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Factors Affecting Knowledge Management for the Elderly Health System: Case Studies from Sub-district Municipalities and Administrative Organizations in Thailand

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Abstract:

Background: Thailand is in the process of transitioning into an aging society, which will significantly impact the health system for the elderly. Local administrative organizations play a crucial role in providing public health services for the elderly, as they are the closest level of government management to the people. Employing knowledge management in the government sector has enabled the provision of various forms of public services.

Objective: The study aims to explore the factors and conditions related to knowledge management for elderly health within local administrative organizations in Thailand.

Methods: This qualitative research methodology uses a case study design, with the unit of analysis being the Sub-district municipality and Sub-district Administrative Organization. The research tools are interviews and focus groups. The data are analyzed by content and thematic analysis.

Results: The findings indicate that the main factors related to knowledge management for the elderly health system include organizational culture, leadership and vision, supporting networks within the local area, and government agencies. Supporting factors include local culture and community philosophers. Policy suggestions, including local administrative organizations, must act as a coordinator and supporters of the health system for the elderly, emphasizing the creation of a network both inside and outside the area, drawing people of various age groups to join the health network in the local area, and preparing the population to be healthy before they enter the elderly stage.

Conclusion: The study recommends that local administrative organizations prioritize promoting factors within their area to support knowledge management for the elderly health system, which significantly impacts operational success. Furthermore, they should collaborate with other government agencies to address diverse health issues for the elderly.

Keywords: Knowledge management, Local administrative organization, Elderly health management, Thematic analysis, Health system, Effective management.

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1. INTRODUCTION

Thailand is currently experiencing a significant demographic transition. The country has seen a marked decrease in the number of newborns, leading to an

increase in the proportion of elderly individuals from 8.2% of the total population in 1994 to 18.5% in 2019. Projections indicate that by 2031, the elderly population will make up 28% of the total, indicating a rapid change. This shift poses social security challenges, particularly in healthcare costs for the elderly [1]. To address this, there is a clear need for policies and effective management methods to support elderly health, focusing on local administrative organizations and communities at the grassroots level. Strengthening the capacity of local administrative organizations to provide elder care is crucial, as the central government may need to be equipped to manage the challenges of the rapidly aging society alone [2]. The collaboration between local administrative organizations and health services will be vital in promoting health, preventing diseases, providing treatment, and coordinating with hospitals, communities, and families to ensure holistic care for the elderly [3, 4].

The research aims to identify the factors associated with knowledge management for elderly health in Thai localities at the sub-district level. This is essential for strengthening the local health system, particularly in the context of past elderly health management guidelines provided by the central government. The focus is on promoting welfare, implementing a universal health coverage policy, and providing living allowances to the elderly through local government organizations. Additionally, it involves coordinating with the Department of Elderly Affairs to establish nursing homes [5]. The study also addresses the prevalent negative perceptions of elderly health management, including the perception of the elderly as dependent and burdensome due to their inability to work and their rapid physical deterioration. Ultimately, this study aims to identify the key factors that support holistic health care for the elderly within local government organizations at the sub-district level, specifically the sub-district municipality and the sub-district administrative organization.

1.1. Literature Review

The 2009 National Health System Statute serves as the foundational framework for the national health system, with the National Health Commission responsible for guiding its implementation at the national level. This framework provides a strategic direction for local health systems, encouraging collaboration among local governments and community networks to enhance public health [6]. At the local level, the system focuses on fostering community engagement, promoting collective action to improve health outcomes, and strengthening partnerships between communities and relevant agencies. Key initiatives include health education, disease prevention, treatment, and various community-based health activities aimed at transforming local communities and promoting healthier lifestyles [7]. The local health system is, therefore, a component that is related to managing the health of the people in the community through the cooperation of various group members, including networks of citizens and other government agencies in the area to provide for the elderly people to be healthy in every dimension

Knowledge management is an integrated concept that identifies, creates, stores, shares, and applies the knowledge that the organization has to achieve efficiency and effectiveness in its operations [8-10]. Knowledge management creates and develops conditions within the organization to be able to initiate processes related to knowledge within the organization and achieve various goals [11-13]. Government organizations with health-related missions have adopted knowledge management processes as an essential tool in developing health systems. In Thailand, the government sector has established criteria and procedures for performing government duties. They must be able to receive information and process knowledge in various fields to apply it in performing official duties correctly, quickly, and appropriately to the situation. They must also promote and develop knowledge and the ability to create a vision and adjust people's attitudes [14, 15]. The concept of knowledge management is widely used in public sector management. This can be divided into two trends: the codification approach and the personal approach [16]. The codification approach refers to using technology and infrastructure to separate knowledge from individuals into a database to serve as a connection point for knowledge. Emphasis is placed on applying information technology in the state and local government for the distribution of information and the utilization of government activities. The personal approach is a trend in organizational culture. The structure is based on communication between people. The distribution of information or hidden knowledge within individuals emphasizes the communication process between humans. It is a matter of acquiring and retaining information, especially in informal interpersonal relationships for public sector organizations [17-19].

1.2. Local Health Systems and Government Knowledge Management

The development of local health systems includes all related parties involved in driving the health management of the elderly within the local area [20, 21]. The local health system plays a crucial role in mobilizing all sectors to collaborate in managing and promoting elderly health. Efforts are tailored to address various aspects of elderly care, ensuring they align with the unique context and needs of each sub-district. The related conditions include 1) problems and needs of the elderly in different areas; 2) social capital and the potential of various sectoral partners that affect the health management of the elderly in each area; and 3) management guidelines. The health of the elderly, which is appropriate to the context in each area, is an essential factor in the success of health management [22-24]. The local health system emphasizes inter-dependence in the local area with support from the local administrative organization, the public sector, the government sector, and the private sector [25-27] to work together to develop the health system according to the health needs of the people by combining health promotion,

disease prevention, medical treatment, and rehabilitation at the sub-district level [28]. Therefore, it is considered to be a new perspective in studying the health system at the sub-district level, which is the smallest local government unit.

Furthermore, knowledge management is now used in sector organizations in various contexts [29-32], helping organizations become more productive and creative and helping employees exchange various skills with others at the organizational level. Knowledge management helps maintain knowledge as an asset like other intangible assets through the knowledge management process [33, 34]. It was found that without proper preparation of the health service system, which includes active involvement of local communities as the primary mechanism, the care and support for the elderly would be insufficient. The cost of caring for the elderly's health will increase significantly from current costs. Therefore, public sector knowledge management is essential for exchanging knowledge between local administration organizations and related sectors to strengthen the community through participation in developing the health system. Establishing a health system at the sub-district level needs to be included, and it is also an essential tool for organizing the structure that supports the community health system. It promotes strong communities through participation (inclusive community) and develops the health system by building the strength of the community, and promotes lifelong learning [35, 36]. The local administrative organization and community jointly support the elderly to have the potential to manage and enhance their health, such as accelerating the development of the health workforce in caring for the elderly [37].

Factors related to knowledge management have various perspectives in categorizing this type [38], such as leadership, people, and culture. Culture is the original knowledge/intellect that the organization possesses. In Thailand, the study's results divided knowledge management into internal factors. Factors inside the organization include internal factors, such as leadership, organizational culture, personnel, knowledge/intelligence, and information and communication technology. External factors include support from outside organizations. Factors may also be divided in other ways, such as factors that influence knowledge management are divided into 5 types [39]: (1) personal factors, including culture, personnel, leadership, and training; (2) organizational factors, including processes, structure, financial resources; (3) technology, including infrastructure and applications; (4) management processes including strategies and measurement; and (5) motivation and incentives. Knowledge of key success factors is divided into the individual and organizational levels. The individual level includes training and skill development, participation in knowledge management activities, motivation, empowerment, and teamwork. The organizational level includes building culture in the organization, the leadership of senior executives and commitment to knowledge management, organizational structure, infrastructure support, integrating and balancing leadership, organizational learning, technology, rewards/recognition, and performance measurement/ benchmarking [40]. It also includes the approach of three aspects: (1) abstract aspects, such as workforce literacy in knowledge management; (2) soft aspects, such as strategy and organizational structure; and (3) hard aspects, such as infrastructure and physical facilities [41].

2. MATERIALS AND METHODS

This study aims to study factors and conditions related to knowledge management for the elderly health system of local administrative organizations in Thailand. This is a qualitative study using a case study design on knowledge management of elderly health systems. The case study design is chosen because a case study allows for a detailed, in-depth investigation of the complex and multifaceted nature of elderly health systems. Knowledge management in such systems involves numerous variables, including healthcare policies, caregiver practices, and patient experiences, which can be thoroughly examined within a case study framework. Elderly health systems are deeply influenced by social, cultural, and organizational contexts. A case study provides a way to explore these contextual factors and how they affect knowledge management practices. By focusing on a specific setting or group, the study can reveal how knowledge is shared, stored, and utilized in a real-world healthcare environment. Case studies are useful for gaining a holistic view of a particular phenomenon. In the context of elderly health systems, this includes understanding the interactions between healthcare providers, elderly patients, family members, and technology.

A case study allows researchers to use multiple data collection methods, such as interviews, observations, and document reviews. This flexibility is crucial when studying knowledge management, as it may involve collecting data from diverse sources, including healthcare records, caregiver notes, and patient feedback. Case studies often generate insights that are directly applicable to real-world practices. For example, findings from a case study on knowledge management in elderly health systems can inform policy recommendations or improve healthcare strategies for elderly care by showing what works and what does not in specific cases. In summary, the case study approach is chosen because it allows for a deep and contextualized understanding of how knowledge management operates within the complexities of elderly health systems, offering valuable insights that can be applied to similar contexts. This study has been approved for ethical research by Mahidol University, Thailand, under the certificate number IRB 2021/108.2009 dated September 20, 2021.

2.1. Units of Analysis and Sampling Method

The case studies selected 8 sub-district municipalities and administrative organizations in Thailand from 4 regions, 2 in each region, namely the northern, central, northeastern, and southern regions, to study information about knowledge management for the elderly health

system of local administrative organizations.

The key informants were divided into two groups: (a) public service organizers and (b) public service recipients, using snowball, a non-probability sampling method to indicate the key informants. The group of public service providers included administrators of local administrative organizations and local elderly health volunteers with the following inclusion criteria: 1) They must be an executive or a worker related to the elderly project of a local administrative organization, 2) they must have worked in the area for at least five years, and 3) they consent to provide information for this study. The group of public service recipients included the elderly in the area of the local administrative organization. The inclusion criteria were: 1) They must be elderly people in the area of the local administrative organization who participate in the project for the elderly of the local administrative organization, 2) they must have a healthy body, and 3) they must be residing in the area of the local government organization for not less than five years, 4) they must be participating in the elderly project of the local administrative organization in the area for not less than one year, and 5) they must be willing to provide information for this study. The exclusion criteria for both groups were conflicts of interest between participants and researchers in terms of family connection or affiliation connection.

The researchers chose the snowball sampling method for this study because (1) snowball reaches specific target groups since older adults may be a group with limited access, such as being unable to be easily contacted or not being identified in public databases. Snowballing allows researchers to reach their target groups through referrals from acquaintances, making it easier to reach specific groups. (2) Snowball sampling reduces the time and resources required to recruit participants, as participants in the first group will refer researchers to people who are relevant or in the target group, speeding up the participant selection process. (3) It builds trust; in health research, especially with older adults, trust is important. Being introduced through a network of acquaintances helps build trust and comfort among participants, making them more likely to provide honest information, and (4) Snowball sampling is often used in qualitative research that does not focus on being representative of the entire population (representativeness) but focuses on understanding health experiences or problems in depth. This method allows for more detailed and relevant information for the research group. Given the unique characteristics of the health-related elderly population, snowballing is a method that allows data collection from hard-to-reach groups and provides an understanding of health issues in an appropriate context.

2.2. Research Tools

(1) The tools for secondary data were research documents and related literature available domestically and abroad related to knowledge management and health systems for the elderly, summarized as a conceptual framework for the study. (2) The tools for primary data were focus groups, in-depth interviews, and non-participant observation.

2.3. Data Collection

The researchers collected all data by themselves because in qualitative research, data interpretation is significant, and it can only be done correctly when the researchers examine and collect all data themselves.

2.4. Data Analysis

The analysis used the content analysis method and interpreted data inductively (Analytic Induction) by taking data obtained from various methods. It interpreted and created conclusions to analyze the factors related to knowledge management and checked the data using triangulation, including data triangulation and methodological triangulation.

3. RESULTS

The results of the study on health activities are based on the synthesis of health systemsof various agencies, including 1) the World Health Organization, 2) the National Health Act (2007), 3) the Statute on the National Health System (2009), 4) National Health Security Office, 5) Community Health Support Office, and 6) Health Promotion Foundation. Together with an examination of local health activities in various case studies, the health system can be synthesized as follows [20, 28, 37]: 1) Health system governance for the elderly, including policy or overall direction for health care for the elderly and management of resources for health care for the elderly; 2) basic health service system for the elderly, including health promotion for the elderly, prevention and control disease, and development of the health workforce; 3) development of the potential of the elderly in health, including collection and management of health knowledge; and 4) health rights and consumer protection of the elderly, including protection of health rights and strengthening consumer potential. The results of field case studies from various regions throughout the country have been summarized in the following table (Table **1**).

When considering the overall results of the study, it was found that local administrative organizations prioritize activities based on three groups of elderly people: the socially active, the home-bound, and the bedridden.

There are two types of activities: Health Promotion activities for socially active elderly individuals and Health Care activities for the home-bound and bedridden groups. The case studies can be categorized into two main groups. The first group emphasizes health promotion activities, which focus on giving older adults more control over the determinants of their health and improving their well-being before they become sick. This is an activity for a group of elderly people who are stuck in society. The case studies in this group can be divided into 4 case studies (Case Studies 2, 3, 5, 7).

Table 1. Field study results in local administrative organization areas.

Case Study	High-light of Knowledge Management
1. Yang Noeng Subdistrict Municipality, Chiang Mai Province, Northern Region	- Organizing a team for the health of the elderly, including the promotion team, increases understanding and the team creates happiness - Application Long Term Care Smart Yangneung 4.0 in coordinating hospitals and volunteers in the area
2. Hua Ngom Subdistrict Administrative Organization, Chiang Rai Province, Northern Region	- Organizing a network of cooperation in the area, including goodness bank, initiated by local community and religious institutions (Buddhist temples). - Operating a school for the elderly to manage knowledge promoting health
3. Phlapphla Chai Subdistrict Administrative Organization, Ang Thong Province, Central Region	- Operation of Elderly Schools and expanding results to the village level through the network of retired civil service teachers. - Organizing health courses in collaboration with the hospital and the area's Non-Formal Education Center. - Elderly school system, three branches, rotating operations every week.
4. Khao Phra Ngam Subdistrict Municipality, Lopburi Province, Central Region	- home health care model for chronically ill and elderly patients in collaboration with telecommunications system provider - Creating a network of elderly volunteers through hospitals.
5. Naphu Subdistrict Administrative Organization, Udon Thani Province, Northeastern Region	- Operating a school for the elderly - Local volunteer network in collaboration with the hospitals, Non-Formal Education Center and College of Nursing
6. Tha Khan Tho Subdistrict Municipality, Kalasin Province, Northeastern Region	- The Life Coordination Emergency Project includes the application of the Emergency Medical Services (EMS) to coordinate with three departments, nearby hospitals (emergency room), municipality (transportation), and volunteers with the elderly using the GPS map coordinates system to connect target group of elderly people to report incidents - Prosthesis and Orthosis Bank Applied for Rehabilitation - Development of a knowledge management system to adjust the work structure
7. Khun Thale Subdistrict Municipality, Surat Thani Province, Southern Region	- Volunteer system (Personal Assistance) for 12 villages - System for home-visiting elderly people - Two systems of schools for the elderly: seniors aged 60 years and over and a volunteer system to prepare the elderly for those aged 50 and over to join as volunteer mentors in schools for the elderly.
8. Khuha Subdistrict Administrative Organization, Songkhla Province, Southern Region	- Health service system, including the Application IMED@HOME, visiting the homes of the elderly by recording in the application - Muslim Elderly School - Happiness Center, visiting the elderly by religious leaders of Buddhism and Islam, Subdistrict Administrative Organization officers, community hospitals (physical therapists), elderly club members, and village health volunteers network.

The second group focuses on maintaining and restoring health by providing health services and procedures for treating diseases in elderly individuals in the event of illness. This includes rehabilitation efforts aimed at improving physical health. The case studies in this group can be divided into 4 case studies (Case Studies 1, 4, 6, 8) which focus on elderly people who are home-bound or bedridden. The results of the study regarding knowledge management factors related to the health of the elderly in local administrative organizations in Thailand are summarized in the following table (Table **2**).

Table 2. Factors related to knowledge management (overview).

Internal Factors in Local Areas	Case1	Case2	Case3	Case4	Case5	Case6	Case7	Case8
1. Local Culture	-	■	-	-	-	-	-	-
2. Community Philosopher	-	■	-	-	-	-	-	-
3. Local Health Knowledge	-	-	-	-	-	-	-	-
4. Organizational Culture	■	-	■	■	■	■	■	■
5. Leadership and Vision	■	-	■	-	■	-	■	-
6. Local Support Networks	■	■	■	■	■	■	■	■
7. Local Government Office	■	■	■	■	■	■	■	■
External Factors of Local Areas	**Case1**	**Case2**	**Case3**	**Case4**	**Case5**	**Case6**	**Case7**	**Case8**
8. Center Government	-	-	-	-	-	-	-	-
9. Other Local Administrative Organizations	-	-	-	-	-	-	-	-
10. Private Sector	-	-	-	-	-	-	-	-
11. Academic Institutions	-	-	-	-	-	-	-	-

Note: Black=Main factor, Grey = Supporting factor, White = No factor.

Table 3. Factors related to knowledge management in case studies of health promotion groups.

Internal Factors in Local Areas	Case2	Case3	Case5	Case7
1. Local Culture		-	-	-
2. Community Philosopher		-	-	-
3. Local Health Knowledge	-	-	-	-
4. Organizational Culture	-			
5. Leadership and Vision	-			
6. Local Support Networks	-			
7. Local Government Office				
External Factors of Local Areas	**Case2**	**Case3**	**Case5**	**Case7**
8. Center Government	-	-	-	-
9. Other Local Administrative Organizations	-	-	-	-
10. Private Sector	-	-	-	-
11. Academic Institutions	-	-	-	-

Note: Black=Main factor, Grey = Supporting factor, White = No factor.

Table 4. Factors related to knowledge management in case studies of health treatment and rehabilitation groups.

Internal Factors in Local Areas	Case1	Case4	Case6	Case8
1. Local Culture	-	-	-	-
2. Community Philosopher	-	-	-	-
3. Local Health Knowledge	-	-	-	-
4. Organizational Culture				
5. Leadership and Vision		-	-	-
6. Local Support Networks				
7. Local Government Office				
External Factors of Local Areas	**Case1**	**Case4**	**Case6**	**Case8**
8. Center Government	-	-	-	-
9. Other Local Administrative Organizations	-	-	-	-
10.Private Sector	-	-	-	-
11. Academic Institutions	-	-	-	-

Note: Black=Main factor, Grey = Supporting factor, White = No factor.

3.1. Results of the Study

In Thailand, it was found that the main factors were organizational culture, leadership and vision of leaders, supporting networks within the local area, and government agencies within the area. Supporting factors included local culture and community philosophers. Non-existent factors included local health knowledge, the central government sector, other local administrative organizations, the private sector, and academic institutions. The study results are separated into 2 groups: case studies focusing on health promotion activities and groups focusing on activities in maintaining and restoring health. The results of the study are shown in Table **3**.

The main factors included organizational culture, leadership and leader vision, supporting networks within the local area, and government agencies within the local area. Supporting factors included local culture and community philosophers, and non-existent factors included local health knowledge, the central government sector, other local administrative organizations, the private sector, and academic institutions. A group case study was focused on activities in treatment and rehabilitation. The results of the study are shown in Table **4**.

The study results are a group case studies focusing on health treatment and rehabilitation activities. The main factors include organizational culture, supporting networks within the local area, and Government agencies within the local area. Supporting factors include leadership and the vision of leaders. Non-existent factors include local culture, community philosophers, and local health knowledge, as well as the central government sector, other local administrative organizations, the private sector, and academic institutions.

4. DISCUSSION

The overall study results show factors related to knowledge management for the elderly care system. This is consistent with dividing knowledge management into three categories [38, 41]. The results found that factors consistent with knowledge management for the health system for the elderly, including high impact factors, organizational culture, leadership and vision, local support networks, and government agencies within the area, are

consistent with the high impact factors. In addition, prominent factors that support knowledge management include factors within local administrative organizations [38].

These are internal and external factors that affect the local area, and the results of the study offer exciting perspectives. These include prominent factors in local knowledge management in the area, including soft aspect factors, which are in line with the previous research [39, 41]. The factors that influence knowledge management can be divided into five categories. Factors related to knowledge management that are prominent in knowledge management for the health of the elderly include personal factors and organizational factors.

In addition, local administrative organizations use related networks to carry out work in elderly health and use the available resources for operations due to the use of budget regulatory requirements related to financial resources, which are a barrier. This makes it impossible to conduct various projects related to the elderly as desired, use the budget for various resources (Hard Aspect), or invest in infrastructure with a limited operating budget, making local government organizations unable to budget or implement the project entirely. Therefore, knowledge management factors focus on people (Soft Aspect). In addition, many local administrative organizations use informal financial resources, such as donations or local funds. In the case study of health promotion groups, the main factors were different from the case study of the health treatment and rehabilitation group, namely the leadership and vision factor, as well as supporting factors, namely the local culture and community philosopher, and such differences reflect the characteristics of health promotion activities. Case studies 2, 3, 5, and 7 regarding health promotion activities rely on leadership and vision factors. This is because a network of partners inside and outside the area must be mobilized to support the implementation of activities. It requires leadership from local administrative organization leaders in related public policy and implementation of public policy to achieve knowledge management and activities to promote the health of the elderly within the effective area. Health promotion group activities tend to use a personal approach to knowledge management, which is based on interpersonal communication and the distribution of information through human networks in addition to local culture and community philosophers. It is also a supporting factor specific to health promotion groups that is important for health promotional activities. Mainly, operating a school for the elderly requires cooperation from the local community, including health experts, community experts, and volunteers, thus making the local cultural factors and community philosophers necessary for health promotion activities. For example, in Case Study 2, health promotion activities originated from the local community and religious institutions. Case Study 3 had a volunteer system in the network of retired teachers, and in case studies 5 and 7, a network of local volunteers was created in collaboration with public health institutions in the local area.

In a case study of health treatment and rehabilitation groups, the main factors related to knowledge management included organizational culture. For supporting networks within the local area and local government agencies, supporting factors included leadership and the vision of leaders. It can be seen that these factors are related to knowledge management. It will be different from the case study of the health promotion group, considering the activities of the health treatment and restoration group.

In Case Studies 1, 4, 6, and 8, it was found that activities aimed at maintaining and restoring health are linked to the use of information technology, particularly through database management systems and communication tools like mobile phone applications. These activities are, therefore, more technology-driven, in contrast to health promotion groups that focus on the Codification Approach [16].

Technology is used to develop infrastructure in database management, serving as a connection point for health activities and enabling the use of data to enhance service delivery. For instance, in Case Study 1, the “Long-Term Care Smart Yangneung 4.0” application was developed to organize a coordination system between hospitals, volunteers, the elderly, and local municipalities.

In Case Study 4, the “Excellent Happy Home Ward” project, a home health care model, was created in cooperation with TOT Company, a telephone service provider. This project links the elderly with hospitals and a network of local volunteers. Case Study 6 features the “Life Coordination Emergency Coordination Project,” which integrates the Emergency Medical System (EMS) to coordinate between hospitals, municipalities, and volunteers. The project uses GPS coordinates to assist elderly individuals in emergency situations. Similarly, Case Study 8 describes the IMED@HOME application, which facilitates a home-visit system for the elderly by recording their health information. This application allows for the sharing of data between public health service units, a Network of volunteers who care for the elderly at home, and families of the elderly.

Observations from the case study found that the difference between each area is that there are many activities for the elderly. For example, some areas are unique and focus on schools for the elderly. Some areas are outstanding and emphasize the application of technology in elderly activities. Moreover, some areas are unique and focus on home services for elderly people with health problems.

In addition, localities often lack the resources and manpower to carry out all activities on their own, making it essential to support a network of volunteers within the area to help support the operation. Local areas often use schools for the elderly as a base to build volunteer networks and connect them to activities. For example, elderly care programs, such as supporting elderly individuals with health issues at home, often involve bringing together people from different age groups to form a volunteer network. Schools for the elderly may also

invite individuals who are preparing to enter old age to participate in activities and contribute to the volunteer network. The local governments will be the leading actors in activities related to socially-bound elderly people, such as those at schools for the elderly. Meanwhile, public health agencies and their networks play the leading role in organizing activities for elderly people who are home-bound or bedridden.

CONCLUSION

In conclusion, the key factors related to knowledge management within local areas include organizational culture, leadership and vision, supporting networks, and government agencies. Whereas, the supporting factors include local culture and community philosophers. Policy recommendations suggest that local administrative organizations must act as coordinators, and supporters of the health system for the elderly. This emphasizes the creation of networks both within and outside the community and encourages individuals from various age groups to participate in the local health network. Lastly, it includes preparing the population to be healthy before they reach old age.

AUTHORS' CONTRIBUTION

It is hereby acknowledged that all authors have accepted responsibility for the manuscript's content and consented to its submission. They have meticulously reviewed all results and unanimously approved the final version of the manuscript.

ABBREVIATION

EMS = Emergency Medical System

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study has been approved for ethical research from Mahidol University, Thailand under the certificate number IRB 2021/108.2009, dated September 20, 2021.

HUMAN AND ANIMAL RIGHTS

All human research procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2013.

CONSENT FOR PUBLICATION

Informed consent was taken from all the participants involved in the study.

STANDARDS OF REPORTING

CORREQ guidelines were followed.

AVAILABILITY OF DATA AND MATERIAL

The data supporting the findings of the article is available in the Google drive at https://drive.google.com/file/d/1GRFs-xFT9sNz0wTvE78yFIxF2ENxuPoo/view?fbclid=IwY2xjawHFBPVleHRuA2FlbQIxMAABHYvS5C8zX4Q9VFwyV5s-QwvfCKUQZ8T8RWPhWFj6C4Tuf0C0e6NIWX2k9Q_aem_dGUGzF_-c9sptyf3O23HoA.

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CONFLICT OF INTEREST

The author(s) declare no conflict of interest, financial or otherwise.

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