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Prevention and Control of Epidemic Outbreaks by the Mechanism of the District Health Board

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ABSTRACT

The purpose of this research was to analyse the factors of the mechanism in preventing and controlling the epidemic outbreaks in the community by the District Health Board. The sample consisted of 475 District Health Board members in Nakhon Si Thammarat, Thailand, using a simple random sampling method. The research instrument used in collecting the data was the questionnaires based on the components of the DHB's working guidelines, known as "UCCARE". The level of measurement was the ratio scale, and Cronbach's alpha coefficient was 0.936. In addition, descriptive statistics and confirmatory factor analysis were conducted.

There were six components in the Confirmatory Factor Analysis and 32 observed variables. The research model agrees with the empirical data (χ^2=1,610.79, χ^2/df<0.001, GFI=0.845, AGFI=0.842,CFI= 0.919, and RMSEA= 0.056). The variables that have been chosen to prevent and control epidemic outbreaks by the District Health Board were 11 observed variables as follows 1) two variables of Unity District Health Team,(2 two variables of Customer Focus,3.) two variables of Community Participation4) a variable of Appreciation5) two variables of Resource Sharing and Human Developmentand 6) two variables of Essential Care.

Based on the findings, it was concluded that the components of the DHB's working guidelines, known as "UCCARE", could be applied as the mechanism for preventing and controlling the epidemic outbreaks in the community and could be used as the guidelines of development in preventing and controlling the epidemic outbreak which is corresponding to Thailand context.

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1. INTRODUCTION

World Health Organization (WHO) declared the outbreak of coronavirus disease (COVID-19), an infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS- CoV-2 virus), as a Public Health Emergency of International Concern (PHEIC) on 30 January 2020 [1].Individually, affected countries, including Thailand, adopted the development and updating of public health guidance to reduce the potential spread and impact of infection by making use of a combination of public health measures, such as rapid identification, diagnosis and management of the cases, identification and follow up of the contacts, infection prevention, control in health care settings, and more vulnerable populations implementation of health measures for travellers, awareness-raising in the population and risk communication [2]-[5]. Globally, there was, however, an upward trend of COVID-19 infections, rising COVID-19 cases and deaths at the global, regional, and country scales, although the country

preparedness and response to COVID-19 were implemented as per the guidance recommendations issued by WHO and national health authorities. The assessments were based on critical data and trends and other pertinent epidemiological information concerning the COVID-19 outbreak and the virus spreading rapidly to other countries worldwide after the COVID-19 cases were first detected in China in December 2019. This led WHO to characterise the outbreak as a pandemic on 11 March 2020 [6]-[7]. As of 4 January 2023, the COVID-19 pandemic is a global outbreak causing 270,009,126 confirmed cases and 2,158,171 confirmed deaths [8]. In the context of public health response to COVID-19 at national and sub-national levels, WHO addressed that had planned to contain local transmission of COVID-19 up to low-level or zero transmission, affected countries can adopt whole-of-society strategic action so that the specific national and subnational-situations-and-capacities to gear up existing systems and effective mechanisms through participation approach [9]-[14].

The influent factors of success in developing the Quality of life are the cooperation and integration of working at the province and district levels. The district board committee should have review meetings, provide feedback information, and follow the operation results strictly. They should bring some man, money and material that can support the development of their quality of life in that community. Also, the people in that community have the knowledge and various capabilities that will be easy for action [15]. Similarly, when they got funds and a clear policy and process, they understood team unity and gave their mind to their people. In addition, cooperating the partnership networks, complementary and value will improve quality of life [16]. Moreover, the people's positive role in health strategies during the COVID-19 pandemic, even though respiratory disease management in the future, including the cooperation of people and partnership networks, should continue even after the pandemic decreases [17].

During the COVID-19 pandemic, prompt responses against the spread of COVID-19 by taking policy measures are crucial for a crisis. After WHO declared the COVID-19 pandemic, the Thai government employed a state of emergency in response to COVID-19 risks and situations that can threaten the country [8]. Based on key components of the State of Emergency, the Thai government established the Centre for COVID-19 Situation Administration (CCSA) at central and ministerial levels that can embrace such risks or crises by provisioning the infrastructures and the legal and operational frameworks. Concerning constitutional and legislative bases for the circumstances of the COVID-19 situation and the administration of the central-level CCSA, the CCSA at the ministerial level must consider the operational requirements as per declaration, communication, proportionality, legality, and intangibility [5]. For instance, the CCSA at the Ministry of Interior officially proclaimed the notifications of the measures without massive derogation of human rights that can apply to the area of application, legality and implementation upon their operational requirements and duration [18]. Regarding this, the Committee of local development policy of the Quality of Life (CLDQL) is a key sector in response to curtailing the spread of COVID-19 in local communities at provincial and district levels across the country under the supervision of the Ministers of Interior and Public Health as per the regulation of the Prime Minister's Office on the Local Development of Quality of Life (B.E. 2561). At the district level, the CLDL's mechanism relied on the operational requirements for surveillance, control, and prevention of local transmission of COVID-19 in charge of the committee of district-level development policy of the quality of life (CDDQL) [19]. The response to COVID-19prevention and control measures must be implemented at the provincial, district, subdistrict, and village levels. Provide themeasures and mechanisms implemented by DHS. Participation by the government, private, and community sectors are the processes that facilitate interaction among relevant parties or stakeholders. Actions that lead to communication and mutual understanding until the objective is achieved influence demand consistent with people's lifestyles [20]. Participatory development is an effective strategy for resolving public problems. According to the study's findings, involvement was vital to dealing with the COVID-19 pandemic.[21]-[25], while the Sustainable Development Goals (SDGs) were developed by the United Nations (UN), establishing a growth strategy based on the principle of "leaving no one behind" to increase the quality of life for individuals of every age group [5].

Many countries have established health authorities to allow governments, the private sector, and communities to participate in the health care of their populations. Thailand has devised a strategy for implementing the district health system, supervised by the District Health Board (DHB). This is due to a relationship between organisations in the district's area. Responsible for connecting health operations, coordinating, and sharing resources (personnel, budget, materials, technical support, and information system utilisation management with partner organisations in the area comprehensively and fairly and being consistent with the local context that may be integrated into all sectors. The goal is to enhance health service administration and society systematically [19]. The following are the components of the DHB's working guidelines, known as "UCCARE": 1) The Unity District Health Team; 2) Customer Focus; 3) Community Participation; 4) Appreciation; 5) Resource Sharing and Human Development; and 6) Essential Care.

Nakhon Si Thammarat Province, Thailand has implemented the DHS policy to prevent and control the pandemic, as it did during the COVID-19 outbreak. COVID-19 is an emerging disease that tends to be complicated, violent, and difficult to control. As a result, the functioning of the DHS is one of the essential processes for driving solutions and development that satisfy the requirements of the people in the areas. DHS is a decentralised form of government that attempts to develop a culture of collaboration across all sectors and levels, from operation policy [26]. However, Nakhon Si Thammarat, Thailand, has not brought problems related to epidemic prevention and control into issues to solve together in each district. This might be because the people or the DHB believe it is the agencies' responsibility under the Ministry of Public Health.However, DHS has not taken the disease epidemic issue seriously in some districts. Therefore, the implementation of epidemic prevention and control by DHS (six

elements) can achieve better prevention and control. Furthermore, it also develops the government's potential in light of the public's expectation of successful epidemic prevention and control in the future.

The performance of epidemic prevention and control by DHS can be analysed to develop guidelines for developing epidemic prevention and control that may occur in the future. Therefore, this study aims to explore the components of the district health system's epidemic prevention and control operations.

2. METHOD

The concept of the DHB with the six components known as "UCCARE", has been used as the mechanism to drive and carry out the prevention and control of epidemic diseases in the community, as shown in Figure 1

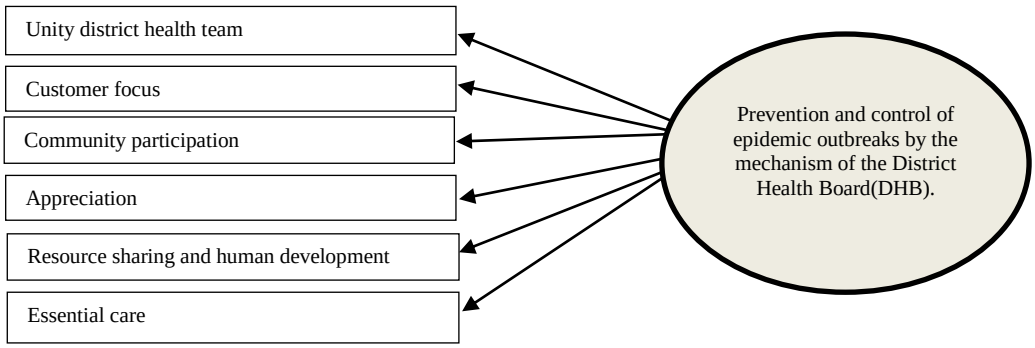

Figure 1 Conceptual framework

The study design was a cross-sectional study. The target group was 492 committees of the DHB from 23 districts in Nakhon Si Thammarat Province, Thailand, according to the research by R. Pechnil [27]. To compute the sample size determination when comparing with the finite population [28] and assigning that αis equal to0.05, β is equal to0.1 showed that the level of the District Health Board was at the high level, which was 17.30 per cent from the 429 sample groups. Furthermore, to prevent the loss of data, there would be an increase in samples from one to two samples per district. Therefore, there were 475 participants in 23 districts. The qualifications of the respondents were as follows 1) Being appointed to the committee of the District Health Board, 2) Being a person who is still working for the District Health Board, and 3) Being consent to participate in the research.)Figure 2)

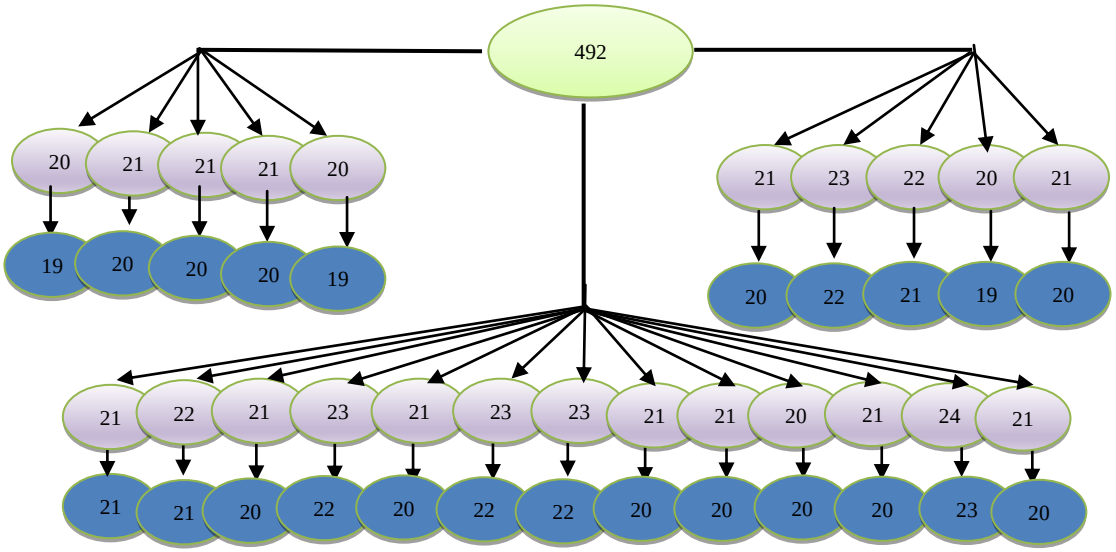

Figure 2: The graph shows the number of samples.

It could be seen that the conceptual framework could have 32 observed variables after considering the sample size from the ratio concept of samples and the parameters or 10–20 observed variables per observed variable [29]. Therefore, there would be 320–640 samples in this research. The reason was that 475 participants did the questionnaires, the identified samples in this factor analysis. Thus, this was in accordance with statistical analysis.

The research tool was a questionnaire developed on the concept of the DHB with the six components known as "UCCARE", which has been used as the mechanism to drive and carry out the prevention and control of epidemic diseases in the community, by the researcher, including three parts as follows.

Part 1. Personal characteristics, seven items, consisting of 1) gender, 2) age, 3) marital status, 4) education level, 5) occupation, 6) role in DHB and 7) experience in working as a committee of the DHB.

Part 2. Guidelines questionnaire based on UCCARE with six components in the implementation of community epidemic prevention and control by the mechanism of the DHB, consisting of 32 items: Unity district health team (6 items), Customer focus (6 items), Community participation (5 items), Appreciation (5 items), Resource sharing and human development (5 items), and Essential care (5 items). Each item was a highest to lowest 5-Likert rating scale on appreciation level.

The content validity of the questionnaire was confirmed by three experts, obtaining IOC scores ranged 0.67 - 1.00. Reliability was verified using Cronbach's alpha coefficient, getting a value of 0.928.

Data collection was carried out during August 2022 with the following procedures.

1. Work with every district's District Public Health committee through a secretary or research assistant to collect questionnaires.

2. Submit the notification letter from MahaSarakham University to the District Chief and all districts public health in Nakhon Si Thammarat Province, Thailand, to inform them of the reasons for the study and ask for permission to collect data.

3. Proceed to clarify the research objectives details and ask for cooperation in collecting data by the public health district or the research assistant to distribute the questionnaires to the sample group.

4. Mail the questionnaires to the research assistant, and when completed, ask the research assistant to check them for accuracy and completeness before sending them back to the researcher by mail.

5. Validate the obtained data for accuracy to be analysed by statistical methods.

Data analysis

1. Descriptive statistics included the distribution of frequency, percentage, mean and standard deviation. The maximum and minimum values were used to analyse personal characteristics factors, the level of UCCARE implementation, and community epidemic prevention and control operation.

2. The factor analysis by using ehtstructural relationship of confirmatory factor analysis aimed to verify the structural validity by considering the accordance of model and the empirical data, which is a permanent variable or have values on the ratio and interval scales, the correlation between the variables ought to be relatively high (r = 0.30 to 0.70). The statistical results that were used to confirm and demonstrate that the research model agrees with the empirical data include χ^2=1,610.79, χ^2/df<0.001, GFI=0.845, AGFI=0.842, CFI=0.919, and RMSEA=0.056. The criteria before using confirmatory factor analysis were 1) Normal Distribution of data, 2) Homoscedasticity of data, 3) Linear Relationships between variables, and 4) The error is irrelevant to the latent variable [30].

3. RESULTS AND DISCUSSION

The results of the research were as follows.

1. More than half of the sample was female (59.79%), aged between 23 and 80, with an average age of 49.68 (*S.D.*= 10.55). Most of them had a bachelor's degree (79.37%), were government officials or state enterprise employees (69.05%) and were government representatives (61.47%). Almost half of them (44.63%) had working experience as a DHB committee member for three years (max= 5, min= 1). And the average working experience was 3.37 years (*S.D.*= 1.30). (Table 1)

Table 1Demographic profile (n= 475)

Demographic profile	n (%)
Gender	
Male	284 (59.79)
Female	191 (40.21)
Age	
>30	22 (4.63)
30 – 39	64 (13.47)
40 – 49	129 (27.16)
50 – 59	195 (41.05)
≥ 60	65 (13.68)
($\bar{x}$ = 49.68, *S.D.*= 10.55, Maximum = 80, Minimum = 23)	
Status of Marriage	
Single	60 (12.63)
Married	377 (79.37)
Widowed/Separated/Divorced	38 (8.00)
Education Status	
Lower Bachelor' Degree	55 (11.58)
Bachelor' Degree	328 (69.05)
Post-Graduate	92 (19.37)
Main Professions	
Government/State Enterprise	292 (61.47)
Personal Matters	78 (16.42)
Agriculture	60 (12.63)
Working for Pay/Traed	29 (6.11)
Priest/Pensioner/ A Local Official	16 (3.37)
Role of the District Health Board	
Chairman/ Director and Secretary/ Assistant Secretary	69 (14.53)
Governmental Representatives	212 (44.63)
Private sector Representatives	68 (14.32)
Public Sector Representatives	126 (26.53)
Experience at workof the District Health Board	

Demographic profile	n (%)
1	55 (11.58)
2	61 (12.84)
3	131 (27.58)
4	110 (23.16)
5	118 (24.84)
($\bar{x}$ = 3.37, S.D. = 1.30, Maximum = 1 ปี, Minimum = 5)	

2. The result of Confirmatory Factor Analysis (CFA to prevent and control epidemic outbreaks by the District Health Board, which consists of 6 components as follows 1) 6 items for Unity District Health Team, 2) 6 items for Customer Focus, 3) 5 items for Community Participation, 4) 5 items for Appreciation, 5) 5 items for Sharing and Human Development and 6) 5 items for Essential Care; as shown in the factor model of figure 3.

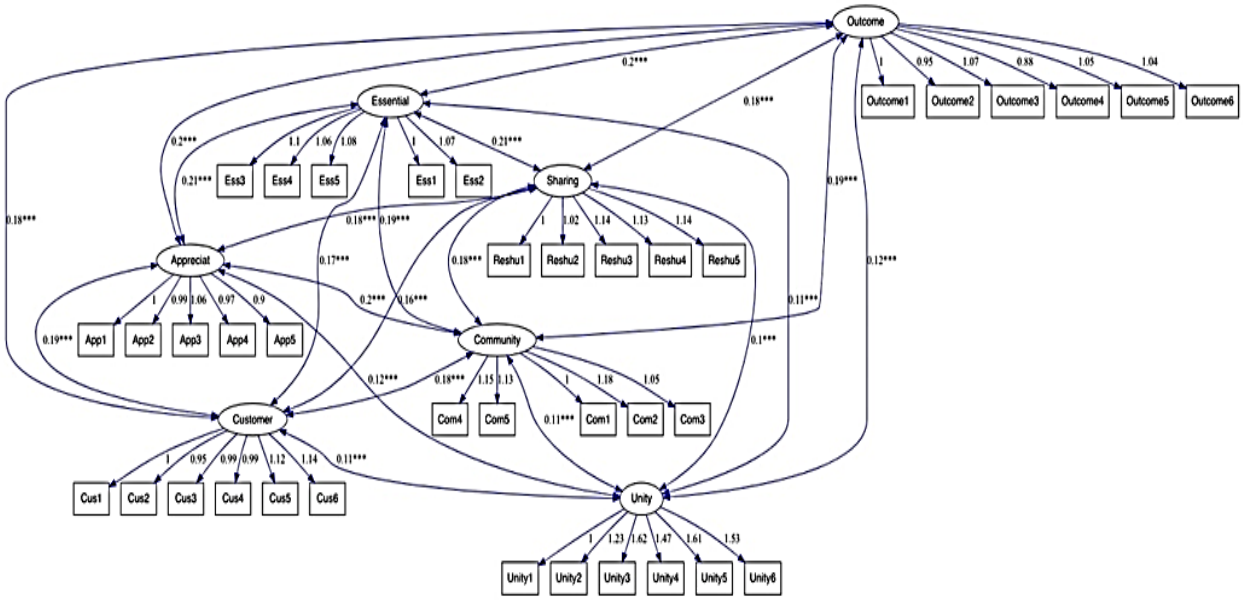

Figure 3: Component Measure Model is fit to the Empirical Data

Figure 3 shows a component model that is fit to the Empirical Data because of the overall model fit measure, as shown in Table 3

Table 3 Statistical analysis of a component fit Model that responds to the Empirical Data

Index	**Criterion**	**Statistical analysis**
χ^2/df	< 3	< 0.001
GFI	≥ 0.90	0.845
AGFI	≥ 0.90	0.822
NFI	≥ 0.90	0.873
IFI	≥ 0.90	0.920
CFI	≥ 0.90	0.919
RMR	< 0.05	0.016
RMSEA	< 0.05	0.056

Table 3 indicates that the Comparative Fit Index (CFI) of the Confirmatory Factor Analysis is equal to 0.919 or 91.9 % (The CFI must be between 90–95%) and also uses the result of the Confirmatory Factor Analysis to analyse the Component Fit Measure as shown in Table 4

Table 4 shows the results of prevention and control of epidemic outbreaks by the mechanism of the District Health Board due to the Confirmatory Factor Analysis

Confirmatory Factor	**Observed variables**	**Weight**	
		b	**95% CI**
Factor I : Unity District Health Team	1. The district had a board of committees in epidemic prevention and control in the community	1	-
	2. The district had a board of committee in epidemic prevention and control consisting of members of public, private, and civil society sectors	1.234	1.018 – 1.450
	3. The district holds meetings to prevent and control epidemic diseases in the community at least four times/year.	1.619	1.355 – 1.883
	4. The district has together set and planned goals for preventing and controlling the epidemic in the community.	1.465	1.245 – 1.686

Confirmatory Factor	Observed variables	Weight	
		b	95% CI
	5. The district has used the disease outbreak information to plan to prevent and control the epidemic in the community.	1.610	1.375 – 1.846
	6. Committee matches his/her expertise and is suitable for the current working position in improving people's health.	1.526	1.276 – 1.777
Factor II: Customer Focus	1. The district has a process to allow people to listen to them, expressing their opinions about preventing and controlling epidemic disease in the community.	1	-
	2. The district has publicised to inform people about the prevention and control of the epidemic in the community through meetings with adults, subdivisions and heads of government agencies.	0.952	0.819 – 1.084
	3. The district has brought the needs of the people in the prevention and control of the epidemic to be integrated with various work systems.	0.987	0.851 – 1.123
	4. The district has community epidemic prevention and control work to ensure people's confidence, faith, commitment, and participation.	0.992	0.862 – 1.122
	5. The district has many channels for people at risk of infectious disease outbreaks occurring in the community, such as websites, Line applications, radio broadcasts, etc.	1.122	0.982 – 1.262
	6. The district has improved channels for people to receive more effective information.	1.144	0.966 – 1.291
Factor III: Community Participation	1. Communities and networks are involved in preventing and controlling epidemic outbreaks in the community to solve problems in the area.	1	-
	2. Communities and networks have jointly conceived, planned and improved processes for preventing and controlling epidemics in the community.	1.176	1.050 – 1.301
	3. The operations for epidemic prevention and control in the community involved people, money, materials, and a system of joint operations between the people and the public and private sectors.	1.046	0.918 – 1.173
	4. Communities and networks in the district jointly assessed the performance of prevention and control of epidemics in the community.	1.149	0.016 – 1.281
	5. Organisations in the community have supported the budget for preventing and controlling the epidemic.	1.131	0.992 – 1.271
Factor IV: Appreciation	1. The board of committee and network partners participated appropriately in preventing and controlling epidemic outbreaks in the community.	1	-
	2. The board of committee has implemented the plan to prevent and control the epidemic in the community.	0.992	0.886 – 1.098
	3. The board committee held a meeting and had inspiring words of gratitude to build strength and unity in the community.	1.061	0.944 – 1.179
	4. Communities in the area benefit from preventing and controlling epidemic outbreaks in the community.	0.966	0.865 – 1.068
	5. As a member of the board of committee, I am happy and proud of the actions for preventing and controlling the epidemic in the community.	0.903	0.801 – 1.005
Factor V: Resource Sharing and Human Development	1. The agency has appropriately supported the budget for preventing and controlling the epidemic in the community.	1	-
	2. The agency has effectively supported and planned for personnel to participate in preventing and controlling epidemic outbreaks in the community.	1.019	0.872 – 1.166
	3. The board of committee has continually and efficiently developed skills for preventing and controlling epidemic outbreaks in the community.	1.140	0.984 – 1.295
	4. The board of committee have allocated resources together and brought resources from the community, leading to sustainability in preventing and controlling epidemic outbreaks in the community.	1.126	0.971 – 1.280
	5. The board of committee has reviewed and improved the resources to increase efficiency in providing the necessary health services according to context.	1.143	0.989 – 1.298
Factor VI: Essential Care	1. The board of committee gathered information about epidemics in the community and analysed it accordingly with the local context.	1	-
	2. The board of committee continuously monitors and evaluates the performance of prevention and control of epidemic diseases in the community.	1.071	0.973 – 1.169
	3. The board of committee constantly reviews and learns about preventing and controlling epidemic outbreaks in the community.	1.096	0.991 – 1.201
	4. The board of committee encourages communities and networks to hold activities continuously to prevent and control epidemic outbreaks in the community.	1.061	0.963 – 1.158
	5. The board of committee has organised a system for preventing and controlling epidemic outbreaks in the community that is integrated with the people.	1.082	0.980 – 1.184

Table 4 shows that Factor 1: Unity District Health Team weighs 1.046–1.619, Factor 2: Customer Focus weighs 0.952–1.144, Factor 3: Community Participation weighs 1.046–1.176, Factor 4: Appreciation weighs 0.903–1.061, Factor 5: Resource Sharing and Human Development weigh 1.019–1.143, and Factor 6: Essential Care weighs 1.061–1.096.

Table 5 shows the variables chosen to prevent and control epidemic outbreaks by the District Health Board.

Confirmatory Factor	Observed variables	Weight
Factor I: Unity District Health Team	The district holds meetings to carry out the prevention and control of epidemic diseases in the community at least four times/year.	1.619
	The district has used the disease outbreak information to plan to prevent and control the epidemic in the community.	1.610
Factor II: Customer Focus	The district has improved channels for people to receive more effective information	1.144
	The district has many channels for people at risk of infectious disease outbreaks occurring in the community, such as websites, Line applications, radio broadcasts, etc.	1.122
Factor III: Community	Communities and networks have jointly conceived, planned and improved processes for	1.176

Confirmatory Factor	Observed variables	Weight
Participation	preventing and controlling epidemics in the community.	
	Communities and networks in the district jointly assessed the performance of prevention and control of epidemics in the community.	1.149
Factor IV: Appreciation	The board committee held a meeting and had inspiring words of gratitude to build strength and unity in the community.	1.061
Factor V: Resource Sharing and Human Development	The board of committee has reviewed and improved the resources to increase efficiency in providing the necessary health services according to context.	1.143
	The board of committee has continually and efficiently developed skills for preventing and controlling epidemic outbreaks in the community.	1.140
Factor VI: Essential Care	The board of committees constantly reviews and learns about the prevention and control of epidemic outbreaks in the community	1.096
	The board of committee has organised a system for preventing and controlling epidemic outbreaks in the community that is integrated with the people.	1.082

Table 5 shows factors that affect the prevention and control of epidemic outbreaks by a mechanism of the District Health Board, as shown in Figure 4

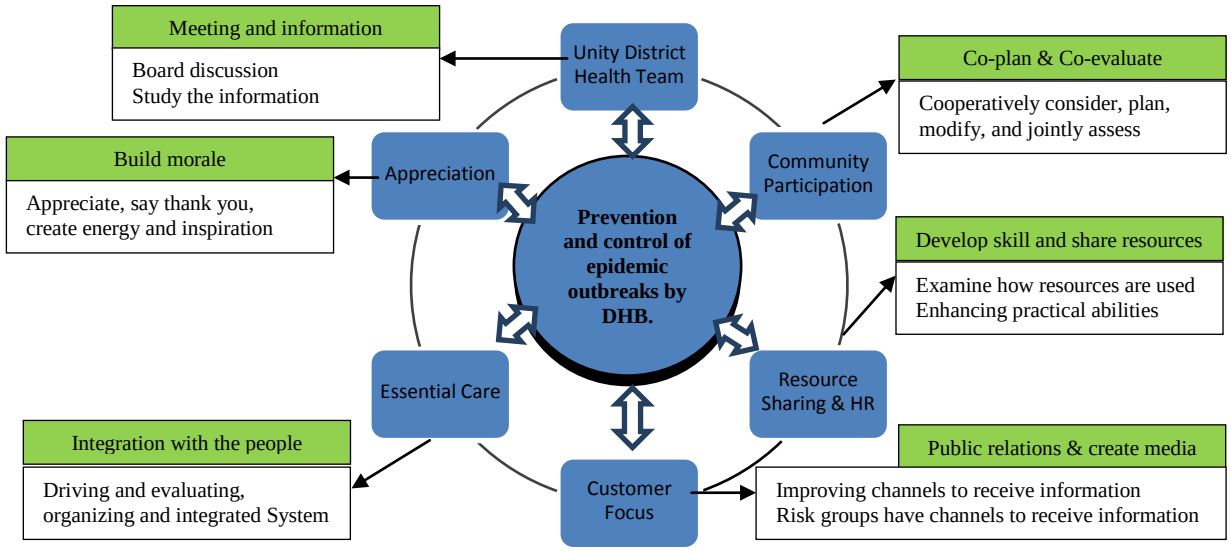

Figure 4 shows the prevention and control of epidemic outbreaks by the District Health Board.

According to the analysis conducted by the District Health System, the Unity District Health Team achieved the greatest result. During the meeting, the Unity District Health Team examined the information about the pandemic, which showed that the team had taken steps to protect itself from COVID-19. Regarding committee meetings, there were both formal and casual occasions.The meeting required debates and the sharing of information, which were essential steps for involving the committee in the problem-solving process. This led to success in Nakhon Si Thammarat over the past year when they dealt with the COVID-19 pandemic and a health problem at the district level. Every area with many people also had integration, which made the community more independent. This was like the country of Malawi, which put health issues at the top of its list of priorities and made malaria policy a national issue. [31] Similarly, the study in Botswana's Mahalapye Health District showed that the committee meeting affects COVID-19 surveillance in the public health system [9]. This indicates that the District Health System would put these steps at the top of its list and keep assessing the pandemic, improving the system. This aligns with the collaborative strategy for preventing and controlling the health pandemic in both the public and private sectors, including social security, in both domestic and international settings, and would result in the success of Thailand's efforts to control the pandemic [26]. Malaysia also had a way of dealing with COVID-19 at the community level and worked with health organisations at the district level [10]. Brazil established health councils in which citizens could participate [13]. On the other hand, Oman established Healthy Cities (HCs), which the WHCs used to track progress [3].

Human development and resource sharing are the following factors to consider. The analysis concludes that to be ready to use the resource. Each sector must look at how it uses resources and improve how it uses resources. As shown in Vietnam, where the strategy of long life was used to control a pandemic using available resources, the process would work if everyone worked together [7]. There was also a successful community collaboration in India. This was because they practised and enhanced their skills through volunteer work [14], and the suitable prevention strategy for haemorrhage disease is cooperation embedded in people[32].

Regarding customer focus, the most important factor is improving information gathering and identifying those at risk of receiving the information. This is in accordance with the International Covenant on Civil and Political Rights [33], which states that everyone has the right to obtain and share information verbally, via text, or in writing and that the government must provide citizens with access to accurate and reliable information.

In contrast, the Mahalapye Health District in Botswana concluded that a process was not good if it only involved the committee. Therefore, effective informational communication must foster collaboration to solve the pandemic problem [9].

M. Musaad[34] added that communication should be two-way and not limited to orders or policies. The Balaka, Malawi, study also showed that people would know about malaria if the community worked together and told them about it [31]. In Malaysia, the risk of COVID-19 is reported daily in the news, which is also an essential factor to consider [35].

Regarding essential care, this is the minor sector that carries the most weight due to its driving force, evaluation, and integration system with citizens. This shows that the pandemic could be stopped if the District Health System works with the public to plan and carry out activities in the community. On the other hand, India, studying how the health system is integrated in Madagascar, found that it is a complicated issue that needs to be planned and integrated at the community level [36]. India also has a quick way to separate patients who are at high risk of getting COVID-19, which local people and organisations support [14].

The component with the least weight is appreciation, which consists of bestowing blessings, expressing gratitude, or providing encouragement or inspiration. This demonstrates the significance of external sources of motivation. This may be because preventing or controlling the pandemic entails a high degree of danger, but they are obligated to do it due to their duty and position. In India, those who participated in the pandemic receive compliments that enhance their volunteer self-confidence [14].

The UCCARE working guidelines, utilized in this study, encompass six key components for preventing and managing epidemic outbreaks in the community: 1. Unity District Health Team: Emphasizes teamwork and collaboration among district health board members to achieve common goals. 2. Customer Focus: Ensures meeting the needs and expectations of customers, such as patients and their families, by delivering quality health services. 3. Community Participation: Stresses the importance of community involvement in health-related activities like health promotion and disease prevention. 4. Appreciation: Acknowledges the contributions of individuals and groups in promoting and enhancing community health. 5. Resource Sharing and Human Development: Highlights sharing resources and investing in human resource development through training and education. 6. Essential Care: Focuses on providing essential care services to all community members, irrespective of socio-economic status or other factors. Adhering to these guidelines enables the district health board to effectively prevent and manage epidemic outbreaks, enhancing the overall health and well-being of the community.

When comparing the UCCARE working guidelines to other existing guidelines or recommendations for preventing and controlling epidemic outbreaks in different countries or regions, it is essential to consider the similarities and differences between these approaches. Some guidelines may stress the significance of early detection and swift response to outbreak events, while others may prioritize community engagement and education. Moreover, guidelines may vary in terms of the recommended interventions or strategies, such as vaccination campaigns, contact tracing, or quarantine measures. One potential point of comparison for the UCCARE working guidelines could be the guidelines established by the World Health Organization (WHO) for outbreak response. These guidelines offer a framework for detecting, assessing, and managing outbreaks of infectious diseases, highlighting the importance of surveillance, laboratory testing, and risk communication. While there may be some overlap between the UCCARE working guidelines and the WHO guidelines, they may diverge in terms of the specific strategies recommended and the emphasis placed on different aspects of outbreak response. Another potential point of comparison could be the guidelines developed by other countries or regions in response to outbreak events. For instance, the guidelines formulated by China in response to the COVID-19 outbreak may differ from those created by Thailand, reflecting distinct cultural, social, and political contexts. By comparing the UCCARE working guidelines to these other guidelines, researchers can gain insights into the effectiveness of various approaches to outbreak prevention and control and identify best practices for future guideline development and implementation.

Some limitations of this study include the use of a self-reported questionnaire, which may be subject to social desirability bias or response bias. Additionally, the study was conducted in only one district in Thailand, which may limit the generalizability of the findings to other contexts. Other potential sources of bias include the possibility of sampling bias due to the use of a simple random sampling method and the exclusion of certain population groups. However, these limitations do not necessarily invalidate the findings of the study, but rather highlight the need for further research to confirm and expand upon these findings. Quantitative methods were chosen for this study based on factors such as the research question, available resources, and time constraints. The main research question was to analyze the factors preventing and controlling epidemic outbreaks in the community by the District Health Board. Quantitative methods, such as surveys, were selected to provide reliable data on the prevalence and distribution of these factors. Statistical analysis, like confirmatory factor analysis, was used to validate the proposed model and test hypotheses. Qualitative methods were not utilized due to limitations in resources, and time constraints. However, qualitative research can offer a deeper understanding of the experiences and perspectives of individuals and groups related to health and disease prevention. Future research could benefit from a mixed-methods approach to gain a more comprehensive understanding of the factors contributing to epidemic outbreak prevention and control.

Future research will involve a more diverse sample from various districts in Thailand to enhance the generalizability of the findings. This will aid in gaining a better understanding of the factors that play a role in preventing and controlling epidemic outbreaks in different contexts and settings. Furthermore, future research could investigate the efficacy of implementing the UCCARE working guidelines in other countries and regions with distinct health systems and cultural backgrounds. This approach will provide a more comprehensive insight into the

factors that lead to successful prevention and control of epidemic outbreaks, ultimately enhancing the overall health outcomes for communities globally.

4. CONCLUSION

The UCCARE concept, used by the Quality-of-Life developmental committee at the district level, can help improve their quality of life. This concept emphasises that private and public governments can work together to improve their standard health system. This will cause good problem-solving with it caused. Therefore, UCCARE is suitable for users to process about prevention and control the community disease, particularly the COVID-19 situation, which the community can help with it.

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