

Determinants of Participation in Elderly Health Management under the UCCARE Approach: A Cross-Sectional Study of District Health Boards in Chonburi Province, Thailand

Areerat Sriwan, M.P.H.¹, Warunsicha Supprasert, Dr.P.H.²

¹Master of Public Health Student, Sirindhorn College of Public Health Chonburi, Faculty of Public Health and Allied Health Sciences, Praboromarajchanok Institute, Mueang, Chonburi 20000, Thailand.

²Department of Public Health, Sirindhorn College of Public Health Chonburi, Faculty of Public Health and Allied Health Sciences, Praboromarajchanok Institute, Mueang, Chonburi 20000, Thailand.

Received 30 January 2026 • Revised 28 February 2026 • Accepted 25 March 2026 • Published online 23 October 2026

Abstract:

Objective: This cross-sectional analytical study examined the level of participation and factors associated with participation in elderly health management under the unity team, customer focus, community participation, appreciation, resource sharing and human development, and essential care (UCCARE) approach among District Health Board (DHB) members in Chonburi Province, Thailand.

Material and Methods: The study population consisted of all 231 DHB committee members who met the inclusion criteria. Data were collected during April and May 2025 using a self-administered questionnaire comprising five sections: personal characteristics, knowledge of elderly health management, attitudes toward participation in elderly health management, motivation for participation, and participation in elderly health management based on the UCCARE approach. Data were analyzed using descriptive statistics and stepwise multiple linear regression analysis.

Results: Of the 231 participants, the majority were male (56.7%), aged 50–59 years (69.26%), and from the government sector (54.98%). The results revealed that 64.10% of participants demonstrated a high level of participation in elderly health management. Motivation ($\beta=0.709$, 95% CI=0.626, 0.792) and attitudes toward participation ($\beta=0.247$, 95% confidence interval (CI)=0.130, 0.364) were identified as significant predictors of participation in elderly health management under the UCCARE approach. Together, these two factors accounted for 84.3% of the variance in participation ($R^2=0.843$).

Contact: Warunsicha Supprasert, Dr.P.H.

Department of Public Health, Sirindhorn College of Public Health Chonburi, Faculty of Public Health and Allied Health Sciences, Praboromarajchanok Institute, Mueang, Chonburi 20000, Thailand.
E-mail: warunsicha@scphc.ac.th

J Health Sci Med Res
doi: 10.31584/jhsmr.20261476
www.jhsmr.org

© 2026 JHSMR. Hosted by Prince of Songkla University.

This is an open access article under the CC BY-NC-ND license

(<http://www.jhsmr.org/index.php/jhsmr/about/editorialPolicies#openAccessPolicy>).

Conclusion: These findings suggest prioritizing motivational mechanisms and positive attitudes among DHB members in policy and capacity-building to improve elderly health management under the UCCARE framework and strengthen district health systems and primary care-oriented services in aging societies.

Keywords: district health board, elderly health management, participation, primary health care, UCCARE

Introduction

Thailand officially transitioned into a fully aged society in 2024, with the elderly population reaching 20.70% of the total population. This shift is a direct result of a sustained decline in fertility rates and continued improvements in life expectancy. This demographic transition reflects the long-term success of national family planning policies implemented since the 1970s, which substantially reduced population growth, together with economic development and advancements in public health systems and medical technology¹. This profound demographic change poses major challenges to elderly health management, particularly in terms of limited health and social care resources, welfare system sustainability, adaptation to physical environments and infrastructure, and the provision of comprehensive, high-quality services to maintain older adults' quality of life. In response, the Ministry of Public Health has introduced the "4+1 Excellence Strategy,"² comprising health promotion and disease prevention, service delivery, workforce development, governance, and health economics. This strategy aligns with Thailand's 20-Year National Strategy and the "Thailand 4.0" development model, emphasizing innovation-driven growth, digital transformation, and value-based public services, including health system modernization^{1,2}. This strategy's implementation underscores integrated multi-sectoral collaboration to ensure equitable access to quality healthcare for all citizens, particularly the rapidly growing elderly population².

The structure of Thailand's local health system has evolved from the District Health Coordinating Committee

(DHCC) to the District Health System (DHS), which emphasizes multi-sectoral integration^{3,4}. In 2018, the District Health Board (DHB) was established based on the principle of "area-based, people-centered" development and promotion of cooperation among governmental, private, and civil society sectors⁴. The 2018 Regulation of the Office of the Prime Minister on Area-Based Quality of Life Development formally elevated the former advisory DHCC into the DHB, conferring explicit legal authority upon its members, including chairs, secretaries, and sector representatives, to convene meetings, coordinate multi-sectoral plans, allocate shared resources, and evaluate health outcomes at the district level^{4,5}. This regulatory shift mandated participation from at least three sectors: government, private, and civil society, transforming DHB membership from a voluntary coordinating role into an institutionally sanctioned governance obligation^{4,5}. Crucially, this legal empowerment directly shapes the "legal authority" attitudinal dimension among DHB members, their perception that participation in elderly health management is not merely discretionary, but role-obligated under national policy⁶. The DHB operates under DHS principles, adopting the Unity Team, Customer Focus, Community Participation, Appreciation, Resource Sharing and Human Development, and Essential Care (UCCARE) framework as a core strategy for multi-sectoral collaboration to enhance health management and quality of life for the elderly population⁵. The UCCARE approach comprises six components: Unity Team, Customer Focus, Community Participation, Appreciation, Resource Sharing and Human Development, and Essential Care⁵. This

framework is consistent with Cohen and Uphoff's concept of participation (1980)⁷, which classifies participation into four dimensions: decision-making, implementation, benefit-sharing, and evaluation. Thus, the DHB mechanism is vital for fostering collaboration and enhancing the efficiency of the elderly health system.

Effective elderly health management also requires individual-level factors that influence participation, including knowledge, which reflects the ability to assess, analyze, and apply information⁸, attitudes, which stem from beliefs and experiences that encourage continuous involvement in activities⁹, and motivation, which can be explained by Herzberg's Two-Factor Theory, encompassing both motivators (e.g., achievement and recognition) and hygiene factors (e.g., working conditions and job security)¹⁰.

In the context of district health governance, hygiene factors extend beyond individual working conditions to encompass structural and administrative determinants, including budget adequacy, inter-agency resource allocation protocols, and personnel support, that collectively determine whether collaborative activities can be sustained¹⁰. When deficient, these conditions act as dissatisfiers that undermine members' willingness to engage in resource-intensive tasks, particularly under constrained public health budgets and competing sectoral priorities. This relationship is especially pertinent to the "Resource Sharing and Human Development" (R) component of UCCARE, which requires DHB members to coordinate shared human, financial, and material resources across sectors, tasks that are highly sensitive to the adequacy of underlying hygiene conditions^{10,11}. These factors collectively play a critical role in fostering sustainable and effective participation.

Chonburi Province, one of Thailand's major urbanized industrial provinces and a key economic hub in the Eastern Economic Corridor (EEC), is rapidly becoming an aged society, with older adults accounting for 16.78% of its total population¹². The proportion of frail and bedridden

older adults is also increasing^{13,14}, posing substantial challenges to local health management systems, particularly in densely populated urban and peri-urban areas where health service demand is high and community support structures are undergoing rapid change. Chonburi is one of three EEC provinces, alongside Chachoengsao and Rayong, that have undergone sustained industrial expansion since the Eastern Seaboard Development Programme, attracting large flows of internal and cross-border migrant workers to its industrial estates and manufacturing sector¹⁵. This rapid industrialization has accelerated demographic restructuring, concentrating working-age populations in urban employment centers while leaving elderly residents increasingly isolated in peri-urban communities where traditional family caregiving networks have eroded¹⁶. This "left-behind elderly" dynamic, in which younger family members migrate to industrial zones while older parents remain without adequate informal support, differs markedly from rural provinces¹⁵⁻¹⁷, where agricultural livelihoods and stronger community bonds may sustain greater social cohesion. The resulting erosion of intergenerational cohabitation, compounded by a high health-service demand from a large migrant workforce^{15,17}, places disproportionate pressure on district health governance structures, making the roles of DHBs and mechanisms such as UCCARE especially critical in this urban-industrial context^{4,5}. In this context, Chonburi represents a critical setting for examining the mechanisms of elderly health management at the district level, as it reflects the intersection of rapid urbanization, economic expansion, and population aging, all of which place increasing pressure on district health governance and multi-sectoral collaboration.

Despite progress in DHB implementation, several challenges persist, including administrative changes, unclear roles and responsibilities, limited network participation, and resource constraints, while empirical evidence on the factors influencing DHB participation in elderly health

management remains limited^{18,19}. This study therefore examined participation levels and the associated factors among DHB members in Chonburi Province, focusing on their dual roles as strategic drivers and operational actors under the UCCARE approach. The findings aim to bridge existing service gaps, promote equitable healthcare access, and provide evidence-based insights responsive to the unique urban-industrial context of Chonburi to foster sustainable quality of life.

Material and Methods

Study design and setting

This cross-sectional analytical study was conducted in Chonburi Province, Thailand, between April and May 2025. The study setting encompassed all 11 districts of the province. The DHB structure for each district comprised 21 members, all of whom were included in the study population.

Population and participants

The study population comprised all 231 members of the DHB in Chonburi Province. Given the DHB's central role in local elderly health management and in promoting participatory processes under the UCCARE framework, this study focused on examining the level of participation and factors influencing DHB members' involvement in elderly health management.

To ensure the quality and relevance of the data, a total population sampling approach was applied to all the members who met the following purposive inclusion criteria: (1) served as the chair, secretary, or a member of the DHB; (2) were aged 25 years or older, consistent with the eligibility criteria for DHB members as stipulated in the Regulations of the Office of the Prime Minister on Area-based Quality of Life Development, B.E. 2561 (2018)⁴; (3) had held their DHB position for at least one year; (4) had experience in elderly health management under the UCCARE approach; and (5) provided informed consent to participate in the study.

Participants were excluded if they did not reside in the study area or were unable to participate due to acute illness at the time of data collection.

Research instruments

The research instrument was a structured questionnaire developed by the researcher based on a review of relevant literature and theories, including Herzberg's Two-Factor Theory¹⁰, the UCCARE framework, and an adapted questionnaire developed by Boontham Mingkaew¹⁸. The questionnaire comprised five sections:

Part 1: Personal Characteristics – 7 items (e.g., sex, age, education level, position, work experience, and training history), using multiple-choice and short-answer formats.

Part 2: Knowledge of Elderly Health Management – 10 items with the response options of "Yes," "No," and "Not sure." Correct answers were scored as 1 and incorrect answers as 0. Knowledge levels were classified as high, moderate, and low according to Bloom's taxonomy²⁰.

Part 3: Attitudes toward Participation in Elderly Health Management – 20 items measured using a 5-point Likert scale²¹, covering five domains: problem perception, perceived benefits, social pressure, personal values, and legal authority. Attitude scores were categorized into three levels (high, moderate, and low) based on Best's method²².

Part 4: Motivation for Participation in Elderly Health Management – 10 items developed based on Herzberg's Two-Factor Theory¹⁰, comprising two components: motivation factors and hygiene factors. Responses were rated on a 5-point Likert scale²¹ and categorized into three levels of motivation (high, moderate, and low) based on Best's method²².

Part 5: Participation in Elderly Health Management under the UCCARE Approach – 30 items across six domains: Unity Team, Customer Focus, Community Participation, Appreciation, Resource Sharing and Human

Development, and Essential Care. Responses were rated using a 5–point Likert scale²¹ and interpreted into three levels of participation (high, moderate, and low) based on Best's method²².

Instrument validation

Content validity

To ensure content validity, the instrument was reviewed by a panel of three experts with expertise in public health, community empowerment, and public health administration. The overall index of item–objective congruence (IOC) was 0.90, indicating acceptable content validity (0.50–1.00)²³. The IOC values were 0.90 for personal characteristics, 0.97 for knowledge, 0.82 for attitudes, 0.80 for motivation, and 0.98 for participation under the UCCARE approach.

Reliability

A pilot test was conducted among 30 DHB members in Sa Kaeo Province. The knowledge section was evaluated using KR–20²⁴, while the attitude, motivation, and participation sections were assessed using Cronbach's alpha²⁵ (acceptable threshold ≥ 0.70). The reliability coefficients were 0.80 for knowledge (KR–20), 0.95 for attitudes, 0.96 for motivation, and 0.97 for participation (Cronbach's alpha).

Data collection

After obtaining ethical approval, official permission letters were sent to district authorities. The researcher coordinated with district–level offices to schedule data collection visits across the 11 districts in Chonburi Province. Data were collected using self–administered questionnaires.

Prior to questionnaire distribution, the researchers introduced the study, explained the objectives and procedures, and obtained written informed consent from all

participants. To mitigate potential common method bias and social desirability bias, all participants were explicitly assured of their anonymity and the confidentiality of their responses, emphasizing that there were no right or wrong answers. Participants completed the questionnaire privately, with clarification provided when necessary. The questionnaire was also designed with clear instructions for each section to reduce respondent fatigue and patterned responding. Participants spent approximately 30 minutes completing the questionnaire.

Data collection was completed after responses were obtained from all 231 DHB members. All data were kept confidential, accessible only to the researchers, and reported in aggregate form without identifying individual participants.

Data analysis

Data were analyzed using IBM Statistical Package for the Social Sciences (SPSS) Statistics software Version 23.0. All statistical tests were performed with a significance level of 0.05 and a 95% confidence interval. Descriptive statistics, including frequency, percentage, mean, standard deviation, minimum, and maximum, were used to describe participants' personal characteristics and levels of knowledge, attitudes, motivation, and participation.

Inferential statistics were applied to examine relationships between variables. Chi–square or Fisher's exact test with Cramer's V were used for categorical associations, and Pearson's correlation coefficient for interval and ratio variables. Multivariable analysis was performed using multiple linear regression with backward stepwise selection to identify the significant predictors of participation, retaining only variables with a p –value < 0.05 in the final model.

Backward stepwise selection was chosen over full model entry or penalized regression methods such as LASSO²⁶ on three grounds: (1) the predictor set was low–dimensional five candidate variables only, making

high-dimensional penalization methods unnecessary²⁷; (2) the study's purpose was explanatory rather than predictive, prioritizing theoretically grounded factor identification over out-of-sample prediction accuracy²⁷; and (3) all regression assumptions linearity, normality of residuals, homoscedasticity, independence of errors (Durbin-Watson statistic), and absence of multicollinearity (tolerance and VIF) were rigorously verified prior to analysis, minimizing the risk of biased parameter estimation²⁸. Limitations inherent to stepwise selection, including potential capitalization on chance and R^2 inflation, are acknowledged in the Limitations section.

Results

Personal characteristics of participants

Most participants were male (56.70%), and the largest age group was 50–59 years (69.26%). Participants' ages ranged from 32 to 59 years, with a mean of 51.35 ± 5.71 years. The majority were married (69.26%), and the most common level of education was a bachelor's degree (44.59%). Regarding current roles, more than half of the participants were from the government sector (54.98%), followed by the civil society sector (25.97%) and the private sector (19.05%). Approximately two-thirds (66.67%) reported having attended at least one meeting or training session on elderly health management or quality of life development during the previous two years at a mean of 1.99 ± 1.15 times (range: 1–6). Nearly half of the participants (49.78%) had 1–3 years of experience as DHB members at a mean of 3.65 ± 1.63 years (range: 1–9) (Table 1).

Knowledge about elderly health management

Most participants had a high level of knowledge about elderly health management (69.3%), with the remainder at moderate (21.7%) or low (9.1%) levels (Supplementary Table 1).

Attitudes toward participation in elderly health management

The majority of participants (73.6%) demonstrated a high level of attitude toward participation. The highest-scoring domain was personal values (17.49 ± 2.31) and the lowest was social pressure (15.50 ± 2.49). The overall mean attitude score was 80.94 ± 9.72 (Supplementary Table 2)

Table 1 Demographic characteristics (N=231)

Personal Factors	N	Percentage
Sex		
Male	131	56.7
Female	100	43.3
Age (years old)		
30–39	13	5.63
40–49	58	25.11
50–59	160	69.26
Marital status		
Single	44	19.05
Married	160	69.26
Widowed	9	3.9
Divorced	11	4.76
Separated	7	3.03
Level of education		
Primary school	6	2.6
Junior high school	26	11.26
Senior high school	47	20.35
Voc. Cert./High Voc. Cert.	14	6.06
Bachelor Degrees	103	44.59
Higher than Bachelor's Degree	35	15.15
Current Role		
Government Sector	127	54.98
Civil Society Sector	60	25.97
Private Sector	44	19.05
History of Attending Meetings/Training on Elderly Health Management/Quality of Life Development for the Elderly		
Never	77	33.33
Attended (times/2 years)	154	66.67
1 Times	68	29.44
2–5 Times	85	36.8
6–10 Times	1	0.43
Work Experience as DHB Member (years)		
1–3	115	49.78
4–6	106	45.89
7–10	10	4.33

Motivation to participate in elderly health management

Most participants reported high motivation (60.6%), while 34.6% had moderate and 4.8% had low motivation (Supplementary Table 3).

Participation in elderly health management under the UCCARE framework

According to the analysis, 64.07% of participants had a high level of participation in elderly health management under the UCCARE framework (≥ 111 points), 34.20% had a moderate level (71–110 points), and 1.73% had a low level (30–70 points).

Across the six UCCARE dimensions (maximum score=25 for each dimension), the highest mean score was observed for community participation (19.69 ± 3.50), followed by appreciation (19.59 ± 3.46), customer focus (19.32 ± 3.77), unity team (18.74 ± 4.08), essential care (18.72 ± 4.23), and resource sharing and human development (18.28 ± 4.03). Overall, 64.1% of participants had a high level of participation under the UCCARE framework. Among the six domains, Community Participation scored highest (19.69 ± 3.50), while Resource Sharing and Human Development scored lowest (18.28 ± 4.03), identifying it as the weakest area of current DHB implementation (Table 2, Supplementary Table 4).

Factors predicting participation in elderly health management under the UCCARE approach

Bivariate analysis

Pearson's correlation analysis was performed to examine the relationships between personal characteristics, knowledge, attitudes, motivation, and participation in elderly health management under the UCCARE approach.

Among personal factors, only history of attending meetings or training was significantly associated with participation ($r=0.234$, $p\text{-value}=0.003$); age and work experience showed no significant correlation and were not further interpreted. Among psychosocial factors, motivation showed a strong positive correlation with participation ($r=0.929$), attitudes showed a moderate positive correlation ($r=0.747$), and knowledge showed a low positive correlation ($r=0.209$), all statistically significant ($p\text{-value}<0.001$) (Table 3).

Multivariable analysis

Backward stepwise multiple linear regression identified motivation for participation ($\beta=0.773$) and attitudes toward participation ($\beta=0.190$) as significant predictors of participation in elderly health management under the UCCARE approach. Together, these two variables explained 84.3% of the variance in participation ($R^2=0.845$, adjusted $R^2=0.843$, $F(2,152)=414.656$, $p\text{-value}<0.001$) (Table 4).

Table 2 Participation level by UCCARE dimensions (N=231)

Participation	Mean $\pm$ S.D.	Min	Max	Level of participation
U: Unity team	18.74 $\pm$ 4.08	5.00	25.00	high
C: Customer focus	19.32 $\pm$ 3.77	7.00	25.00	high
C: Community participation	19.69 $\pm$ 3.50	5.00	25.00	high
A: Appreciation	19.59 $\pm$ 3.46	5.00	25.00	high
R: Resource sharing and human development	18.28 $\pm$ 4.03	5.00	25.00	high
E: Essential care	18.72 $\pm$ 4.23	5.00	25.00	high
Overview	114.34 $\pm$ 20.10	37.00	150.00	high

UCCARE=unity team, customer focus, community participation, appreciation, resource sharing and human development, and essential care

Table 3 Correlation between participation in elderly health management under the UCCARE approach and selected factors (N=231)

Factors	Participation	Sex	Age	Marital status	Level of education	Current role	History of training and meeting attendance	Work experience as DHB member	Knowledge	Attitudes
Sex	-0.058									
Age	0.054	0.001								
Marital Status	0.047	0.058	0.129*							
Level of Education	0.035	0.062	-0.106	-0.167*						
Current role	0.157*	0.033	0.132*	0.159*	-0.181**					
History of Training and Meeting Attendance	0.234**	0.175*	-0.090	0.082	0.122	0.062				
Work Experience as DHB Member	0.001	-0.013	0.095	0.031	0.100	-0.043	0.061			
Knowledge	0.209**	0.001	-0.001	-0.008	0.128	-0.043	0.077	0.117		
Attitudes	0.747**	-0.006	-0.023	0.053	0.154*	0.051	0.178*	-0.089	0.274**	
Motivation	0.929**	-0.048	0.040	0.039	0.081	0.127	0.201*	0.029	0.229**	0.731**

*p-value<0.05, **p-value<0.01, tested by Pearson's correlation analysis.

Represents point-biserial correlation coefficient for binary variables (Sex: Male=0, Female=1; Training: No=0, Yes=1).

DHB=district health board, UCCARE=unity team, customer focus, community participation, appreciation, resource sharing and human development, and essential care

Table 4 Stepwise multiple linear regression analysis predicting participation in elderly health management under the UCCARE approach (N=231)

Factors	B	β	t	p-value	95% of CI	
					Lower	Upper
Attitudes	0.247	0.190	4.166	<0.001**	0.130	0.364
Motivation	0.709	0.773	16.919	<0.001**	0.626	0.792

*p-value<0.05, **p-value<0.01, tested by stepwise multiple linear regression analysis, SE=standard error, CI=confidence interval, UCCARE=unity team, customer focus, community participation, appreciation, resource sharing and human development

Tolerance and VIF values confirmed absence of problematic multicollinearity (Tolerance >0.10; VIF <10) for all predictors retained in the final model.

Multicollinearity diagnostics confirmed the stability of the model: Tolerance values for both motivation and attitudes were 0.488, with corresponding VIF values of 2.049, well within acceptable thresholds (Tolerance

>0.10; VIF <10)^{27,29}, indicating that multicollinearity did not substantially distort the regression coefficients. The model therefore provides reliable estimates of each predictor's independent contribution to participation.

The predictive equation can be expressed as follows:

Participation in Elderly Health Management (UCCARE)=0.134+0.247 (Attitudes toward Participation) + 0.709 (Motivation for Participation).

Discussion

Participation in elderly health management under the UCCARE approach among DHB members in Chonburi Province was at a high level, reflecting strong district-level governance integrating collaboration across government, community, and private sectors^{19,30}. Across the six UCCARE domains, participation emerged as multi-faceted: Community Participation and Appreciation (highest scores) reflect local engagement and recognition of multi-sectoral contributions; Unity Team and Resource Sharing represent structural coordination; and Customer Focus and Essential Care underscore people-centered operations. Thus, participation is defined not merely as attendance but as a comprehensive integration of strategic coordination and active contribution within the district health system. These findings align with Chongchit et al.¹⁹ and Thunkham³¹, confirming that active DHB participation improves health service access and supports healthy aging environments.

Motivation for participation emerged as the strongest predictor ($\beta=0.773$), followed by attitudes toward participation ($\beta=0.190$), together explaining 84.3% of the variance in participation¹⁰. The dominance of motivation may be explained through Herzberg's "Achievement" motivator, the satisfaction derived from meaningful, visible work amplified by Chonburi's EEC context, where health governance outcomes are directly linked to workforce sustainability and national policy visibility¹⁰. Unlike DHB members in rural provinces, those in Chonburi manage a structurally vulnerable aging population shaped by labor migration and the left-behind elderly phenomenon, generating a heightened sense of achievement that reinforces

engagement. This aligns with Self-Determination Theory, which posits that intrinsic motivation is strongest when work is perceived as both competence-affirming and socially significant³². Policymakers in EEC provinces should therefore leverage this achievement orientation through explicit recognition mechanisms and visible outcome reporting to sustain DHB motivation.

The exceptionally high R^2 (0.843) warrants careful interpretation. This value may partly reflect conceptual proximity between "motivation to participate" and "actual participation" as perceived by respondents, particularly when both are measured through self-reported scales, a limitation acknowledged in the Study Limitations section. Notably, when examining motivation through Herzberg's Two-Factor Theory, hygiene factors, including budgetary support, resource allocation authority, and administrative infrastructure, must be distinguished from intrinsic motivators¹⁰. This distinction is especially relevant to the Resource Sharing and Human Development domain, which recorded the lowest mean score (18.28 ± 4.03), suggesting that deficient hygiene conditions structurally limit members' capacity to fulfill the resource-sharing responsibilities, regardless of intrinsic motivation^{10,11}. Policy efforts should therefore address both motivational readiness and material preconditions, particularly budget allocation and inter-sectoral resource protocols.

Attitudes toward participation were the second significant predictor. DHB members in this study were predominantly mature adults (50–59 years) with bachelor's degrees and 1–3 years of experience, characteristics that likely foster a stronger understanding of roles and an appreciation for the value in participation¹⁸. Positive attitudes encouraged commitment and sustained engagement in multi-sectoral collaboration, consistent with Mingkaew¹⁸ and Wallerstein et al.³³, and supported by Thai evidence that DHB establishment strengthened community responsiveness and service performance^{6,34}.

Interestingly, knowledge was not a significant predictor in the final model despite its positive bivariate correlation. This suggests that technical knowledge alone is insufficient to catalyze participation without concurrent internal motivators such as achievement and social recognition. Capacity-building strategies should therefore shift from purely knowledge-based approaches toward fostering psychosocial readiness and professional pride, ensuring members are not only informed but inspired to engage¹⁰.

A distinct contribution of this study is the identification of motivation and attitudes as primary psychosocial determinants in a highly urbanized, industrial context. While prior research emphasizes structural factors, this study demonstrates that internal driving forces, intrinsic motivation, and perception of legal authority are the primary catalysts for high-level participation, shifting focus from structural improvements to psychological readiness within modern district health systems. While overall participation was high, the Resource Sharing domain scored lowest (18.28 ± 4.03), potentially reflecting the fragmented integration between private hospitals and the public district system in Chonburi's industrial hub. Linking this to the "Treatment Anywhere" policy improved the cross-sectoral data sharing and resource pooling needed to enhance elderly service accessibility across public and private providers, without compromising continuity of care³⁴.

Recommendations

Based on the findings, policymakers should prioritize capacity-building programs that go beyond technical training to focus on "Appreciation" and "Leadership," incorporating recognition mechanisms for successful community initiatives and leadership workshops that empower DHB members in managing complex, multi-sectoral resources. Incentive mechanisms that strengthen both intrinsic and extrinsic motivations, combined with clear governance structures that foster positive attitudes, are essential for sustaining

elderly health management under the UCCARE framework. For future research, longitudinal studies across diverse geographical contexts are recommended to examine the long-term impacts of these psychosocial determinants on primary health-care-oriented service delivery and healthy aging outcomes.

Conclusion

This study demonstrates a high level of participation in elderly health management under the UCCARE approach among DHB members in Chonburi Province, with motivation and attitudes identified as the primary predictors. Policy formulation should therefore move beyond technical training toward capacity-building programs emphasizing "Appreciation" and "Leadership," incorporating recognition mechanisms for successful community initiatives and leadership workshops that empower DHB members in managing complex, multi-sectoral resources. This shift from knowledge-based instruction to fostering professional pride and collaborative governance is essential for the long-term sustainability of elderly health services in an aging society.

Strengths of the study

This study offers two key strengths. First, its focus on Chonburi Province, a major urbanized industrial hub and EEC province, provides unique insights into district-level health governance at the intersection of rapid industrialization and population aging, a context markedly distinct from rural settings examined in prior research. Second, the application of the UCCARE framework enables a structured, multi-faceted analysis of participation, moving beyond broad definitions to identify specific strategic and operational drivers within the district health system, offering a robust evidence base for designing targeted capacity-building and incentive mechanisms responsive to the challenges of an aging society.

Study limitations

Several limitations should be acknowledged. First, the cross-sectional design precludes definitive causal inferences; notably, it is equally plausible that high participation fosters more positive attitudes through direct experience, rather than attitudes solely driving participation. Second, the findings may not be fully generalizable beyond Chonburi Province, given its unique urban-industrial and EEC context. Third, although total population sampling was employed, the absolute sample size of 231 DHB members is relatively small for complex subgroup analyses, and the purposive inclusion criteria may have excluded perspectives from members with less than one year of experience. Fourth, self-administered questionnaires may introduce social desirability bias; however, anonymity was assured and instructions were clarified to mitigate this risk. To assess common method bias, Harman's Single Factor Test was conducted. The first unrotated factor accounted for 38.6% of total variance, below the 50% threshold indicative of severe bias, providing reasonable confidence in the validity of the findings, though future studies should consider longitudinal designs or objective performance metrics for further validation. Fifth, backward stepwise regression, while appropriate for this study's low-dimensional and explanatory context, carries inherent limitations, including capitalization on chance and R^2 inflation^{35,36}. Future research with larger or more heterogeneous samples should consider full model entry or penalized regression approaches, such as LASSO, for more stable and generalizable estimates^{26,27}. Finally, the high R^2 (84.3%) suggests potential conceptual proximity between motivation and participation as self-reported constructs; future research employing qualitative interviews or objective behavioral indicators would help further distinguish between psychological intention and operational participation.

Ethics approval

This study was approved by the Human Research Ethics Committee, Sirindhorn College of Public Health, Chonburi, Prabromarajchanok Institute (Approval No. COE.SCPHC.NO. 2025/004; approved March 24, 2025), operating in compliance with the Declaration of Helsinki, the Belmont Report, CIOMS Guidelines, and ICH-GCP. Written informed consent was obtained from all participants prior to data collection.

Acknowledgement

The authors sincerely thank all experts, coordinators, and District Health Board members in Chonburi Province for their valuable contributions, cooperation, and participation in this study.

Funding sources

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Conflict of interest

The authors declare no conflicts of interest.

References

1. National Statistical Office. The 2024 survey of the older persons in Thailand: provincial level [monograph on the Internet]. Bangkok: National Statistical Office; 2024 [Cited 2026 Aug 20]. Available from: https://www.nso.go.th/nsoweb/storage/survey_detail/2025/20250103144326_51634.pdf
2. Strategy and Planning Division, Office of the Permanent Secretary, Ministry of Public Health. Details of Ministry of Public Health key performance indicators, fiscal year 2025 [monograph on the Internet]. Bangkok: Ministry of Public Health; 2024 [Cited 2026 Aug 20]. Available from: https://spd.moph.go.th/wpcontent/uploads/2024/11/KPI_template_2568.pdf
3. World Health Organization. Report of the International Conference on Primary Health Care, Alma-Ata, USSR, 6-12 September 1978

- [monograph on the Internet]. Geneva: WHO; 1978 [Cited 2026 Aug 20]. Available from: <https://www.who.int/publications/item/9241800011>
4. Office of the Prime Minister. Regulation on area-based quality of life development B.E. 2561. Bangkok: Royal Thai Government Gazette. 2018;135(Special Section 54 D):1-7.
 5. Sirilak S. District health system: the principle and modern approach. 2nd ed. Bangkok: Rattanasuwan Printing; 2021.
 6. Kanchatpisit K, Wanaratwicht C, Jariya W. Performance of the district health boards within the district health system in Chiang Mai Province, Thailand. *J Public Health Dev* 2024;22:78-91. doi: 10.55131/jphd/2024/220207.
 7. Cohen JM, Uphoff NT. Participation's place in rural development: seeking clarity through specificity. *World Dev* 1980;8:213-35. doi:10.1016/0305-750X(80)90011-X.
 8. Pakdeesrisakda P. Knowledge, understanding, motivation and marketing mix attitudes affecting E85 gasohol refueling behavior of drivers in Bangkok [master's thesis]. Bangkok: Srinakharinwirot University; 2012.
 9. Jeenpracha S. Attitude, motivation, and personnel participation in 5S activity implementation of Chonburi Provincial Administrative Organization [independent study]. Chonburi: Burapha University; 2017.
 10. Herzberg F, Mausner B, Snyderman BB. The motivation to work. New Brunswick (NJ): Transaction Publishers; 2011.
 11. Dobre OI. Employee motivation and organizational performance. *Rev Appl Socio Econ Res* 2013;5:53-60.
 12. Chonburi Provincial Public Health Office. Health Data Center (HDC): provincial level [homepage on the Internet]. Chonburi: Chonburi Provincial Public Health Office; 2024 [Cited 2026 Sep 10]. Available from: <https://cbi.hdc.moph.go.th/hdc/main/index.php>
 13. Department of Health Service Support. The 3 Doctors health service support system [homepage on the Internet]. Bangkok: Ministry of Public Health; 2025 [cited 2026 Sep 10]. Available from: <https://3doctor.hss.moph.go.th/main/>
 14. Public Health Strategy Development Group, Chonburi Provincial Public Health Office. Summary of operation results according to Ministry of Public Health inspection issues, round 2, fiscal year 2023. Chonburi: Chonburi Provincial Public Health Office; 2023.
 15. International Commission of Jurists. The human rights consequences of the Eastern Economic Corridor and special economic zones in Thailand [monograph on the Internet]. Geneva: International Commission of Jurists; 2020 [cited 2026 Sep 11]. Available from: <https://www.icj.org/wp-content/uploads/2020/08/Thailand-SEZs-Publication-2020-ENG.pdf>
 16. Knodel J, Teerawichitchainan B, Prachuabmoh V, Pothisiri W. The situation of Thailand's older population: an update based on the 2014 survey of older persons in Thailand. Ann Arbor (MI): Population Studies Center, University of Michigan; 2015. Research Report No.15-845.
 17. Amin R, Behrman JR, Kohler HP. Rural-urban migration and depression in ageing family members left behind. *J Epidemiol Community Health* 2010;64:66-71. doi:10.1136/jech.2008.085316.
 18. Mingkaew B. Factors related to participation in driving quality of life development work of district quality of life development committees in Surat Thani Province [master's thesis]. Nonthaburi: Sukhothai Thammathirat Open University; 2021.
 19. Chongchit S, Wachiradilok P, Somnuek K, Tato R. Success factors in the operation of district quality of life development committees. *J Health Syst Res* 2020;14:42-53.
 20. Bloom BS. Mastery learning. *Evaluation Comment* 1968;1:1-12.
 21. Likert R. The human organization: its management and value. New York: McGraw-Hill; 1967..
 22. Best JW. Research in education. Englewood Cliffs (NJ): Prentice-Hall; 1970.
 23. Rovinelli RJ, Hambleton RK. On the use of content specialists in the assessment of criterion-referenced test item validity. *Tijdschr Onderwijsres* 1977;2:49-60.
 24. Suwannarat A. Finding a quality test for teaching management. *Songkla Med J* 2009;27:381-8.
 25. DeVon HA, Block ME, Moyle-Wright P, Ernst DM, Hayden SJ, Lazzara DJ, et al. A psychometric toolbox for testing validity and reliability. *J Nurs Scholarsh* 2007;39:155-64.
 26. Tibshirani R. Regression shrinkage and selection via the lasso. *J R Stat Soc Series B Stat Methodol* 1996;58:267-88. doi: 10.1111/j.2517-6161.1996.tb02080.x.
 27. Harrell FE. Regression modeling strategies: with applications to linear models, logistic and ordinal regression, and survival analysis. 2nd ed. New York: Springer; 2015.
 28. Field A. Discovering statistics using IBM SPSS Statistics. 5th ed. London: SAGE Publications; 2018.
 29. Hair JF, Black WC, Babin BJ, Anderson RE. Multivariate data analysis. 8th ed. Hampshire: Cengage Learning EMEA; 2019.

30. Ministry of Public Health. Ministry of Public Health key performance indicators, fiscal year 2018 [homepage on the Internet]. Bangkok: Ministry of Public Health; 2018 [Cited 2026 Sep 12]. Available from: https://healthkpi.moph.go.th/kpi2/kpi/index/?id=770&lv=2&z=04&kpi_year=2561
31. Thunkham P. Development process of district quality of life development committee in health promotion for the elderly, Uttaradit Province. *Res Dev Health Syst J* 2020;6:112–26.
32. Deci EL, Ryan RM. Self-determination and intrinsic motivation in human behavior. New York: Plenum Press; 1985.
33. Wallerstein N, Oetzel JG, Sanchez-Youngman S, Boursaw B, Dickson E, Kastelic S, et al. Engage for equity: a long-term study of community-based participatory research and community-engaged research practices and outcomes. *Health Educ Behav* 2020;47:380–90. doi:10.1177/1090198119897075.
34. Kasemsup V, Suriyawongpaisal W, Thamma-aphiphol K, Dammee D, Suthisukhon K. Engagement of the district health board in providing preventive measures for chronic kidney disease care in Thailand: the perspective of a multidisciplinary team. *J Public Health Dev* 2020;18:1–9.
35. Whittingham MJ, Stephens PA, Bradbury RB, Freckleton RP. Why do we still use stepwise modelling in ecology and behaviour? *J Anim Ecol* 2006;75:1182–9. doi: 10.1111/j.1365-2656.2006.01141.x.
36. Mundry R, Nunn CL. Stepwise model fitting and statistical inference: turning noise into signal pollution. *Am Nat* 2009;173:119–23. doi:10.1086/593303.

Supplementary Table 1 Number and percentage of the sample population classified by knowledge regarding elderly health management (N=231)

Knowledge assessment items	Knowledge regarding elderly health management	
	Correct n (%)	Incorrect / Uncertain n (%)
1. The District Health Board (DHB) plays a primary role in integrating cooperation across all sectors to improve the quality of life for the elderly in the area.	221 (95.67)	10 (4.33)
2. The operation of the DHB regarding elderly health management focuses exclusively on providing medical services within community hospitals.	171 (74.03)	60 (25.97)
3. The DHB is responsible for defining policies and guidelines for elderly health management that are appropriate for the local context.	200 (86.58)	31 (13.42)
4. The DHB operates based on the concept of “Area-based, People-centered” management.	213 (92.21)	18 (7.79)
5. The UCCARE framework emphasizes multi-sectoral collaboration to ensure continuity of care for the elderly.	205 (88.74)	26 (11.26)
6. Community participation and stakeholder networks are essential components in enhancing the quality of life for the elderly.	212 (91.77)	19 (8.23)
7. Resource management for elderly healthcare is restricted solely to public health agencies to ensure maximum efficiency.	128 (55.41)	103 (44.59)
8. Elderly health management should focus on holistic care covering all dimensions: physical, mental, social, and spiritual.	115 (49.78)	116 (50.22)
9. The DHB’s role is limited strictly to health promotion for the elderly.	173 (74.89)	58 (25.11)
10. Elderly healthcare should be tailored to the potential, problems, and needs of the elderly, including those who are socially active, home-bound, or bed-bound.	207 (89.61)	24 (10.39)

Supplementary Table 2 Number and percentage of the sample population classified by attitude toward participation in elderly health management by item (N=231)

Attitude assessment items	Attitude toward participation in elderly health management				
	Strongly agree n (%)	Agree n (%)	Moderate n (%)	Disagree n (%)	Strongly disagree n (%)
Problem Recognition Aspect					
1. You believe that elderly health problems in the community are critical issues that require urgent resolution.	53 (22.94)	128 (55.41)	45 (19.48)	5 (2.16)	0 (0.00)
2. You believe that elderly health management can help reduce the health and social problems of the elderly in the area.	56 (24.24)	128 (55.41)	42 (18.18)	5 (2.16)	0 (0.00)
3. You believe that without effective health management measures, elderly health problems will impact the economy and society in the future.	51 (22.08)	143 (61.90)	31 (13.42)	6 (2.60)	0 (0.0)
4. You think that elderly health problems are individual and family matters, and there is no need for DHB intervention.	52 (22.51)	112 (48.48)	41 (17.75)	20 (8.66)	6 (2.6)
Perceived Benefits Aspect					
5. You believe that participating in elderly health management according to the DHB's UCCARE framework will improve the quality of life for the elderly, families, and community members.	44 (19.05)	103 (44.59)	51 (22.08)	15 (6.49)	18 (7.79)
6. You believe that participating in elderly health management according to the DHB's UCCARE framework is more of a burden than a benefit.	129 (55.84)	82 (35.50)	20 (8.66)	0 (0.00)	0 (0.00)
7. You believe that elderly health management operations following the UCCARE framework help enhance the image and role of the DHB in local quality of life development.	87 (37.66)	121 (52.38)	21 (9.09)	2 (0.87)	0 (0.00)
8. You believe that the DHB's participation in elderly healthcare can lead to the development of sustainable local health policies.	77 (33.33)	124 (53.68)	29 (12.55)	1 (0.43)	0 (0.00)
Social Pressure Aspect					
9. You believe that if the DHB fails to implement elderly health management, it may be perceived as a lack of accountability toward the community.	47 (20.35)	110 (47.62)	64 (27.71)	9 (3.90)	1 (0.43)
10. You believe that collaborating with both public and private sectors in elderly health management is essential, as it enhances operational efficiency.	42 (18.18)	126 (54.55)	59 (25.54)	4 (1.73)	0 (0.00)
11. You feel that participation in elderly health management is driven more by pressure from external agencies than by the voluntary commitment of the DHB.	57 (24.67)	124 (53.68)	44 (19.05)	6 (2.60)	0 (0.00)
12. You feel that participation in elderly health management is something the community expects the DHB to perform.	44 (19.05)	110 (47.62)	58 (25.11)	18 (7.79)	1 (0.43)
Personal Values Aspect					
13. You believe that elderly health management operations are an opportunity to create a supportive and caring community.	104 (45.02)	102 (44.16)	21 (9.09)	4 (1.73)	0 (0.00)
14. You believe that elderly health management is unrelated to the primary role of the DHB.	96 (41.56)	112 (48.48)	23 (9.96)	0 (0.00)	0 (0.00)
15. You feel proud to participate in improving the quality of life for the elderly in the community.	115 (49.78)	101 (43.72)	15 (6.49)	0 (0.00)	0 (0.00)
16. You believe that elderly healthcare is a significant duty of the DHB and is therefore a priority for you.	118 (51.08)	93 (40.26)	18 (7.79)	2 (0.87)	0 (0.00)

Supplementary Table 2 (continued)

Attitude assessment items	Attitude toward participation in elderly health management				
	Strongly agree n (%)	Agree n (%)	Moderate n (%)	Disagree n (%)	Strongly disagree n (%)
Legal Authority Aspect					
17. You believe that laws and regulations related to elderly health management are constraints that make the DHB's operations more difficult.	47 (20.35)	111 (48.05)	65 (28.14)	6 (2.60)	2 (0.87)
18. You believe that clear existing regulations help the DHB operate elderly health management systematically and with proper direction.	52 (22.51)	114 (49.35)	55 (23.81)	10 (4.33)	0 (0.00)
19. You believe that if laws are strictly enforced, it will improve the effectiveness of elderly health management operations.	63 (27.27)	117 (50.65)	47 (20.35)	4 (1.73)	0 (0.00)
20. You believe that relevant laws and regulations support the DHB's role in elderly health operations, particularly in protecting and advocating for the rights of the elderly.	39 (16.88)	114 (49.35)	67 (29.00)	10 (4.33)	1 (0.43)

Supplementary Table 3 Number and percentage of the sample population classified by motivation for participation in elderly health management by item (N=231)

Motivation assessment items	Motivation for participation in elderly health management				
	Strongly agree n (%)	Agree n (%)	Moderate n (%)	Disagree n (%)	Strongly disagree n (%)
1. You feel proud to be part of the DHB team when elderly health management goals are successfully achieved.	42 (18.18)	108 (46.75)	61 (26.41)	18 (7.79)	2 (0.87)
2. You feel motivated when your work is recognized by supervisors, colleagues, or community members.	46 (19.91)	107 (46.32)	63 (27.27)	11 (4.76)	4 (1.73)
3. You believe that the DHB's role in elderly health management is a challenging task that provides significant benefits to the community.	49 (21.21)	101 (43.72)	59 (25.54)	17 (7.36)	5 (2.16)
4. You believe that the responsibilities assigned to you in elderly health management align with your knowledge and experience.	42 (18.18)	106 (45.89)	63 (27.27)	18 (7.79)	2 (0.87)
5. Positive relationships with agencies and committees within the DHB team contribute to the efficiency of elderly health management operations.	37 (16.02)	120 (51.95)	56 (24.24)	15 (6.49)	3 (1.30)
6. Being a member of the DHB team increases your level of social recognition and acceptance.	52 (22.51)	117 (50.65)	46 (19.91)	10 (4.33)	6 (2.60)
7. You believe that the policies and administrative guidelines of your parent organization empower the DHB to participate effectively in elderly health management.	45 (19.48)	109 (47.19)	56 (24.24)	16 (6.93)	5 (2.16)
8. You believe that the work environment and atmosphere within the DHB are conducive to effective elderly health management.	56 (24.24)	117 (50.65)	46 (19.91)	10 (4.33)	2 (0.87)
9. You believe that performing your role within the DHB does not negatively impact your personal life (Work-Life Balance).	50 (21.65)	110 (47.62)	57 (24.68)	12 (5.19)	2 (0.87)
10. You are confident in the stability of the DHB team to provide continuous elderly health management for the community.	56 (24.24)	116 (50.22)	49 (21.21)	9 (3.90)	1 (0.43)

Supplementary Table 4 Number and percentage of the sample population classified by participation in elderly health management operations based on the UCCARE framework by item (N=231)

Participation items	Participation in elderly health management operations based on the UCCARE framework				
	Strongly agree n (%)	Agree n (%)	Moderate n (%)	Disagree n (%)	Strongly disagree n (%)
Unity team					
1. You participate in planning and setting elderly health management goals together with the DHB team.	42 (18.18)	108 (46.75)	61 (26.41)	18 (7.79)	2 (0.87)
2. You attend meetings to exchange opinions and ideas regarding elderly health management with the DHB team.	46 (19.91)	107 (46.32)	63 (27.27)	11 (4.76)	4 (1.73)
3. You participate in the decision-making process for key issues related to elderly health management.	49 (21.21)	101 (43.72)	59 (25.45)	17 (7.36)	5 (2.16)
4. You provide guidance and recommendations on elderly health management operations within the DHB team.	42 (18.18)	106 (45.89)	63 (27.27)	18 (7.79)	2 (0.87)
5. You receive full support for work integration and information sharing within the DHB team.	37 (16.02)	120 (51.95)	56 (24.24)	15 (6.49)	3 (1.30)
Customer focus					
6. You conduct surveys to monitor and track the health situation of the elderly within the area.	52 (22.51)	117 (50.65)	46 (19.91)	10 (4.33)	1 (0.43)
7. You participate in defining policies, work plans, or health measures that respond to the specific needs of the elderly.	45 (19.48)	109 (47.19)	56 (24.24)	16 (6.93)	5 (2.16)
8. You participate in implementing activities to promote equitable access to public health services for all elderly individuals.	56 (24.24)	117 (50.65)	46 (19.91)	10 (4.33)	2 (0.87)
9. You participate in campaigns to raise awareness and educate the public regarding the rights and dignity of the elderly.	50 (21.65)	110 (47.62)	57 (24.68)	12 (5.19)	2 (0.87)
10. You listen to and gather feedback from the elderly and their families regarding elderly health management activities.	56 (24.24)	116 (50.22)	49 (21.21)	9 (3.90)	1 (0.43)
Community participation					
11. You participate in encouraging the community to take part in planning and decision-making for local elderly health management.	56 (24.24)	116 (50.22)	49 (21.21)	9 (3.90)	1 (0.43)
12. You coordinate with relevant agencies to provide health care for the elderly within the community.	66 (28.57)	120 (51.95)	38 (16.45)	6 (2.60)	1 (0.43)
13. You participate in building networks with the private sector or civil society to mobilize cooperation (e.g., clubs, NGOs, etc.).	44 (19.05)	115 (49.78)	63 (27.27)	6 (2.60)	3 (1.30)
14. You encourage all sectors to support health leaders and volunteers, such as Village Health Volunteers and Elderly Care Volunteers, in caring for the elderly.	53 (22.94)	117 (50.65)	53 (22.94)	4 (1.73)	4 (1.73)
15. You participate in encouraging the community to organize activities for the elderly, such as elderly clubs and elderly schools.	60 (25.97)	114 (49.35)	47 (20.35)	7 (3.03)	3 (1.30)
Appreciation					
16. You express appreciation and provide morale support to health personnel and caregivers working with the elderly.	64 (27.71)	134 (58.01)	31 (13.42)	4 (1.73)	4 (1.73)

Supplementary Table 4 (continued)

Participation items	Participation in elderly health management operations based on the UCCARE framework				
	Strongly agree n (%)	Agree n (%)	Moderate n (%)	Disagree n (%)	Strongly disagree n (%)
17. You participate in honoring and presenting certificates of recognition to individuals or organizations that serve as role models in elderly care.	62 (26.84)	108 (46.75)	54 (23.38)	6 (2.60)	1 (0.43)
18. You participate in boosting morale by providing encouragement or awards to health volunteers and health leaders with outstanding performance in elderly health management.	55 (23.81)	113 (48.92)	49 (21.21)	11 (4.76)	3 (1.30)
19. You participate with the community in organizing activities that demonstrate gratitude and respect toward the elderly.	44 (19.05)	114 (49.35)	62 (26.84)	9 (3.90)	2 (0.87)
20. You participate in publicly praising role-model individuals or families in elderly healthcare to be recognized by society.	44 (19.05)	113 (48.92)	58 (25.11)	14 (6.06)	2 (0.87)
Resource sharing and human development					
21. You participate in budget management to support operations in elderly health management.	32 (13.85)	95 (41.13)	64 (27.71)	31 (13.42)	9 (3.90)
Resource sharing and human development					
22. You participate in mobilizing resources and cooperation from various agencies for elderly healthcare.	32 (13.85)	99 (42.86)	69 (29.87)	26 (11.26)	5 (2.16)
23. You participate in developing the potential of personnel to ensure they have the knowledge and skills for elderly care.	34 (14.72)	106 (45.89)	65 (28.14)	20 (8.66)	6 (2.60)
24. You participate in promoting and supporting the capacity building of health leaders and volunteers (e.g., VHV and Elderly Care Volunteers).	39 (16.88)	121 (52.38)	50 (21.65)	17 (7.36)	4 (1.73)
25. You participate in establishing mechanisms for knowledge management regarding elderly health within the community.	46 (19.91)	126 (54.55)	48 (20.78)	8 (3.46)	3 (1.30)
E: Essential care					
26. You participate in health screening for the elderly to monitor their health status in the community.	52 (22.51)	107 (46.32)	51 (22.08)	19 (8.23)	2 (0.87)
27. You participate in organizing activities to promote health and prevent disease among the elderly in the area.	43 (18.61)	111 (48.05)	55 (23.81)	17 (7.36)	5 (2.16)
28. You participate in providing proactive health services for dependent elderly groups in the community.	41 (17.75)	106 (45.89)	61 (26.41)	17 (7.36)	6 (2.60)
29. You participate in the continuous care and management of illnesses and chronic diseases in the elderly.	45 (19.48)	104 (45.02)	54 (23.38)	19 (8.23)	9 (3.90)
30. You participate in creating elderly-friendly environments and service systems within the community.	45 (19.48)	110 (47.62)	63 (27.27)	11 (4.76)	2 (0.87)