International Journal of Public Health Science (IJPHS)
Vol. 15, No. 1, March 2026, pp. 216~223
ISSN: 2252-8806, DOI: 10.11591/ijphs.v15i1.26723

Factors affecting health-promoting services provision of the sub-district health promoting hospital transferred to mahasarakham provincial administration

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Article Info

Article history:

Received Apr 18, 2025
Revised Jan 4, 2026
Accepted Feb 16, 2026

Keywords:

Caregivers
Community health
Dependent older adults
Long-term care
Quality of life

ABSTRACT

Hospital services have been transferred to provincial government oversight, making it important to assess the impact of this policy on service quality and efficiency. This study examined factors influencing service delivery at sub-district health-promoting hospitals transferred to the Mahasarakham Provincial Administration in Mahasarakham Province, Thailand. The research was conducted from March 2022 to September 2023 using a mixed-methods approach, including descriptive content analysis for qualitative data. The examined factors were categorized into accessibility, processes, productivity, and outcomes. Data were collected from 500 health workers and 300 patients using questionnaires consisting of six sections with a Likert scale to evaluate perceptions of service quality. Paired t-tests were applied to compare service unit performance before and after the transfer, while one-way ANOVA was used to assess differences among service units. Binary logistic regression identified key factors influencing service quality. The findings revealed a significant relationship between healthcare workers' attitudes and skills and overall service quality. Units with less than 50% transfer showed minimal improvement, indicating that the extent of transfer strongly influences service outcomes. Despite these differences, the main goal of health promotion remained consistent across units. Effective policy decisions, appropriate management, and stakeholder engagement are essential to improve health outcomes. These findings provide insights for policymakers and administrators to refine health service transfer policies and highlight the need for further research on long-term impacts on service quality and patient outcomes.

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1. INTRODUCTION

Thailand views healthcare decentralization as a key strategy to enhance the quality, efficiency, and fairness of its health system, which was established according to the 1997 Constitution, empowering local leaders and citizens to have greater control over health services. This approach was subsequently supported by laws passed in 1999 and plans developed in 2000 and 2008 that explained how local governments could take over public health work to better manage diseases and improve care [1], [2]. This change also affected many local administrative groups, showing that decentralization helps local areas run health insurance programs and provide better healthcare [3].

According to the 2017 Thai Constitution, the local transfer of public health duties aimed to allow local leaders to manage and provide health services according to the law. This transfer involved plans to pass on health duties to local governing bodies, along with steps for moving money, staff, and responsibilities. National reform laws provided directions on the transfer and appointed groups to take care of new tasks. Despite these steps, reports from 2008 to 2020 show delays. Out of 9787 health-promoting hospitals, only 60-70 have been moved to local control [4]. Moreover, the groups formed to handle these transfers have not met their goals; thus, the transfer process needs to be improved for better public health work [5], [6]. Primary care is key to national health development. It focuses on ensuring access to healthcare for all. International studies show that strong primary health systems lead to better access to essential health services. is being enhanced as local health organizations have selected specific hospitals that focus on promoting health. These hospitals are being managed in a way that allows for their smooth integration into the broader health system with the goal of improving the quality of services available to the local community. Building strong primary health systems is essential for fair healthcare access and the reduction of hospital overcrowding in Thailand [7]-[9].

In 2023, new health service standards were introduced to assist in developing and assessing service quality fairly and efficiently [10]. However, issues related to social and cultural standards remain, and the actions of healthcare workers play a big role. Thus, it is important to train primary care workers, especially those in clinical nursing, to better care for patients, promote health, and prevent and treat diseases [11]-[13]. Primary care centers also need to improve collaboration and personnel management [14], [15]. Problems like low worker motivation, inadequate medical supplies, poor referral systems, and financial insufficiency have arisen after these hospitals were moved under local control, leading to lower service quality. Given these challenges, the present study investigated the contributing factors. It assessed the quality of care provided by health-promoting hospitals after they were transferred to local management and explored how professional nurses contributed to maintaining high service standards under the new leadership [16]. The research questions were as follows: i) What primary elements influence the standard of care provided by health-promoting hospitals once under the management of local authorities? ii) What is the connection between the attitudes and abilities of healthcare workers and the quality of services provided in these local areas?

Thus, this study sought to examine the effect of decentralization on the operations of sub-district health-promoting hospitals by evaluating these institutions based on their day-to-day activities using a combination of approaches. This research can help improve policies and real-world practices, leading to better healthcare under Thailand's new health system structure. The results are intended to help shape future policy and practice and bridge the gap between decentralization plans' aims and the on-the-ground reality.

2. METHOD

2.1. Conceptual framework

The study used the Global Fund-health systems science (HSS) framework [11]. which is organized into 4 parts, to assess relevant factors that affect the quality and efficiency of healthcare services.

- Input Factors: The input factors component includes 6 parts assessing how healthcare services are provided and who provides them. It covers all the resources needed for healthcare provision, like buildings, medical tools, and healthcare personnel.
- Processes: The processes component is related to the skills of healthcare workers. It looks at how healthcare is provided through parameters like patient treatment, health maintenance, disease prevention, and recovery. It reflects how healthcare workers do their jobs.
- Outputs: The outputs component includes the services provided in hospitals and the community. It measures how well healthcare is provided and received in these settings.
- Outcomes: The outcomes component uses SERVQUAL and the quality and outcome framework (QOF) [4], [17]. to check healthcare quality and effectiveness. SERVQUAL checks service quality in areas like reliability, trust, the look of the service, care, and response times. QOF checks the results based on clear standards [18]. Using both the Global Fund-HSS and these models helps assess both how healthcare works and how patients and healthcare workers perceive its quality. This approach covers several areas of healthcare and helps understand how moving healthcare decisions to the local level affects the quality and efficiency of services.

2.2. Study setting

This mixed-methods study was conducted from April 2022 to September 2023 at the sub-district health-promoting hospital in Mahasarakham Province. This hospital was chosen because it actively provides health-promoting services that are now being managed under a new provincial system in Thailand.

2.3. Ethics approval

The study received approval from the Human Research Ethics Committee at Mahasarakham University (approval number 066-443/2566). It followed standard procedures, with researchers clearly explaining the study's purpose, advantages, and methods, as well as the responsibilities of participants. Data were kept private and used only for research purposes. Participants could refuse participation or withdraw at any time without negative consequences. All participants provided informed consent before joining the study.

2.4. Population and Sample

The study included 500 professional healthcare workers, with the sample size calculated using the Daniel and Cross formula [19].

$$n = \frac{\mathrm{NP}(1-P)z^2_{1-a/2}}{d^2\,(N-1)+p(1-p)z^2_{1-a/2}}$$

$$n = \frac{5{,}247\mathrm{X}0.179(1-0.179)1.96^2}{0.0472^2\,(5{,}247-1)+0.179(1-0.179)1.96^2}$$

$$n = 500$$

Here, n represents the sample size, N is the population size, p is the proportion, $z^2_{1-a/2}$ equals 1.96, and d is the margin of error.

Eligible participants were healthcare workers who had at least 6 months of experience at health-promoting hospitals after the transfer. The study also included 300 patients. To ensure participant safety, rules for stopping data collection and deleting personal records if participants felt uncomfortable or distressed were established. If someone was forced to participate, data collection was stopped immediately, and any related documents were destroyed. These data contributed to categorizing the factors that affect health-promoting services. These factors were organized into 4 main categories: accessibility, processes, productivity, and outcomes, corresponding to the goals of the study.

2.5. Research instruments

The study used a questionnaire with 6 sections and 6 items. The first part covered general information related to health-promoting hospitals and their activities. The second part focused on the service provider team. The third part covered key indicators from the QOF and primary service outcomes, such as the percentage of people aged 30 to 70 years in Thailand who have high blood pressure or diabetes. The fourth part contained 39 questions about the roles, responsibilities, and skills of health workers, based on research from the Canadian Nurses Association and other sources [17]. Part 5 included the SERVQUAL questionnaire, developed by Kittisak Saengthong [11]. Designed to assess service quality by considering people's feelings and expectations. The SERVQUAL questionnaire considered 5 dimensions: tangibility, reliability, responsiveness, assurance, and empathy. Each dimension included 5 questions, and the responses were rated on a 5-point Likert scale [13]. Part 6 included 11 items focusing on the leadership qualities required in administrators in health-promoting hospitals, scored using a 5-point Likert scale, with average scores calculated using Best's formula [18].

2.6. Quality verification of research instruments

Three experienced professionals assessed the validity of the research tools based on their content, with modifications implemented according to their suggestions. The validation process involved computing the Index of item objective congruence [19]. for the 6 sections of the health workers' questionnaire, which produced the following scores: 0.89, 0.87, 0.92, 0.88, 0.91, 0.85, and 0.94, respectively.

2.7. Data collection

- Preparation stage: The researcher built a good relationship with the participants by introducing themselves and explaining the aim and details of the questionnaire. The researcher also arranged specific times and locations for data collection.
- Data collection stage: The researcher gathered the data in private, making sure to avoid any personal bias, and acted consistently to highlight the value of the information collected, ensuring that nothing important was missed.

2.8. Data analysis

Descriptive statistics were used to summarize the personal data of the sample. A paired t-test was applied to assess the effect of the intervention before and after its implementation. To compare the effectiveness between groups, one-way ANOVA was applied. Additionally, a binary logistic regression

analysis was carried out to examine the factors influencing the quality-of-service delivery. All statistical analyses were conducted using SPSS version 23.0, ensuring uniformity and dependability.

Qualitative data analysis was conducted according to the guidelines set by Streiber-Speziale and Carpenter. The process involved the following steps: First, the researcher examined each line of the transcribed interviews to gain a general understanding of the participants' thoughts, emotions, and experiences, keeping the research objectives in mind. Next, meaning units were identified, which were keywords, sentences, or parts of the interviews that reflected participants' perspectives on the quality of primary care services. These units were then simplified, assigned codes, and grouped into related sub-themes and broader themes. Finally, the sub-themes were connected to form comprehensive themes that clearly illustrate the participants' experiences with primary care services.

2.9. Ensuring trustworthiness

Lincoln ensured the data were trustworthy using several methods [20]. Experts and participants provided feedback to ensure that the data covered enough topics and was sufficiently detailed and rich, which helped confirm data credibility. To ensure reliability, the researcher reviewed reflection notes and group discussion transcripts independently and then worked with other researchers and experts in the community to examine the findings. To ensure the results could be applied to other situations, a varied group of people was chosen, including individuals of different ages, genders, and backgrounds. The data's relevance to similar situations was also ensured. Confirmability was maintained throughout the study by using different data sources such as audio recordings, field notes, and personal reflection journals. These sources were analyzed using NVivo 1022 [21]. to ensure consistent data referencing and validation.

3. RESULTS AND DISCUSSION

3.1. Overview of services provided at sub-district health-promoting hospitals managed by provincial administrative organizations

As required by the Primary Health System Act of 2020, most medium-sized hospitals in Health Area 7 (59.82%) were classified as primary care units (PCUs) before they were transferred to the provincial administrative structure, while 40.18% were categorized as non-primary care units (NPCUs). These hospitals initially had a high-performance score of 88.53%, but this score decreased to 82.43% following the transfer. On average, these hospitals serve approximately 4115 individuals (with a standard deviation [SD] of 3405.05), mainly in areas with populations ranging from 3000 to 8000 people (60.69%), and no more than 1000 households (63.11%). These hospitals cover health insurance (67.50%), civil servant benefits (70.80%), and social security (44.80%). They also support 4-8 villages (57.40%). Our research shows that the roles and skills of health workers have changed after the transfer. The highest level of competence was noted in health promotion, with an average of 5.25 (SD = 0.62). In contrast, the lowest level of competence was in developing primary nursing quality, with an average score of 4.26 (SD = 1.61). Scores for specific tasks, like taking patient histories and assessments, remained consistent at 3.41 (SD = 1.58) and 4.41 (SD = 1.53), respectively.

3.2. Factors influencing the delivery of services at sub-district health-promoting hospitals that have been transferred to provincial administrative bodies

The study examined the quality of services provided in primary care settings. It evaluated the delivery of services across 6 key areas: medical treatment, health promotion, disease prevention and control, rehabilitation, emergency care, and palliative care: i) After the transfer, the group that moved entirely received the highest average scores, particularly in the tangible aspects of service. Their scores were 3.62 for tangibility, 4.38 for reliability, 4.17 for responsiveness, 4.36 for assurance, and 4.56 for empathy; ii) After the transfer, there was a noticeable difference between expectations and real experience. In general, expectations were higher than the real service experiences across all areas. This difference was found to be statistically significant at the 0.05 level. The gap between expectations and reality was most apparent in the group where 100% of the transfer took place, as significant differences were observed in all areas. On the other hand, groups with less than 50% transfer also had higher expectations compared to their actual experiences. However, significant differences were only found regarding whether the service provided was fair and free from discrimination, with no major differences observed in terms of being attentive and respectful; and iii) Staff attitudes before and after the transfer showed some changes. In 2023, the average attitude score for the service team was 3.56 (SD = 0.78). The highest score was related to patient and public benefit at 4.54 (SD = 0.65). In 2023, the average attitude score slightly improved to 3.52 (SD = 0.75). The highest score for patient and public benefit remained at 4.65 (SD = 0.57). An improvement in colleague relationships was noted, with the score reaching 5.03 (SD = 0.69). The lowest score in both years was related to perceived adequate compensation, being 3.02 (SD = 0.82) before the transfer and increasing slightly to 3.09 (SD = 1.05) after the transfer. When comparing outcomes before and after the complete transfer, a significant decrease was seen, especially in indicators that impact the general population.

In units where the transfer rate was between 50% and 99%, decreases occurred in several indicators compared to baseline levels. However, some indicators, such as cervical cancer screenings for women between the ages of 30 and 70 years, conducted every 5 years, did not show a statistically significant result. In units where the transfer rate was less than 50%, there were notable changes in health screenings for conditions like diabetes and hypertension among Thai individuals aged 30 to 70 years. This highlights the significant effect of service transfers on local healthcare systems and community development. These findings suggest the need for planned and strategic efforts to improve health outcomes. Table 1 provides a detailed summary of nurses' views regarding the services available at sub-district health-promoting hospitals.

We performed an ANOVA to examine the data, categorizing the results according to the level of transfer (100% for Group 1, 50 to 99% for Group 2, and less than 50% for Group 3) to identify variations in outcomes within primary healthcare facilities. The analysis covered 3 key health indicators: diabetes screening for Thai adults between the ages of 30 and 70 years, a woman's first antenatal visit being within 3 months of pregnancy, and cervical cancer screening received every 5 years by women aged 30 to 70 years. The findings revealed statistically significant differences in at least one of these areas, suggesting that the effectiveness of healthcare services differed depending on the transfer level. These differences were significant at a p-value threshold of 0.05, as presented in Table 2.

Table 1. Views of health workers on subdistrict health-promoting hospital services

Health service missions	Group one: provincial transfer	Group two: more than half transferred	Group three: less than half transferred
Medical treatment	Meeting standards	Meeting standards	Similar
Health promotion	Standardized services	Standardized services	Similar
Disease prevention and control	Comprehensive	Comprehensive	Similar
Health rehabilitation	Comprehensive	Comprehensive	Similar
Emergency medicine	Training	Training	Similar

Table 2. Comparison of differences in outcomes based on the performance of primary agencies in meeting their targets, categorized by transfer groups

Indicators	Transfer groups	Average difference in outcomes	SD	F	p-value
1. Percentage the sample group aged 30–70 years who have been screened for blood sugar levels.	Group one	-12.52	20.24		
	Group two	-14.51	22.79	5.62	0.001
	Group three	-5.23	10.15		
2. Percentage the sample group population aged 30–70 years who have been screened for high blood pressure.	Group one	-0.14	0.54		
	Group two	-0.22	0.46	0.76	0.450
	Group three	-0.19	0.40		
3. Percentage the pregnant women who received their first antenatal care visit within 3 months.	Group one	-8.35	15.60		
	Group two	-5.11	18.43	4.85	0.006*
	Group three	0.54	16.20		
4. Cervical cancer screening coverage in women aged 30–70 years within 5 years.	Group one	-7.50	16.40		
	Group two	-4.12	19.30	4.02	0.016*
	Group three	0.43	16.25		

*Significance level $p < 0.05$: Group one showed 100% transfer, Group two had between 50% and 99% transfer, and Group three had less than 50% transfer. The analysis was conducted using ANOVA statistics.

4. DISCUSSION

This study assessed factors affecting service provision in sub-district health-promoting hospitals handed over to the Mahasarakham Provincial Administration, broken down into 4 categories: input, process, output, and outcomes. It focused on service results and quality using the SERVQUAL and QOF tools. The discussion covers 3 areas: i) how the system was developed, ii) how nurses work, and ii) the quality of care.

4.1. System development

In the broader context of establishing PCUs, our study found that these units achieved all their objectives, with statistically significant differences at the 0.05 level between the groups that underwent transfers. The group that experienced a complete transfer demonstrated clear improvements, as all average scores exceeded 90%. The Provincial Administration Organization states that the changes in primary healthcare align with public health policies and service standards [3], [4], and have played a major role in improving outcomes. This highlights the importance of fairness and efficiency. The results regarding specific tasks support these findings. Performance in taking patient histories and assessments was consistent, with scores of 4.61 (SD = 0.56 and SD = 0.67 before and after the transfer, respectively). It is important to recognize these consistencies because they show the reliability of clinical practices even with systemic changes and can help guide improvements in community health services.

The study also revealed some key factors that affect service provision, especially regarding decision-making and basic healthcare. Nurses were very important in the development of the primary healthcare system after the transfer. However, reality differed significantly from expectations. For example, an 81.87% progress in job functions was noted, which was less than expected, along with a 53.80% drop in indicators, mainly because of insufficient staff and medical supplies, a lack of linked referral systems, and insufficient finances. People also had more difficulty taking care of themselves and sometimes behaved inappropriately while receiving assistance [6]. These results are comparable to the findings of Peerapan and Pasunon [22]. Who assessed the challenges in service delivery at a sub-district health-promoting hospital situated in Uttaradit Province. Their study identified several issues, such as insufficient service points, a lack of adequate medical personnel, and poorly organized service procedures, including limited consultation opportunities and unclear involvement of the community network. To address these accessibility challenges, strategies should focus on improving the service environment, increasing the number of medical staff, integrating different health services, simplifying the process for accessing care and sharing information with the public, and enhancing the skills of caregivers, along with community collaboration [22].

4.2. Health workers' practices

The study found that most people (97.50% and 89.75%) had high expectations and thought the service was good. The relevant factors were related to ease of obtaining help and nurse quality in sub-district health-promoting hospitals after the transfer. The highest average score was in health promotion at 4.35 (SD = 0.59), while the lowest score was in developing primary nursing quality at 3.67 (SD = 0.86).

The study highlights the complexities of how health workers interact with people's beliefs, information needs [18], and practical and logistical challenges, such as obtaining supplies and meeting client needs. Previous studies helped develop ways to overcome access issues by studying factors that support health workers in meeting individual patient needs. Health workers' abilities are very important, so improving the growth of health workers in the primary care system is essential for establishing standards and improving the skills of nurses. This helps ensure that healthcare is of high quality and delivered efficiently. Specifically, caring for patients with multiple health problems requires targeted education. Based on the work of Lawson *et al.* [23]. We suggest using an international framework for training on multiple health problems. This framework includes updated clinical guidelines, learning through real-life scenarios, and teamwork with different professionals, tailored to fit the needs of nurses who care for people with multiple health problems. This method aligns with the typical experiences and everyday requirements of service users and directly addresses the shortcomings in existing training for handling multiple health issues, which could improve patient outcomes and make healthcare more efficient [15], [16], [24].

4.3. Quality of care

The study examined the situation in primary care units prior to and following the transfer, assessing the quality of service based on the SERVQUAL and QOF criteria. We noticed a major drop in health results after the complete transfer of services, with statistically significant changes at a p-value of 0.05. Our analysis, detailed in Table 2, covered important health measures such as diabetes screening for Thai people aged 30 to 70 years, first antenatal care visits for pregnant women within the first 12 weeks of pregnancy, and cervical cancer screenings over a 5-year period for women between the ages of 30 and 60 years. The findings showed significant statistical differences in at least one of these groups, highlighting how the effectiveness of healthcare delivery varied depending on the level of service transfer. This finding aligns with previous research, which emphasizes that factors such as people's beliefs and attitudes, how they receive and process information, and practical and logistical challenges greatly influence the ability of skilled healthcare workers to provide essential care. Despite these insights, reports from service providers regarding these factors remained unclear. The result in [24]-[26] demonstrated that the attitudes of healthcare workers can be a major obstacle. After reviewing the findings and related challenges, as well as their effect on the complex and serious process of seeking healthcare, it appears that future initiatives aimed at improving service quality should concentrate on recognizing and fulfilling the beliefs and needs of individuals who are receiving care, along with finding effective solutions to guarantee that all people can access high-quality healthcare [27], [28].

We recognize certain limitations in our study that should be considered when interpreting the results. First, the study relied on observations, which might introduce selection bias and make it difficult to clearly link service transfer with changes in health outcomes. Second, while we considered several factors, other influences that were either not measured or measured inaccurately might impact the findings. Additionally, the unique contexts and structures of the health services involved make it hard to apply these results to other health systems. The use of self-reported data for some health indicators may also lead to biased responses, which could affect the reliability of the measurements. Lastly, even though the results were statistically significant, this does not automatically mean they have clinical meaning. Further studies are required to fully determine how these results actually play out in regular healthcare environments [29]-[31].

Limitations of the study: This study has certain limitations. First, being a cross-sectional study, it was not possible to determine time-related or cause-and-effect relationships. Second, since the questionnaire focused more on participants' subjective understanding, there could be differences in how individuals understand the questions. Despite these limitations, our study's strengths lie in its large sample size and control for a broad range of factors.

5. CONCLUSION

The reassignment of sub-district health-promoting hospitals to provincial administrative organizations has led to significant changes in the way healthcare services are provided and the results they produce. Our study found that hospitals that fully transferred (100%) saw a significant and unexpected drop in service quality across many areas. These changes reflect the extent to which administrative changes can affect healthcare and highlight the importance of carefully assessing the policies and practices involved in such transfers. The findings suggest notable changes in the quality of services provided and reflect the consequences of sub-district health-promoting hospitals being handed over to provincial administrative bodies.

The observed changes suggest that these organizations must improve their planning and resource management to support health services. It is important to have strong policy management and clear service standards to guide protocol and improve service delivery. Moreover, ongoing training for nurses and other health workers is needed to close gaps in service and improve the quality of care. More involvement from the community and transparency about the health services offered can help ensure that services meet local needs and expectations. The intricate changes observed in this study indicate a need for further investigation into the long-term impacts of hospital transfers on the standard of care provided and patient outcomes. Comparative studies at different levels of transfers could also provide important information. It is important to understand how these changes influence the quality of services and the effectiveness of operations. Additionally, research on the experiences and views of both people providing and receiving services and the circumstances prior to and following transfers can offer more insight into the challenges and opportunities associated with these policy adjustments.

In summary, the goal of transferring health service management to provincial administrative authorities is typically to improve efficiency and raise the standard of service provision. However, the reality can be very different, depending on many factors like the protocols, culture, and logistics involved. To improve health outcomes in the community, it is important to make informed policy choices, employ strategic management, and keep stakeholders involved. This study provides a starting point for policymakers and administrators to rethink and improve how health service management transfers are handled to ensure that the benefits outweigh any possible problems.

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