcare management

Governance must promote joint actions of health sectors or actors to steer synergistic policies. Dutta and Fischer (2021) indicated that governance is key to understanding the epidemic's path, impact, and recovery. Some of the things that have been looked into in the past about governance are multi-level responses, socially innovative governance, solidarity, citizen behavior, and health crisis awareness.

2.2.1 Reaction to multilevel governance

Hirschhorn (2021) found that stakeholders seek multi-level external partnerships in a path-based way to address policy challenges, as the crisis response was largely driven by outside forces and triggered by massive external panic.

2.2.2 Socially innovative governance

Local agencies' social innovation drives all social, and rural governance processes. Socially innovative governance codifies and organizes social, unique governance features (Georgios and Barra, 2021). In these processes, health workers are key decision-makers. Innovative social governance involves community participation, behavior, and solidarity.

2.2.3 Solidarity and citizenship

Solidarity reduces local transmission. Shaw et al. (2020) indicated that in some countries, governance decisions, community solidarity, and behavior matter. Gupta et al. (2021) confirmed the importance of a strong

social support system in rural India and Nepal in times of crisis.

2.2.4 Situational awareness

Without public awareness, low-risk areas may not see significant impacts. Lin et al. (2021) also found that the greater public protection awareness, the more residents would support COVID-19 measures. Lecouturier et al. (2021) confirmed governance's impact on health services.

2.3 Risk and crisis management

Containment needs management. Abbas (2021) indicated that rapid spread requires effective management and prevention. Both cities and borders need management (Laroze et al., 2021). Effective management strategies were suggested. O'Connor et al. (2021) suggested harmonizing cross-border pandemic response and border communities' vulnerabilities. Everard et al. (2020) emphasized ecosystems' intangible powers (like awareness and attitudes). Nuryana and Fauzi (2020) backed mitigation and management strategies. Scholars suggest the following management strategies.

2.3.1 Strategy

Zhou et al. (2020) proposed GIS for data-driven systems to quickly acquire knowledge and reliable information about transport risks, population flow, equipment distribution, and social sentiment and detection. Other strategies involve urban settlement planning priorities (Syal, 2021), social solidarity through (Mishra & Rath, 2020), social distancing among the elderly (Das & Bhattacharyya, 2021), and disaster risk and interdisciplinary training (Righi et al., 2021).

2.3.2 Technology administration

Several technologies for COVID-19 containment have been proposed, including GIS with big data (Zhou et al., 2021), mobile crowds (Diamante et al., 2021), and drones to support transport systems (Kunovjanek & Wankmüller, 2021).

2.3.3 Government administration

Managing crisis requires public administration. Das et al. (2021) proposed



decentralized activity centers in rural Bangladesh. Glaser and Krizek (2021) proposed measures to trigger a transition to new transport systems, while Villeneuve (2021) highlighted a roadmap for inclusive disaster risk reduction.

2.4 Managing the public health crisis in response to COVID-19 in Thailand

VHVs act as intermediaries between health professionals and local communities (Krassanairawiwong et al., 2021; Tantrakarnapa et al., 2020; Naprathansuk et al., 2021; Aung et al., 2021). They encourage health activity participation, which relieves professional healthcare workers' burdens (Tejativaddhana et al., 2020). In this crisis, they're invaluable (Nittayasoot et al., 2021). Without them, Thailand would have failed (Marddent & Arporn, 2021). Below are VHVs' roles, duties, and responsibilities.

2.4.1 VHVs' role in managing COVID 19 responses

1) Health care, education, and promotion providers

VHVs are key health workers in rural communities without timely medical care. They promote health activities (Tejativaddhana et al., 2020) and educate local communities on COVID-19 prevention (Krassanairawiwong et al., 2021). They also support "door-knocking" anti-virus campaigns (Marddent & Arporn, 2021) to raise public health awareness (The Nation Thailand, 2020). In the campaigns, they advise self-protective measures (e.g., wearing masks, washing hands often with soap or alcohol gel, social distancing, eating hot food, using personal items during meals, and avoiding smoking and drinking alcohol) (Kaweenuttayanon et al., 2021; Chinnapha, 2020) and protective equipment (e.g., handmade masks, alcohol gel, health flyers, and stickers for screened households) (Bezbaruah et al., 2021; Vongsayan & Nethipo, 2021; Chinnapha, 2020). They also screen, monitor, and diagnose symptoms (Viwattanakulvanid, 2021). Due to a lack of health professionals in

Thailand, health professional assistants perform these duties. Thailand cannot track all local cases and provide national wide health services without VHVs (Bezbaruah et al., 2021).

2) Health professional assistants

VHVs have helped Thailand conduct a screening test for home returnees, coordinate between returnees and professionals, and conduct a daily health visit to record and monitor a local 14-day quarantine (Tangkitvanich, 2021). They collect daily health data and statistics on infected community members and returnees, report those with symptoms (Kaweenuttayanon et al., 2021), and monitor quarantined patients (Bandaranayake et al., 2021). Data is needed to purchase medical equipment, assess local transmission, and make management and financial decisions (Marome & Shaw, 2021). VHVs' services differ from doctors'. They have more responsibilities in areas with few health facilities. They must ask for help from different sectors and coordinate to deal with shortages.

3) Third-party coordinators

VHVs coordinate between community members, local heads, authorities, and external agencies on public health surveillance (Vongsayan & Nethipo, 2021; Langkulsen & Rwodzi, 2021; Shadmi et al., 2020). They voice community health concerns to involved sectors and social networks (Kitchanapaibul et al., 2021). During lockdown, many communities experienced food shortages, so VHVs coordinated food supply with alliances (Pongpirul, 2020). VHVs coordinate between people and sectors. Daily VHV monitoring and surveillance promotes cooperation and builds trust with members. The mutual trust acts as role models and emotional support for VHVs.

4) Community role models and emotional supporters

Trust ensures successful policy implementation and smooth COVID-19 surveillance with limited resources (Bezbaruah et al., 2021; Triukose et al., 2021). Due to the COVID-19 outbreak, they provide emotional



support to reduce the community's psychological constraints, stress, and anxiety through informal counseling (Kertesz et al., 2020), as health leaders (Osewe, 2021), and as friends or relatives (Laochankham et al., 2021). VHVs faced many challenges in managing the outbreak, which affected their performance. Challenges follow.

2.4.2 COVID-19 Response Difficulties

Health workers around the world face psychological constraints, massive containment measures, paradigm shifts, emergency risk management, communication and information-sharing constraints, and ecological disparities. Below are the group details.

2.4.2.1 Psychological constraints

The world panicked when a pandemic struck. In Mali, health workers and citizens suffer psychologically from COVID-19 fears, uncertainty, and severity, and the lack of a vaccine and protective equipment (Sagaon-Teyssier et al., 2020). The elderly in Mali are more vulnerable due to age and health issues (Jamjumrus, 2021). Thai VHVs abound. Due to limited health professionals, disease burden, excessive workload, and 24-hour availability, VHVs, especially the vulnerable, were often discouraged, exhausted, and depressed (Jiratchayaporn et al., 2022), which hampered their ability to manage and contain the outbreak (Abbas, 2021). Unplanned massive containment management is another challenge.

2.4.2.2 Large-scale containment

All countries encountered constraints caused by massive measures to contain the COVID-19 pandemic, and they responded with unplanned measures such as lockdown (Tobyn, 2021; Sardar et al., 2020; Kumar & Choudhury, 2020; Glover et al., 2020); changes in movement and transportation policy (da Silva, 2021; Gaskin et al., 2021); travel movement and transport restrictions (Glaser & Krizek, 2021; Mishra & Rath, 2020). The sudden pandemic was difficult for health workers. Every containment measure was rigid. Health workers lack change management skills, according to

Thombre and Agarwal (2021). Health workers lack the skills to shift paradigms. This shortage is health workers' biggest challenge.

2.4.2.3 Management of paradigm shifts

Nothing could be decided before COVID-19. Healthcare workers faced challenges that changed health systems (Marsden & Docherty, 2021). Public transport (Thombre & Agarwal, 2021) and contactless delivery (Kunovjanek & Wankmüller, 2021) are undergoing radical changes. All these measures require operational guidelines and management skills, which health volunteers lack. Paradigm shift management includes public health crisis risk management.

2.4.2.4 Emergency risk management

COVID-19 worsens disease burden inequality in rural areas and requires emergency risk management (Righi et al., 2021). For example, VHVs in Thailand sought local wisdom and medicine (e.g., *Andrographis paniculata*) for a lack of vaccines and medicine and self-made masks for medical masks. Life and health are part of emergency risk management.

2.4.2.5 Life-changing

COVID-19 caused unprecedented disruptions. It caused intense fear (Gupta et al., 2021), affected daily life (Chirisa et al., 2021), increased food insecurity (Delbiso et al., 2021), and boosted online learning globally (Koch et al., 2021; Maqableh & Alia, 2021). Life and social relationships changed dramatically (Fatmi et al., 2021). Vulnerable groups such as migrant workers, asylum seekers, indigenous communities, children, and the elderly face greater challenges (Georgios & Barra, 2021; Naughton et al., 2021). Rural health workers manage health effects. Communication and information-sharing constraints exacerbated COVID-19's effects.

2.4.2.6 Communication and information-sharing restrictions

Ineffective communication and IT systems make COVID-19 prevention and control



difficult (Tejativaddhana et al., 2020). In this situation, health workers can't get reliable information, such as positive test results, in a timely manner (Kaweenuttayanon et al., 2021). Communication and IT were used to get reliable information quickly. However, health workers in remote areas in some countries like China experience network and literacy problems (O'Connor et al., 2021). These problems are worse for Geographic Information Systems (GIS), Big Data technologies, and data-driven systems for rapid knowledge acquisition (Zhou et al., 2020). When ecological disparities threaten public health, technology is crucial.

2.4.2.7 Environmental disparities

Several scholars (e.g., Malatzky et al., 2020; Agnoletti et al., 2020) emphasized the importance of location to containment. In illiterate areas, technology also limits health workers. Geocentric and anthropological approaches were adopted to mitigate local

transmission (Nath et al., 2021), and international border controls were integrated with the long-term social and political consequences of border management (O'Connor, 2021).

VHVs face all the above challenges. Thailand is preparing for normalcy while the outbreak continues. Trip readiness must be explored for VHV potentials and challenges.

To do so, a study framework and research questions can be determined based on prior research and document analysis of COVID-19 in Thailand.

3. Framework of the Study and Research Questions

3.1 Theoretical and conceptual framework of the study

The theoretical and conceptual framework of the study can be presented below.

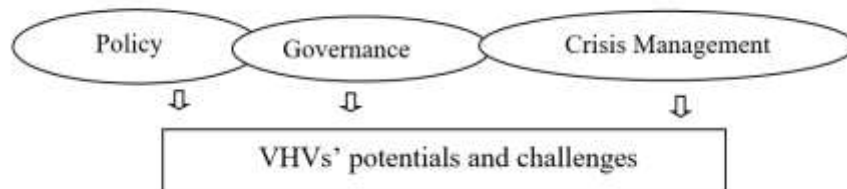


Figure 1 The theoretical and conceptual framework of the study

Figure 1 shows the study's theoretical framework. This study aimed to investigate how VHVs managed the crisis to gain insights into their potential and challenges in three major areas: policy initiatives (travel & cross-border restrictions, multi-sector cooperation, and lockdowns), healthcare governance (multi-level governance, socially innovative governance, community solidarity, and public awareness), and crisis and risk management (administration of public health affairs, and emerging measures and technologies).

3.2 Research questions

In relation to the framework of the study, the research questions were determined as

follows:

What are the potentials and challenges for VHVs in managing health services in responses to COVID-19 management?

4. Method

4.1 Research methodology and rationale

4.1.1 Methodology

This study was qualitative. These were the reasons. This 2019 pandemic was new. Thailand was the first country outside China to contract COVID-19 on January 13, 2020. Virus containment VHVs were assigned nationwide. This study examined VHVs' potential and challenges in providing health service



management in COVID-19 responses to gain new insights and provide recommendations for Thailand's journey to normal and the subsequent outbreak. VHVs were the key informants to draw new insights because there was no prior knowledge of this pandemic and nothing could be rigidly decided beforehand. These insights also explain why Thailand is the only developing country among the top ten most successful ones. Qualitative research preserves informants' voices and perspectives. It's adaptable to new issues. The qualitative approach is more adaptable to new ideas and patterns than other approaches.

4.1.2 Design

This study looked at VHVs' experience and management in responding to COVID-19. Real-world data occurs naturally. Focus groups and in-depth interviews were best for this study. Fieldwork provided in-depth, meaningful insights into the outbreak in the real world and helped focus on clusters in small areas. Focus groups preserved the voices and perspectives of VHVs in natural settings while working in their communities when interpreting data. After the focus group, the VHVs' feelings, impressions, and perspectives needed to be gathered. The researchers asked follow-up questions to learn more. Such intuitive and subjective personal input can only be obtained through qualitative research methods like lengthy individual or face-to-face or in-depth interviews to elicit extremely candid, highly complex responses to elicit VHVs' insight or perspective on specific issues in the areas. Unstructured, informal, and direct conversation helped researchers understand VHVs' beliefs, values, understandings, feelings, experiences, and perspectives on the spread in their areas.

This study used reliable documents to understand VHVs' health services management in response to public policy initiatives. Included documents: public policy initiatives and public records (e.g., official health organization's activities and strategic management to tackle transmission), personal documents (e.g., health

services accounts of individual VHVs' actions, experiences, and beliefs in duty logs, incident reports, reflections and journals, newspapers, and Facebook posts), and physical evidence (objects found within the study setting, flyers, posters, agendas, handbooks, and training materials). Qualitative research methods like document analysis give emergence responses a voice and help them make sense. They also give researchers new ideas and improve questions about development and transmission.

The three qualitative research methods—document analysis, focus group, and in-depth interview—were triangulated to seek convergence and corroboration to provide credible evidence. Corroborating findings across data sets helped reduce potential bias.

4.2 Participants

4.2.1 Rationale for the participants

40 VHVs participated in focus groups and 15 in semi-structured in-depth interviews. Ayutthaya and Nakhon Si Thammarat provided focus group VHVs. They were selected because they share similar features: red zones, ongoing outbreaks, big cities with industrial areas, and socio-economic and cultural diversity. Both cities have geography that fits this study.

Ayutthaya is near Bangkok, Thailand's capital and the country's worst concentration. Bangkok, the epicenter of the outbreak and clusters, is 78.8 km away. The city is the gateway to the north, northeast, and west. It can spread the virus to 50 cities (out of a total of 77 cities). This study chose it because it's better than Bangkok's neighbors.

Nakhon Si Thammarat is in the south. It's the biggest and most populous city (1.5 million people, or approximately 19 percent of the population of the whole region). It's the gateway to several southern Malaysian cities, where the outbreak was worse than in Thailand.

Due to their geography and area-specific differences, these two cities were chosen for this study. The 40 focus group participants were divided into 4 groups, 2 from each city, with 9-11 members. This was done to confirm results



within and between cities.

4.2.2 Participant characteristics

55 VHV's from different cities and parts of Thailand were interviewed in-depth to confirm the focus groups (such as Nan and Lumpang in the north, Ratchaburi in the west and a border city of Myanmar, Saraburi in the central and a neighboring city of Ayutthaya, and Mahasarakham and Yasothon in the northeast). Face-to-face, online, and phone interviews were conducted. The interviews sought confirmation, clarification, and additional information on focus group results and local transmission in the area and nearby. All key informants are community members, at least 45 years old, have 10 years of VHV/leader experience, and have received COVID-19 training.

4.3 Data collection

During the 2nd outbreak wave, April–November 2021, two focus groups were held. Ayutthaya and Nakhon Si Thammarat were in August and September. In December 2021, VHV's nationwide were interviewed in depth. The data came from a multi-sector, multi-pronged action plan. Focus groups were used to elicit VHV's knowledge or perspective on how they experienced and managed the outbreak.

4.4 Instruments for data collection

Focus groups, document analysis, and in-depth interviews elicited data.

4.4.1 Focus groups

These instruments sought to understand how VHV's respond to policy initiatives and how they implement policies. The researchers recorded their conversations, noted their opinions and ideas, looked for variations or inconsistencies in the participants' experiences and practices, and the insights contributed to VHV's potential and challenges.

4.4.2 Data analysis

This document contained COVID-19 VHV policies. Online documents came from the Department of Disease Control, Ministry of Public Health.

4.4.3 Interviews

These instruments elicited these data:

detailed information about VHV challenges and understanding why things happened.

4.5 Data analysis

Three well-trained coders transcribed, encoded, and decoded focus group and interview data. Coding rules were set based on terms (namely potential, challenges, and insights). A codebook was also created, tested, revised codebook, and modified coding instructions. Three coders used the revised codebook. The data were coded and recorded. The reliability of all coded and recoded data was checked. Finally, an analysis was run to draw patterns, intersections, and distributions. The data were triangulated. Coders discussed inconsistencies. Conclusion was drawn based on consensus.

4.6 Validity and reliability checks

This study relied on authentic and reliable documents to ensure construct credibility, while secondary ones (if consistent) checked reliability. To construct internal validity, triangulation was used to check every step of data collection and analysis by comparing data in the same and different contexts. To check the reliability and validity of the constructs, the coding and recoding results of three coders with more than ten years of research experience were compared and talked about (if they were different) until a consensus was reached.

5. Results of the Study

The results of the study are presented in relation to the three RQs respectively.

5.1 Potentials of local VHV's in mitigation of COVID-19

Below are the results of RQ 1 (What can VHV's do to help manage health services in response to COVID-19 policy initiatives, governance in health care services, and crisis management and risk management?)

“There are more than 1,040,000 VHV's throughout Thailand. We've performed fundamental healthcare tasks since 1977. We fought against epidemics like SARS and H5N1. There are now VHV's in every village. One VHV is



in charge of 10-15 households, and there are approximately 20,000–30,000 VHV in one city.”
 [Interviewees 1 and 2]

“We are successful because we were born here and live here. We know all the members. They are our friends and family”.
 [Interviewee 3]

Since 1977, VHV have been in charge of primary health care in the healthcare system. Currently, they are the key factor in mitigating the spread of COVID-19 in all cities except Bangkok. All VHV are community members, so the bond between VHV and their community was strong and close. They can achieve timely and effective local transmission containment. Their remarkable potential fell into three aspects: health service management in response to public policies, governance in healthcare services, and health communication and solidarity. Each aspect is detailed below.

5.1.1 Health service management in response to public policy initiatives

“We work in response to policy initiatives and adhere to MOPH guidelines against COVID-19. Every day, we knock at 15 doors to contain COVID-19”.
 [Interviewees 4 and 5]

The following are Thailand’s public policy

initiatives. Lockdowns and curfews were nationwide. Travel restrictions, border closures, foreign visitor bans, and entry prohibitions were also implemented. Businesses, schools, and other public places are closed. Events and campaigns were canceled. International travel was restricted. However, most were unplanned and uncertain.

“As soon as the clusters of the Lak Si construction camps were announced and closed, hundreds of laborers left Bangkok for their homes in all parts of Thailand. No policies in response to this closure were followed. VHV were unprepared for this arduous burden. We work 10 times harder. Therefore, it is necessary to look into VHV’s governance, processes of interactions, and operations”.

[Interviewees 6 and 7]

5.1.2 VHV’s Governance in Healthcare Services

“Every day, we go to every family for the purpose of tracing and confirming cases. When a new case is confirmed, we take care of them in home isolation”.

[Interviewees 8–9]

VHV focus on surveillance, prevention, and emergency control as summarized in Table 1.

Table 1 VHV’s responsibility on public surveillance, prevention, and control of COVID-19

VHV’s duty and responsibility	Ayutthaya	Nakhon Si Thammarat
1. Local surveillance field processes (e.g., proactive screening, timely reporting of early detected cases, follow-up on treated individuals, etc.)	✓	✓
2. Empowering members of the community through self-care, caring for others, and COVID-19 prevention	✓	✓
3. Door-to-door service to reduce time and distance gaps and facilitate remote early detection.	✓	✓
4. Reduce the number of COVID hospitalizations.	✓	✓
5. Assisting the local community with sub-district health workforce management for COVID-19 prevention and control	✓	✓
6. Conducting background checks on all household members and foreign returnees	✓	✓
7. Obtaining medical referrals from sub-district health promotion hospitals	✓	✓
8. Providing logistics to improve chronic disease patients’ medication access		
9. Helping local health professionals with quarantine		



10. Mental health and emotional support		
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Table 1 shows VHV's duties in COVID-19 surveillance, prevention, and control. The VHVs in Ayutthaya and Nakhon Si Thammarat followed the MOPH's rules and took the steps they suggested to stop local transmission. Without communication and community support, next explained how VHVs can build community unity.

5.1.3 Communication and community support

"All community members are our relatives or friends. We trust each other, so our communication and collaboration are based on trust, which is critical to our success.

[Interviewees 10]

The effective communication that leads to collaboration, trust, and success includes explaining the job clearly, planning and preparing work, managing systematically, following up and updating progress, listening to problems and working together to find solutions, understanding communities and areas, answering job-related questions, understanding work limitations and VHV members, choosing the right one for the situation, dealing with complicated cases or situations, and working well with others. Still, VHVs and HVs faced challenges.

5.2 VHV's health service challenges

5.2.1 Inconsistent and unhelpful policies

"The public policies during COVID-19 were inconsistent and lacked mechanisms to support them. It was hard to keep up with a series of unknowns, which led to a lot of fake news".

[Interviewees 11, 12, 13]

All policies were centralized and centralized decisions lacked support. For example, Bangkok's sudden lockdown and business closures spread uncontrollably across Thailand.

5.2.2 Late policy decisions

"When decision-making on crucial, massive policies is delayed, it doubles the jeopardy".

[Interviewees 7, 12, 13]

Vital decisions (such as vaccine and proactive tests) were delayed for days. These factors exacerbated the problems.

5.2.3 Insufficient vaccines or test kits

"People wonder about vaccine quality and delays. Rural residents aren't immunized. We should have been vaccinated earlier as frontline fighters. Why do some get a second dose? But we get none. We fear spreading a virus to our family. 11 million people still want vaccines today".

[Interviewees 1, 3, 5, 8, 12 and 14]

Insufficient facilities hindered COVID-19 containment. This caused more burden inequality in several areas, especially Myanmar's borders (Ratchaburi and Kanchanaburi), where transmission was severe. Rising numbers of infected patients and an inability to test them have overburdened these areas.

5.2.4 Ineffective risk and crisis management

"There is a big difference between the first wave and the second one due to poor management, communication breakdown, and inaccessibility to technology support for healthcare services". [Interviewee 4, 10, and 13]

"Critical policies like lockdowns were implemented without notice or support. Fake news is spreading and makes harder for us".

[Interviewees 6 and 9]

"How can people access healthcare apps? We don't have Wi-Fi, and don't use cellphones. It's hard to contact people".

[Interviewees 7 and 15]

"During COVID-19, knowledge and information gaps widen. We should've had the technology". [Interviewees 1, 11, and 13]

All these - poor policy management, communication breakdown, inequality of knowledge and information-sharing, confusion



between facts and rumors, and inaccessibility to technology support for healthcare knowledge gaps all contributed to ineffectiveness - led to personal and time constraints, problems with coordinating and working together to move the patient, and problems with coordinating between VHVs, with risk groups, and with local officers.

6. Conclusions and Discussion

6.1 Conclusion

The study revealed these key research findings. Thailand's potential relies on its local VHVs' ability to manage these three key aspects: (a) health service management in response to public policy initiatives, (b) VHVs' governance in healthcare services, and (c) their effective communication and solidarity. However, they experience these key challenges in providing their services: (a) inconsistent and inflexible policies and lack of supporting measures, (b) delayed decision-making on crucial, massive policies, (c) improving the practices of public health crisis management, and (d) insufficient vaccine and test kits. New insights support the following recommendations: (a) evaluating the effects of policy initiatives; (b) giving VHVs a more proactive role in decision-making; (c) improving public health risk and crisis management practices; and (d) providing adequate vaccines and test kits.

6.2 Discussion

The findings clarify how VHVs are managed in response to COVID-19 and support a previous study. This study supports previous studies (e.g., Kumar and Choudhury, 2021; Sardar et al., 2020) that lockdown curfews are ineffective in low-risk areas. This study suggests the policies shouldn't be applied nationwide and long-term.

VHVs' active roles will be more effective if stakeholders tailor multilateral cooperation and networking coordination to local realities. This study recommends localizing preparedness through multilateral cooperation. In response to the pandemic, the recommendation should

focus on immediate, area-specific actions, resources, soft power, socio-political systems, and local governance. These recommendations will help other middle-and low-income countries with inadequate health infrastructure, such as Bangladesh (Sattar et al., 2020), India (Raju & Ayeb-Karlsson, 2021), Mali (Sagaon-Teyssier et al., 2020), and Ethiopia (Delbiso et al., 2021).

Governance drives VHVs' ability to manage health services. This study supports Dutta and Fischer (2021), Georgios and Barra (2021), and Shaw et al. (2020), indicating that governance is the future of COVID-19 containment. VHVs have similar health service and promotion duties as previous research (e.g., Marddent & Arporn, 2021; Tejativaddhana et al., 2020). This study's VHVs are third-party coordinators like prior study (e.g., Vongsayan & Nethipo, 2021; Langkulsen & Rwodzi, 2021). VHVs are emotional and healthy role models like the studies by Osewe et al. (2020). This trust makes sure that COVID-19 surveillance runs smoothly with few resources (Bezbaruah et al., 2021; Triukose et al., 2021).

This study highlights multi-level governance and addresses the importance of stakeholders to COVID-19 policy challenges (Hirschhorn, 2021), strategic management and assessment (Chatterjee et al., 2020), crisis management of prevention measures (Abbas, 2021), geographical risk management (e.g., Laroze et al., 2021), and the role of ecosystems (Everard et al., 2020; Nuryana and Fauzi, 2020). This study integrates governance into three aspects of VHVs' performance: responsibilities, communication, and cooperation/coordination. This study highlights the strong bond between VHVs and their communities based on their innate abilities, trust, and solidarity. VHVs are bonded.

This study found that VHVs face crucial challenges and psychological constraints (such as anxiety about infection risk, stress from getting infected and spreading it to family, and insufficient protective equipment), like health

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workers in Mali (Sagaon-Teyssier et al., 2020). VHVs face aging and health issues, as Jamjumrus found (2021). Few health professionals, disease burden, and exhaustion are problems (Jiratchayaporn et al., 2022). All of these things hinder VHVs' outbreak management and control (Abbas, 2021).

This study recommends improving VHVs' practices based on evidence-based management and a decentralized management style rather than Thailand's centralization style. Unlike those studies (e.g., Thombre & Agarwal, 2021), this study suggests allowing VHVs to make flexible decisions to provide timely health services. This will help VHVs provide health services despite policies and measures that are inconsistent and hard to change, a lack of supporting measures, and policy decisions that take too long to be made.

6.3 Recommendations

This study's originality is in its policymaker insights. COVID-19 for low- and middle-income countries should consider lessons from Thailand's VHVs. Although VHVs in Thailand cannot be directly applied to other contexts or countries, their practices can be integrated into their health systems. In this integration scheme, trained local health volunteers in village units across the country help health professionals respond to COVID-19. This scheme needs geocentric and anthropological approaches to provide timely, efficient, and effective health services. Local health volunteer success depends on close cooperation and trust-based information-sharing of community COVID-19 statistics and spread. The increased cooperation and exchanges help reduce remote areas' inaccessibility to online communication technology due to inefficient infrastructure, financial constraints, and technological illiteracy. This integration scheme will be more effective if it is driven by a decentralized style of management.

6.4 Suggestions for future inquiry

This study was based on individual-level data, so it is limited by qualitative research

subjectivity and participant numbers; future study suggestions must be verified by quantitative research objectivity.

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