# ASSOCIATION BETWEEN PERSONAL FACTORS AND KNOWLEDGE OF THE SANGAHAVATTHU 4 AMONG SERVICE RECIPIENTS AT THREE SUBDISTRICT HEALTH PROMOTING HOSPITALS IN BANG KRUAI DISTRICT, NONTHABURI PROVINCE

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## Abstract

The rapid societal changes caused by global warming, urbanisation, income disparity, and health challenges have emphasised the importance of equitable and compassionate healthcare services. This study examined the relationship between personal factors and knowledge of the Sangahavatthu 4—Buddhist social virtues promoting generosity (Dana), kind speech (Piyavaca), beneficial action (Atthacariya), and equity (Samanattata)—among 421 service recipients at 3 Subdistrict Health Promoting Hospitals (SHPHs) in Bang Kruai District, Nonthaburi Province, Thailand. A quantitative research design with stratified random sampling was employed, using a validated questionnaire (IOC = 0.79) to assess demographic factors and knowledge levels. Descriptive statistics and correlational analysis revealed that most participants had fair knowledge of the Sangahavatthu 4 (56.8%), while income and frequency of healthcare health service visit were significantly associated with higher knowledge levels ($p < 0.05$). Education level showed no statistical correlation with knowledge, suggesting that religious moral principles are accessible across educational backgrounds. The study highlights the need to integrate Sangahavatthu 4 into health promotion, enhance communication strategies for older adults, foster compassionate service delivery through staff capacity building, and strengthen community engagement through religious partnerships. These findings can inform policy and practice to create more humane and culturally sensitive healthcare systems, especially amid ongoing organisational reforms.

**Keywords:** Knowledge, Saṅgahavatthu 4, Subdistrict Health Promoting Hospital

## Introduction

At present, the world is experiencing numerous changes arising from various circumstances such as global warming, climate change, population growth, housing, community sanitation, income disparities, and health issues (Urait, 2019). According to the Constitution of the Kingdom of Thailand, B.E. 2560 (2017), citizens have the right to receive public health services. The duties of the state and the reform of the health insurance system are specified in Chapter 5 on State Duties, Section 55, which mandates that the state must ensure that the population has access to efficient and comprehensive public health services. The state is also responsible for enhancing public knowledge on health promotion and disease prevention, with continuous improvement in the quality and standards of health promotion, disease prevention, and control services (National Health System Reform Plan, 2018).

This aligns with the National Health Security Act, B.E. 2545 (2002) and the National Health Act, B.E. 2550 (2007), which refer to public health services in Section 3, stating that public health services encompass medical and health services provided directly to individuals. These services aim to promote health, prevent disease, diagnose illnesses, provide treatment, and rehabilitate individuals to maintain health and quality of life. Furthermore, Section 8 stipulates that in providing public health services, healthcare personnel must adequately and thoroughly inform service recipients about relevant health information to support informed decision-making regarding the use of services. This reflects the virtues of generosity, kind speech, beneficial action, and equality.

The Sangahavatthu 4 are principles that help harmonise communities, enabling people to live together happily and resolve social conflicts. These consist of four virtues (Houston & Cartwright, 2007; Phramaha Tharit, 2018) that is,

1. Dana or Virtues of Generosity: The quality of being kind, giving, and sharing with others sincerely from the heart.
2. Piyavaca or Kind Speech: Speaking politely, gently, and with kindness.
3. Atthacariya or Beneficial Action: Performing helpful deeds, offering assistance and support to one another.
4. Samanattata or Equity: Conducting oneself appropriately according to one's role, duties, and social standing.

Knowledge, a multifaceted and intricately woven concept, serves as the bedrock of human comprehension and the catalyst for societal advancement, representing the culmination of acquired information through diverse modalities such as experience, education, and introspective contemplation. It transcends the mere accumulation of data, embodying a profound understanding and cognitive synthesis that empowers individuals to interpret, contextualize, and apply information effectively (Hu & Noor, 2024). Knowledge is not passively received but actively constructed through mental processes, guided by purpose and context (Hruby & Roegiers, 2012). In essence, knowledge embodies a dynamic interplay between information, context, and cognitive processing, empowering individuals to make informed decisions, solve complex problems, and navigate the intricacies of the world with enhanced acumen.

**Research Objectives**

To examine the personal factors and knowledge of the Sangahavatthu 4 principles among service recipients at three Subdistrict Health Promoting Hospitals (SHPHs) in Bang Kruai District, Nonthaburi Province, in order to inform and enhance public health education strategies that promote ethical and compassionate community health practices.

**Scope of Research**

**1. Population Scope**

A total of 133,567 people received services at the 3 SHPH, both during and outside of official working hours.

**2. Variable Scope**

- Independent variable consisted of gender, age, educational level, income, and frequency of visit.
- Dependent variable i.e., knowledge on Sangahavatthu 4

**3. Time Scope**

Data was collected from December 2024 to March 2025 (4 months).

## Research Methodology

This study employed a quantitative research design to examine personal factors in which to associate knowledge of Sangahavatthu 4. The sample size was expected to be at least 400 cases (n=400) and was calculated by applying Taro Yamane formula (Yamane, 1973). Stratified random sampling was used following the method of Elfil and Negida (2017) (Elfil & Negida, 2017). In this approach, the population was divided into distinct strata before selecting samples from each sub-stratum. This method helps to minimise bias in sample selection and ensures that the sampling follows the principles of probability, which allows the findings to be generalisable to the entire population.

First, 12 SHPHs were divided into three groups based on service utilisation rates (visits per person per year), sorted from lowest to highest. One SHPH was selected from each group, prioritising those that granted permission for field access i.e., 1) Wat Hu Chang SHPH (low utilisation), 2) Bang Sithong SHPH (medium utilisation), and 3) Bang Khun Kong SHPH (high utilisation).

Second, within each selected SHPH, 160 service users were sampled (non-proportionally), resulting in a total sample size of 480 participants. This second stage aimed to select participants with the most similar characteristics within each subgroup.

The research team applied a questionnaire as a tool for collecting data from individuals utilising at each SHPH. The questionnaire was divided into two parts: Part 1 personal information, including gender, age, educational level, monthly income, and frequency of healthcare service visits. Part 2 focused on knowledge on Sangahavatthu 4.

To ensure the quality of the data collection tool, the research team assessed its content validity. A draft of the questionnaire was developed and reviewed through a meeting to verify the comprehensiveness of the content and to make necessary adjustments to align with the objectives of the study. The questionnaire was then evaluated by three experts, who rated each question for its relevance to the study objectives following the method of Rovinelli and Hambleton (Rovinelli & Hambleton, 1977). The Index of Item-Objective Congruence (IOC) was calculated to be 0.79. A consensus meeting was subsequently held to finalise the questionnaire.

1. **Research Steps**

1.1 Plan data collection by categorising the SHPH into 3 groups based on the number of service recipients: high, medium, and low.

1.2 Informally coordinate with SHPH staff to inquire about the procedures, regulations, and methods for data collection, as each facility may have different processes.

1.3 Submit an official request to access the area for data collection.

1.4 Conduct data collection by explaining objectives and ensuring the protection of volunteers' rights.

1.5 Once volunteers give consent to participate, distribute the questionnaires for self-administration. If any volunteer is unable to complete the questionnaire independently, the researcher will read the questions aloud to them.

2. **Data Collection**

Data was collected by questionnaire among 480 cases (n=160, each SHPH).

3. **Data Analysis**

Descriptive statistics were used to identify the association between Personal Factors and Knowledge of the Sangahavatthu 4. Graphs and tables were generated to visualise the findings. The knowledge scores were set into 4 levels as shown in Table 1.

Table 1 Criteria for Classifying Levels of Knowledge on the 4 Sangahavatthu

| Level | Knowledge on the 4 Sangahavatthu Score (based on 10 questions, 1 point per question) | Meaning |
|---|---|---|
| Excellent | 80.0% - 100.0% (8.0-10.0 points) | Has accurate and comprehensive knowledge and understanding of Sangahavatthu 4, with the ability to apply the concepts effectively. |
| Good | 60.0% - 79.9% (6.0-7.9 points) | Has good knowledge and understanding of Sangahavatthu 4; answers most questions correctly. |
| Fair | Below 60.0% (below 6.0 points) | Has moderate knowledge; some misunderstanding or incorrect answers. |

## Research Results

### General characteristics

The sample group receiving health services at the 3 SHPH, namely Bang Khun Kong SHPH, Wat Hu Chang SHPH, and Bang Si Thong SHPH, who provided complete information for all variables, totaled 421 participants. However, concerning the frequency of service utilisation, most participants were unsure and therefore only 207 responses were obtained from the total sample of 480 participants.

The distribution of participants was as follows: Bang Khun Kong SHPH: 132 participants (31.4%) Wat Hu Chang SHPH: 150 participants (35.6%) and Bang Si Thong SHPH: 139 participants (33.0%).

Regarding the overall characteristics of the sample group: The majority were female (280 participants, 66.5%). Most were aged between 60-69 years (122 participants, 29.0%). The highest educational level was primary school or equivalent (140 participants, 33.3%). Most had a monthly income of less than 15,000 Baht (250 participants, 59.4%). The majority accessed services no more than 5 times per month (166 participants, 39.4%).

### Knowledge of Sangahavatthu 4

The knowledge questionnaire on Sangahavatthu 4 consists of a total of 10 questions, which include: Dāna (Generosity): 2 questions (K1–K2), Piyavācā (Kind Speech): 3 questions (K3–K5), Atthacariyā (Helpful Conduct): 1 question (K6), and Samanattatā (Equality): 2 questions (K7–K8), and Overall knowledge of the Four Social Virtues: 2 questions (K9–K10)

For the Overall knowledge of Sangahavatthu 4: 2 questions (K9–K10), when analysing the number of respondents who correctly answered each question on the knowledge of Sangahavatthu 4 (Table 2), it was found that the question with the lowest correct response rate was K2: “Atthacariya means promoting morality and generosity”. The correct answer is that Dāna (generosity) is the act of promoting morality and generosity. Only 124 respondents answered this question correctly, accounting for 29.5%.

On the other hand, the question with the highest correct response rate was K4: “Explaining and advising beneficial things with reason and evidence, persuading in a good

way, is Piyavaca". The correct answer is Yes. A total of 334 respondents answered this question correctly, representing 79.3%.

Table 2 Number and percentage of respondents who correctly answered Sangahavatthu 4 knowledge (n=421)

| | Questions | n | % |
|---|---|---|---|
| **Dana** | K1. Generosity (Dana) refers to the act of giving, sharing, being generous, and making sacrifices without expecting anything in return (or with no expectation of reciprocation). | 220 | 52.3 |
| | K2. Atthacariya is the promotion of virtue and generosity (giving). | 124 | 29.5 |
| **Piyavaca** | K3. Polite speech and friendly service is considered giving (Piyavaca). | 308 | 73.2 |
| | K4. Explaining and advising beneficial things with reason and evidence, persuading in a good way, is Piyavaca. | 334 | 79.3 |
| | K5. Encouraging patients is Piyavaca. | 187 | 44.4 |
| **Atthacariya** | K6. Helping with physical and mental effort, assisting community affairs, solving problems is Atthacariya. | 306 | 72.7 |
| **Samanattata** | K7. Maintaining consistent behavior is the principle of Samanattata. | 241 | 57.2 |
| | K8. Merely being aware of a problem is not a part of Samanattata. | 297 | 70.5 |
| **Overall** | K9. The term "Sangaha" means assistance or support. | 185 | 43.9 |
| | K10. Sangahavatthu 4 and and the Four Principles of Morality are the same. | 177 | 42.0 |

When analysing the total knowledge scores by sample characteristics, it was found that overall, most respondents demonstrated a fair level of knowledge on Sangahavatthu 4, with 239 participants (56.8%) scoring below 6 out of 10. The next highest group showed a good level of knowledge, with 142 participants (33.7%) scoring between 6.0–7.9 points, while the excellent level included 40 participants (9.5%) who scored between 8.0–10.0 points.

When considering gender differences, it was found that females had a higher percentage of excellent knowledge compared to males (10.4% vs. 7.8%). However, at the good and fair levels, males outperformed females slightly (Good level: females 33.2%, males 34.8%; Fair level: females 56.4%, males 57.4%).

In terms of age, the highest percentage of excellent knowledge was found in the 50–59 age group (17.5%), followed by the 60–69 age group (11.5%).

For education level, those with lower secondary education (Grade 9 or equivalent) had the highest proportion of excellent knowledge (10.8%), followed closely by those with upper secondary education or vocational certificate (10.3%).

Regarding income, participants earning 45,000–54,999 baht and 65,000–74,999 baht showed the highest levels of excellent knowledge (33.3%). Additionally, those who accessed services 6–15 times per month also exhibited very good knowledge at 20.0%.

When examining the relationship between independent variables (gender, age group, education level, income, and frequency of service utilisation) and the dependent variable (overall knowledge of Sangahavatthu 4 (N = 421)), it was found that income (r = 0.1, p = 0.0)

and frequency of service utilisation (r = -0.2, p = 0.0) had statistically significant correlations with the knowledge scores of Sangahavatthu 4 (Table 3).

Table 3 Relationship between personal factors and knowledge of Sangahavatthu 4 among Service Recipients

(N = 421, 207) * statistically significant at p < 0.05 or p < 0.01.

| | | Gender | Age | Education | Income | Frequency of health service visit |
|---|---|---|---|---|---|---|
| **Knowledge of Sangahavatthu 4** | **r** | 0.0 | 0.1 | 0.0 | 0.1 | -0.2 |
| | **p** | 0.4 | 0.1 | 0.4 | **0.0*** | **0.0*** |
| | **N** | 421 | 421 | 421 | 421 | 207 |

**Discussion**

- **Education level has no statistical relationship with knowledge of Sangahavatthu 4**

From the analysis of the relationship between independent variables (gender, age group, education level, income, frequency of health service visits) and the dependent variable, which is knowledge of Sangahavatthu 4, it was found that education level has no statistical relationship with knowledge of Sangahavatthu 4 (N=421, r=0.0, p=0.4). This is because Sangahavatthu 4 are religious moral principles that most people consider specialised knowledge, and Buddhist teachings are not mandatory in the formal education curriculum. Therefore, regardless of educational attainment, those interested can learn about these virtues equally. This finding is not in line with other study among secondary school students (Mathayom Suksa) in Bangkok (Chonthicha Pimmanakit, 2008) which reported the significant differences of Sangahavatthu 4 virtue among those of Mathayom Suksa 1, Mathayom Suksa 2, and Mathayom Suksa 3 students at .01 level. This indicates that the students' practice of the Sangahavatthu 4 virtues develops differently across grade levels depending on classroom activities, adaptation, peer relationships, teaching styles of teachers, and family upbringing.

- **Income and frequency of visits showed significant relationship with knowledge of Sangahavatthu 4**

When examining the relationships between the independent variables and other dependent variables, income (N=421, r=0.1, p=0.0) and frequency of health service visits (N=421, r= -0.2, p=0.0) showed statistically significant relationships with knowledge of Sangahavatthu 4. The sample groups with incomes of 45,000–54,999 baht and 65,000–74,999 baht demonstrated an excellent knowledge (33.3%). Additionally, respondents who used services 6–15 times per month showed an excellent knowledge (20.0%). This may be because most of these respondents are older adults with higher incomes who frequently use the services. These health centers (SHPHs) are often located near temples or meditation centers, allowing these respondents more opportunities than younger, lower-income groups to be exposed to Buddhist teachings and absorb these moral principles. This reinforces the notion that being close to religious centers fosters greater spiritual and moral involvement, which can strengthen one's understanding of the Sangahavatthu 4 principles (Sasiwongsaroj et al., 2015).

- **Limitations**

In this study, most service recipients were middle-aged to elderly, which caused barriers such as difficulty reading small print or understanding the principles of Sangahavatthu 4. As a result, some participants did not complete all questions. Therefore, only 421

respondents who answered all questions were selected out of the total 480, accounting for 87.7%, which still exceeded the required sample size of 399.

The Sangahavatthu 4 are ethical principles embedded in daily life. However, their application within the public service system remains limited due to heavy workloads. This creates gaps in areas such as generosity (dāna), polite speech (piyavāca), and helpful actions (atthacariya), where service recipients may feel they have not received adequate care.

Currently, the SHPHs have been transferred to provincial administrative organisations (PAOs) during this transitional period. Consequently, some primary care service standards may not meet criteria because inter-ministry work and coordination must follow government regulations, causing delays in service delivery.

Therefore, further research on investigating how the consistent application of Sangahavatthu 4 affects patient satisfaction in primary care settings, would help identify whether ethical communication and compassionate service delivery directly enhance the patient experience. These research directions would not only fill current knowledge gaps but also support the development of more ethical, person-centered public health services, including increase recipients' satisfaction toward health services in Thailand.

**Recommendations**

This research provides practical insights that can inform actionable health policy recommendations at both the regional and national levels in Thailand. The following strategies are suggested:

1. **Incorporate Sangahavatthu 4 into National Health Promotion Frameworks.**

The Ministry of Public Health (MoPH) should institutionalise Sangahavatthu 4 comprising *Dana* (Generosity), *Piyavaca* (Kind Speech), *Atthacariya* (Helpful Action), and *Samanattata* (Equity) as part of the official framework for health promotion and primary care service delivery, particularly in Subdistrict Health Promoting Hospitals (SHPHs) (Chintana Techamontrikul, et al., 2024). This can be implemented through national training curricula, health education campaigns, and service quality indicators.

2. **Design National Guidelines for Elderly-Centered Health Communication.**

Develop and disseminate age-appropriate communication standards for use across SHPHs nationwide. These should guide the creation of clear, visually accessible materials (e.g., large print, pictorial cues) to improve health literacy and ethical understanding among Thailand's aging population.

3. **Standardise Compassion-Focused Training for Health Personnel.**

Launch a national capacity-building initiative for healthcare providers, especially in primary care centered on Sangahavatthu 4 principles (Chintana Techamontrikul, et al., 2024). This training would aim to humanise healthcare interactions, reduce patient dissatisfaction, and address service quality gaps in a culturally grounded manner.

4. **Strengthen Intersectoral Collaboration with Religious Institutions.**

Form regional partnerships between health agencies and Buddhist institutions to co-host community-based programs. By aligning public health goals with local spiritual frameworks, authorities can effectively promote moral well-being and increase engagement in underserved areas.

5. **Policy Alignment During Administrative Transition to Provincial Administrative Organisation (PAOs).**

As SHPHs shift to PAOs control, policy harmonisation is needed to ensure continuity in ethical and quality care. National-level policy should mandate integration of

Sangahavatthu 4 values into PAO governance frameworks, ensuring a value-driven, people-centered health system during and after decentralisation.

These recommendations translate cultural values into practical public health tools, helping bridge systemic gaps and making Thailand's healthcare delivery more equitable, compassionate, and responsive to community needs.

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