



RESEARCH ARTICLE

## Development of Health Leadership Indicators For Supporting an Aging Society Among Local Care Volunteers in the Andaman Coastal Provinces, Thailand

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**ABSTRACT**

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This study employed a mixed-methods approach, divided into two phases according to the research objectives: 1(to develop health leadership indicators for supporting an aging society among local care volunteers in the Andaman coastal provinces, and 2( to formulate guidelines for developing health leaders to support an aging society among local care volunteers in the Andaman coastal provinces. The samples consisted of local care volunteers in the Andaman coastal provinces. The sample size was determined at a minimum of 5-10 times the number of indicators. In this study, 58 observable variables were analyzed. Based on the criteria, the sample size was 7 times the number of indicators, resulting in 406 participants. The sample was selected through multi-stage random sampling. The research instrument used was a questionnaire, which was validated by experts, with a content validity index of 1.00 and a reliability coefficient of 0.95. Data analysis was conducted using exploratory factor analysis (EFA), extracting factors through the principal factor analysis method and rotating factors orthogonally using the varimax method.

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The study found that seven factors and 52 indicators were identified when conducting an exploratory factor analysis: Professional Communication-11 indicators, with factor loadings ranging from 0.511 to 0.722. Ethics and Morality-8 indicators, with factor loadings ranging from 0.570 to 0.814. Leadership Personality-9 indicators, with factor loadings ranging from 0.503 to 0.783. Service Mindset-10 indicators, with factor loadings ranging from 0.526 to 0.669. Comprehensive Knowledge in Elderly Care-6 indicators, with factor loadings ranging from 0.624 to 0.761. Teamwork-6 indicators, with factor loadings ranging from 0.607 to 0.678. Lifelong Learning-2 indicators, with factor loadings ranging from 0.502 to 0.534.

## INTRODUCTION

An aging society has been occurring in almost every country worldwide, including Thailand, which is transitioning into an entirely aging society. This situation necessitates preparation and readiness to address health-related issues that will arise due to this demographic shift, including illnesses and functional impairments in various aspects of the body, as well as mental health challenges.<sup>1</sup> Therefore, a holistic approach to health is crucial. To prevent and address these issues, it is essential to plan for health promotion and preparedness to support an aging society effectively, ensuring that older people maintain good well-being. The approach to elderly care and aging society preparedness must suit the situation and adapt to future changes. Without proper planning and preparation, the challenges and crises related to elderly care in society and communities will inevitably arise. Preparing health leaders to support an aging society is a crucial process that involves social support in various aspects, including education, environment, socioeconomics, politics, recreation, and more. This preparation aims to create conditions that promote health and prevent diseases. Thailand has therefore emphasized the establishment of local care volunteers under local administrative organizations to provide services for elderly individuals who cannot fully care for themselves or those in a dependent state at home. These services include basic health care, rehabilitation, physical therapy, guidance, care, and assistance to help dependent elderly individuals maintain an everyday and healthy life. The local administrative organizations are responsible for recruiting individuals from the community to support elderly care activities, known as "local care volunteers." These volunteers serve as health leaders in helping an aging society.<sup>2</sup>

As health leaders in an aging society, local care volunteers must undergo training in elderly care for dependent individuals, as mandated by the Ministry of Interior. They must also reside within the jurisdiction of local administrative organizations or nearby areas. In the fiscal year 2024, the initiative will focus on developing health leadership models for supporting an aging society among local care volunteers in the Andaman coastal provinces, including Trang, Ranong, Phang Nga, Phuket, and Krabi. These provinces were selected due to their significance as key economic hubs for Thailand's health tourism industry and their status as entirely aging society provinces (Aged Society). A province is classified as an entirely aging society if at least 20.0% of the population is 60 or older or at least 14.0% is 65 or older. Given this scenario, there is an urgent need to acknowledge and address this demographic shift. Thailand is officially projected to become an aging society in 2025, and within the next decade, statistical data suggests that the nation must prepare for this transformation promptly. The long-term care responsibilities for dependent elderly individuals must align with local administrative plans. This initiative represents a community participation model in public health, encouraging individuals to take responsibility for their health, families, and communities through structured training programs. Currently, local care volunteers in the Andaman coastal provinces receive training based on standardized curricula established by local administrative organizations. However, academic research does not identify specific health leadership indicators tailored to the regional context for these volunteers. Developing such indicators is crucial to ensuring that local care volunteers are well-equipped to serve as health leaders, enhancing their training curriculum and preparing them for real-world implementation.<sup>3</sup>

Given these considerations, the researcher aims to develop health leadership indicators for supporting an aging society among local care volunteers in the Andaman coastal provinces. This research will contribute new knowledge and lead to the development of appropriate strategies aligned with regional needs and specialized caregiving tasks. The findings will be helpful for organizations responsible for volunteer development and volunteers themselves, helping them effectively prepare for the transition into an aging society. Additionally, this research will support public health administration, ensuring that the healthcare workforce is well-trained and equipped to provide high-quality and efficient care for communities in the future. Thus, this study aimed to develop health leadership indicators for supporting an aging society among local care volunteers in the Andaman coastal provinces.

## METHODS

This study employs a mixed-methods research approach, combining qualitative and quantitative methods. The research process is divided into two phases, corresponding to the research objectives:

### **Phase 1: development of health leadership indicators for supporting an aging society among local care volunteers in the Andaman coastal provinces.**

The researcher analyzed and identified health leadership indicators necessary for supporting an aging society among local care volunteers in the Andaman coastal provinces. This phase consists of **2 steps**:

#### **Step 1: identifying health leadership indicators using qualitative methods.**

1. The researcher reviewed literature and synthesized concepts and theories related to health leadership indicators from various credible sources, including textbooks, academic papers, and previous research studies.

2. A focus group discussion was conducted with 10 experts with experience and expertise in health leadership and aging care in the Andaman coastal provinces. The experts were purposively selected based on their qualifications and were engaged in in-depth discussions to reach data saturation.

The primary participants in this study were selected using purposive sampling, following Mayers'<sup>4</sup> stakeholder approach. The study focused on primary stakeholders directly involved in health leadership for aging care in the Andaman coastal provinces. The focus group consisted of 5-10 participants, considered an ideal number for interactive discussions. The criteria for selecting primary stakeholders included: 1) Individuals involved in implementing health leadership programs for supporting an aging society among local care volunteers in the Andaman coastal provinces; 2) Individuals with experience participating in community decision-making, policy discussions, or aging care initiatives in the target areas; 3) Key figures responsible for developing local care volunteers in the target provinces.

This step identified preliminary health leadership indicators, which were then analyzed in step 2.

#### **Step 2: Exploratory Factor Analysis (EFA) for identifying key health leadership factors.**

The researcher conducted exploratory factor analysis (EFA) to identify the relationships among variables and define key factors of health leadership. Using a quantitative approach, this step involved extracting Factors from step 1 and categorizing key indicators under specific leadership factors. Then, based on these indicators, the researcher developed a research instrument (questionnaire). Five health leadership and aging care experts validated the questionnaire, ensuring content validity with an index of 1.00 and a reliability coefficient of 0.98.

**Population selection:** the study population consisted of 518 local care volunteers in the Andaman coastal provinces. After accounting for a pilot test sample, the final number of participants for data collection was 488.

**Sample size determination.** According to Hair et al.<sup>5</sup>, the recommended sample size should be at least 5-10 times the number of indicators. This study analyzed 58 observable variables. Applying a multiplier of 7, the final sample size was 406 participants.

**Sampling technique.** The sample was selected using simple random sampling (lottery method) through the following steps:

1. Listing all local care volunteers in the Andaman coastal provinces.
2. Assigning unique numbers to each volunteer.
3. Randomly draw numbers to select 406 participants.

**Data analysis.** The data collected was analyzed using exploratory factor analysis (EFA) with the following criteria:

1. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. A KMO value close to 1.0 (minimum 0.50) indicates that the data is suitable for factor analysis. A statistically significant result ( $p < 0.05$ ) confirms the appropriateness of factor analysis.

2. Factor extraction. Factors were retained if their Eigenvalues were more significant than 1.0.

3. Factor loadings. indicators with loadings of at least 0.50 were considered valid; according to Harry et al.'s<sup>6</sup> proposal, researchers should carefully consider whether any indicators within the Factors are inconsistent or misaligned with the relevant principles, concepts, or theories. If any inconsistent indicators could lead to misinterpretation or misunderstanding, researchers can remove those indicators as appropriate.

### **Ethical Considerations and Protection of Research Participants**

The researcher proposed a research project for approval from the Human Research Ethics Committee of Sirindhorn College of Public Health Yala, under the research ethics code SCPHYLIRB-2567/379.

### **RESULTS**

From this study, the researcher presents the findings by the research objectives, as follows:

1. Findings on health leadership indicators for supporting an aging society among local care volunteers in the Andaman coastal provinces.

After synthesizing the literature and conducting expert interviews, the researcher identified seven key factors comprising 52 indicators: service mindset, knowledge of elderly health, ethics and morality, communication skills, teamwork, leadership attributes, and personality traits. Thus, 58 initial indicators were identified.

From the exploratory factor analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was found to be 0.958, higher than 0.50 and close to 1, indicating that the dataset had a strong correlation and was suitable for factor analysis. Furthermore, Bartlett's Test of Sphericity yielded a chi-square value of 18063.457 with statistical significance at  $p < 0.001$ , confirming the appropriateness of factor analysis for this study. Based on these results, the indicators identified in phase 1 were deemed sufficiently correlated and appropriate for further analysis.

The extraction of factors and rotation was performed using the Varimax rotation method, following the predefined criteria: each Factor must have an Eigenvalue greater than or equal to 1.0, and each variable within a factor must have a factor loading of at least 0.50. The analysis of the development of health leadership indicators for supporting an aging society among local care volunteers in the Andaman coastal provinces, based on factor analysis and synthesis of theoretical frameworks and previous research, resulted in seven Factors and 58 indicators. After performing exploratory factor analysis, seven Factors with 52 indicators were retained. The Eigenvalues of these factors ranged from 1.031 to 28.893, with a percentage variance ranging from 1.778% to 49.816%. The cumulative percentage variance ranged from 49.816% to 69.258%. The details are shown in Table 1.

**Table 1. Eigenvalues, Percentage of variance, and Cumulative variance of health leadership indicators for supporting an aging society among local care volunteers in the Andaman coastal provinces**

Factor	Eigenvalue	Percentage of variance (%)	Cumulative percentage of variance (%)
1. Professional communication	28.893	49.816	49.816
2. Ethics and morality	4.041	6.967	56.783
3. Leadership personality	1.966	3.389	60.172
4. Service mindset	1.527	2.634	62.806
5. Knowledge in elderly care	1.457	2.512	65.318
6. Teamwork	1.254	2.162	67.480
7. Lifelong learning	1.031	1.778	69.258

The researcher assigned names to factors and reorganized the indicators based on a comprehensive review of factor loadings. Seven key factors with their respective indicators were identified. The first factor, Professional communication, consists of 11 indicators with factor loadings ranging from 0.511 to 0.722, as shown in Table 2. The second factor, Ethics and morality, includes eight indicators with factor loadings between 0.570 and 0.814, as detailed in Table 3. The third factor, Leadership personality, comprises nine indicators with factor loadings ranging from 0.503 to 0.783, presented in Table 4. The fourth factor, Service mindset, consists of 10 indicators with factor loadings between

0.526 and 0.669, as shown in Table 5. The fifth factor, Knowledge in elderly care, contains six indicators with factor loadings ranging from 0.624 to 0.761, detailed in Table 6. The sixth factor, Teamwork, comprises six indicators with factor loadings between 0.607 and 0.678, as listed in Table 7. Lastly, the seventh factor, Lifelong learning, consists of 2 indicators with factor loadings ranging from 0.502 to 0.534, as shown in Table 8.

**Table 2. Factor loadings for factor 1-Professional communication**

No	Indicator	Factor loading
1	Ability to adjust communication styles	0.722
2	Clarity in communication, ensuring messages are easily understood and reach the intended target	0.708
3	Empathy and fostering a culture of knowledge exchange	0.705
4	Transparency and creating a safe space for problem-solving without fear of mistakes	0.640
5	Ability to communicate effectively and ensure understanding	0.633
6	Communication that inspires and motivates	0.625
7	Positive body language, warmth, and trustworthiness	0.613
8	Active listening and thoughtful consideration	0.610
9	Open-mindedness in receiving and expressing opinions	0.591
10	Thoughtful and well-reasoned decision-making	0.518
11	Critical thinking	0.511

**Table 3. Factor loadings for factor 2-Ethics and morality**

No	Indicator	Factor loading
1	Equality and non-discrimination	0.814
2	Honesty and adherence to integrity	0.788
3	Transparency and accountability in work	0.769
4	Fairness and justice	0.759
5	Responsibility towards oneself and society	0.708
6	Efficiency in performing duties	0.605
7	Ethical correctness based on academic principles	0.584
8	Neutrality and impartiality	0.570

**Table 4. Factor loadings for factor 3-Leadership personality**

No	Indicator	Factor loading
1	Effective management of community resources	0.783
2	Systematic thinking and being a thought leader in driving change	0.749
3	Serving as a role model and initiating new ideas	0.736
4	Ability to analyze internal and external environments	0.699
5	Seeking collaboration and fostering participation from all stakeholders	0.667
6	Having a clear vision	0.636
7	Understanding the local context and external environment related to community work	0.606
8	Ability to learn and apply knowledge for development and improvement	0.570
9	Acting as a mentor and providing guidance to others	0.503

**Table 5. Factor loadings for factor 4-Service mindset**

No	Indicator	Factor loading
1	Maintaining a positive self-image and representing the organization well	0.669
2	Recognizing the value of providing quality healthcare services	0.660
3	Demonstrating humility, gentleness, and politeness	0.648
4	Showing enthusiasm and proactiveness in service delivery	0.641
5	Expressing respect and giving recognition to healthcare service recipients	0.626
6	Responding quickly to the needs of healthcare service recipients	0.620
7	Providing healthcare services willingly and wholeheartedly	0.600
8	Prioritizing the delivery of the best possible healthcare services	0.575
9	Standing firm and persevering when facing challenges or obstacles in service	0.546
10	Being cheerful, empathetic, and demonstrating care for healthcare service recipients	0.526

**Table 6. Factor loadings for factor 5-Knowledge in elderly care**

No	Indicator	Factor loading
1	Ability to provide basic first aid and refer cases when necessary	0.761
2	Ability to maintain basic hygiene and sanitation for the elderly	0.718
3	Ability to observe common diseases and symptoms in the elderly	0.691
4	Understanding the physical changes in aging, rights, and welfare benefits for the elderly	0.642
5	Ability to promote health and well-being in the elderly	0.634
6	Understanding caregiving conditions and the ability to support self-care among the elderly	0.624

**Table 7. Factor loadings for factor 6-Teamwork**

No	Indicator	Factor loading
1	Being straightforward, sincere, and supportive of one another	0.678
2	Establishing and committing to shared team goals	0.663
3	Building close relationships and maintaining strong connections within the team	0.661
4	Understanding one's own role and the roles of others in the team	0.628
5	Forming a team based on individual capabilities and strengths	0.608
6	Being a good leader and a disciplined team player when necessary	0.607

**Table 8. Factor loadings for factor 7-Lifelong learning**

No	Indicator	Factor loading
1	Continuously learning new things to improve oneself	0.534
2	Having a strong interest in learning and actively participating in activities that enhance abilities	0.502

## DISCUSSION

According to the findings, the researcher presents the conclusions and discussion following the research objectives. The study of health leadership indicators to support the aging society of local caregivers in the southern Andaman coast region reveals new knowledge in development, focusing on seven factors and 52 indicators, summarized as follows:

### Factor 1:

Professional communication is crucial in developing health leaders to support the aging society of local volunteer caregivers in the southern provinces along the Andaman coast. This aligns with the research of several scholars<sup>6,7,8,9,10</sup>, as developing professional communication skills is a key factor that facilitates smooth teamwork, including listening, speaking, body language, using technology in communication, and providing guidance or receiving various feedback. All these aspects play a role in enhancing collaboration to support the aging society effectively. The researchers believe that developing these skills requires practice and real-life application in various situations to improve cooperation with others. If we can create good communication skills, we can work together effectively and achieve the best results in the workplace.

### Factor 2:

Ethics and morality represent another indispensable element for developing healthcare leaders dedicated to supporting an aging society. Regardless of how fast the world is changing, one of the most fundamental values everyone—especially those working with older people—must possess is strong ethical and moral principles. This finding aligns with studies from multiple scholars<sup>11,12,13,14,15</sup>, which emphasize that professional ethics directly influence behavior, decision-making, and the integrity of those working in healthcare professions. Ethics serve as guiding principles that shape individual and collective conduct within organizations. From the research findings, the researcher believes that ethics and morality act as a guiding light for professionals, ensuring their work is conducted with integrity, fairness, and responsibility. Ethics fosters professional growth and stability and contributes to job satisfaction and fulfillment. Adhering to professional ethics is essential for maintaining trust, credibility, and the sustainability of healthcare services, particularly in elderly care.

**Factor 3:**

**Leadership personality.** In developing health leaders to support an aging society, this factor is of great importance, as leadership or leadership skills do not refer merely to the position of a leader or executive but rather to the integration of various skills. These include empathy, substantial emotional maturity when facing challenges, creativity, being a good listener, and providing sound advice, among others. Regardless of context, gender, or age, this aligns with research by various scholars<sup>16,17,18,19,20</sup>. Therefore, leadership is a skill that everyone should possess without restrictions. Being a good leader or executive means having the ability to create and lead a team toward the goals and vision of the organization effectively. The leader must understand the needs and importance of everyone on the team and be able to foster teamwork that collaborates and supports one another well. A good leader also needs to demonstrate stable leadership, provide appropriate guidance, inspire others, and create a supportive atmosphere for the team. Additionally, leaders must possess problem-solving skills, make sound decisions, and take responsibility for decisions and actions rationally and consistently. This will enable leaders to guide the organization toward practical and sustainable success.

**Factor 4:**

**Service mindset.** This factor and approach are the heart of developing local caregiving volunteers in the southern provinces along the Andaman coast. To perform this work, providing service and dedicating effort are fundamental, which aligns with the research of various scholars<sup>21,22,23,24,25</sup>. It emphasizes the need for practitioners to be attentive to delivering services worthy of their roles. A service mindset is essential to service work. A good service provider must exhibit appropriate service behavior willingly, caringly, and focused on doing what is beneficial for the recipients of the service with a joyful heart, without expecting anything in return. The service mindset behavior of personnel is crucial to the organization, especially for support staff, who are responsible for facilitating services for internal and external clients. The role of support personnel in aiding the organization's operations and the reinforcing factors that sustain service mindset behavior are significant. Good service mindset behaviors include providing service with a smile, being polite and gentle, being enthusiastic and quick, reducing steps, ensuring accuracy and completeness, maintaining quality, being open-minded, accepting feedback, and improving service behavior based on principles of good governance. This aims to meet service recipients' needs and promote agility in operations according to the mission, achieving the organization's goals. Additionally, the individual's characteristics are essential in making someone an excellent service provider, including their intellectual capabilities, behavioral traits, values, and attitudes toward service.

**Factor 5:**

**Knowledge in elderly care.** When the trend towards an aging society in Thailand entirely occurs, older people will become the largest demographic group in the community. This makes it essential for caregivers to be knowledgeable in elderly care, which aligns with the research of various scholars.<sup>26,27,28,29,30</sup> They must face the risks associated with cognitive decline stemming from the deterioration of bodily systems, especially the senses. The elderly not only need to make decisions and manage chronic health conditions continuously, but they increasingly rely on medical services and face limitations in listening to and reading health information or medical prescriptions. This necessitates health literacy, which includes perceptual and social skills to access, understand, and utilize information in various ways to promote and maintain their health.

**Factor 6:**

**Teamwork.** A key element is essential for developing health leadership. The traditional belief may be that having just high-performing individuals is sufficient to achieve the desired success. However, the success of health leader organizations requires teamwork skills, which aligns with the research of many scholars<sup>31,32,33,34,35</sup>. The researchers argue that advancing to become a health leader necessitates collaboration from all organization sectors to drive forward and achieve the set goals. Therefore, developing teamwork skills is crucial and should not be overlooked, especially in an era of rapid technological change. Additionally, teamwork skills contribute to sparking creative ideas, leading to innovations or new problem-solving approaches that can enhance work efficiency and

create success for organizations in the short term and long term in effectively addressing the aging society.

### **Factor 7:**

**Lifelong learning.** There are many diverse Factors and approaches to valuable lifelong learning skills, and continuously developing these skills is worthwhile. Such skills will improve our future because they stem from the best parts of ourselves, which aligns with the research of many scholars<sup>36,37,38, 39, 40</sup>. This may result from having practical lifelong learning skills that help us work, learn, and live better. Let us discuss which skills are most beneficial for caregivers to transition into an aging society fully. Lifelong learning skills are similar to other social skills you may have heard of; these are related to how we connect with the world around us. Additionally, these skills are also associated with building relationships. Modern individuals must develop lifelong learning.

### **New Knowledge From Research**

Based on this information, this research aims to develop health leaders to support an aging society of local caregiving volunteers. To achieve this, it is essential to promote new findings: effective communication, ethical principles, leadership personality, service mentality, knowledge of elder care, teamwork, and lifelong learning. These can be developed along the guidelines to achieve the highest effectiveness in nurturing health leaders to support an aging society.

### **Recommendations**

#### **Suggestions for Utilizing Research Findings:**

1. The findings should be used by the Ministry of Public Health executives and local government leaders as a framework for developing human resources and establishing clear guidelines or policies to promote and enhance the competencies of community health volunteers in the digital age.
2. Community health volunteers should use the findings to plan their self-development in the digital age.

#### **Suggestions for Future Research**

Action research or developmental research should focus on developing health leadership strategies to support an aging society through local care volunteers in the southern Andaman provinces. These strategies should be implemented in modelling areas.

### **Policy Recommendations**

Utilize the proposed health leadership development strategies to support an aging society through local care volunteers in the Andaman southern provinces, establishing them as a policy for comprehensive human resource management aligned with the strategic issues and indicators found in the research.

### **Conflicts Of Interest**

The authors declare that there are no conflicts of interest.

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