

การศึกษาระดับและปัจจัยที่สัมพันธ์กับความเชื่อมั่นในการทำเวชปฏิบัติทางการแพทย์แผนไทยประยุกต์ของผู้ที่สำเร็จการศึกษาหลักสูตรการแพทย์แผนไทยประยุกต์บัณฑิต

บทคัดย่อ

วัตถุประสงค์: เพื่อศึกษาระดับและปัจจัยที่สัมพันธ์กับความเชื่อมั่นในความสามารถแห่งตนในการทำเวชปฏิบัติการแพทย์แผนไทยประยุกต์ **วิธีการศึกษา:** การศึกษาเชิงพรรณนามีกกลุ่มตัวอย่างคือ แพทย์แผนไทยประยุกต์ที่สำเร็จการศึกษาในปีการศึกษา 2552 – 2555 จำนวน 560 คน รับการประเมินโดยใช้แบบสอบถามลักษณะทางประชากรศาสตร์และความเชื่อมั่นในความสามารถแห่งตนในการปฏิบัติการทางเวชปฏิบัติด้านการแพทย์แผนไทย และปัจจัยที่สัมพันธ์กับความเชื่อมั่นในความสามารถแห่งตนในการปฏิบัติการทางเวชปฏิบัติด้านการแพทย์แผนไทย วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนา ทดสอบความแตกต่างระหว่างค่าเฉลี่ยของความเชื่อมั่น และวิเคราะห์ด้วยค่าสัมประสิทธิ์สหสัมพันธ์ของเพียร์สัน **ผลการศึกษา:** การวิเคราะห์ของปัจจัยความเชื่อมั่นในความสามารถแห่งตนในการปฏิบัติทางเวชปฏิบัติการแพทย์แผนไทยแยกตามสาขา พบว่าด้านเวชกรรมแผนไทย หัตถเวชกรรมแผนไทย และ ผดุงครรภ์แผนไทย มีปัจจัยที่ทำให้เกิดความเชื่อมั่นสูงสุดมาจาก การลงมือปฏิบัติทางเวชปฏิบัติด้วยตนเอง รองลงมาคือการเห็นตัวแบบ โดยคิดเป็นมากกว่าร้อยละ 90 ทั้งสองปัจจัย ระดับความยากของการปฏิบัติทางเวชปฏิบัติการแพทย์แผนไทย พบว่ามีค่าเฉลี่ยเท่ากับ 104.22 ± 37.28 คะแนน ผลการวิเคราะห์ความสัมพันธ์ระหว่างความเชื่อมั่นในความสามารถแห่งตนในการปฏิบัติทางเวชปฏิบัติการแพทย์แผนไทยโดยรวม กับระยะเวลาจากสำเร็จการศึกษาถึงเริ่มทำงาน ระยะเวลาที่ทำงานในปัจจุบัน และจำนวนแห่งที่ทำงาน พบว่าโดยรวมแล้วมีความสัมพันธ์กันในระดับที่ต่ำอย่างไม่มีนัยสำคัญทางสถิติ ($p > 0.05$) ผลวิเคราะห์เปรียบเทียบค่าเฉลี่ยความเชื่อมั่นในความสามารถแห่งตน พบว่าทุกด้านมีคะแนนเฉลี่ยความเชื่อมั่นในความสามารถแห่งตน ของกลุ่มตัวอย่างที่ไม่เลือกวิชาเลือกนั้น มีคะแนนสูงกว่าคนที่เลือก อย่างมีนัยสำคัญทางสถิติ ในด้านเวชกรรมแผนไทย หัตถเวชกรรมแผนไทย เกษตรกรรมแผนไทย และผดุงครรภ์แผนไทย ($p=0.04, 0.001, <0.001, 0.001$ ตามลำดับ) **สรุป:** ผลการศึกษาครั้งนี้ยืนยันให้เห็นว่าในการจัดการเรียนการสอน หรือการอบรมเพื่อเพิ่มพูนความรู้ทักษะ และความมั่นใจทางการแพทย์แผนไทยประยุกต์ ต้องให้ผู้เรียนได้ลงมือปฏิบัติด้วยตนเอง รวมทั้งการใช้ตัวแบบ และการใช้คำพูดจูงใจให้เกิดความเชื่อมั่นในความสามารถแห่งตน

คำสำคัญ : ความเชื่อมั่นในความสามารถแห่งตน ; แพทย์แผนไทยประยุกต์ ; การศึกษา; เวชปฏิบัติ

Self-efficacy and Its Influencing Factors in the Practice of Applied Thai Traditional Medicine Among the Graduates of the Applied Thai Traditional Medicine Program

Abstract

Objective: This study explored factors associated with self-efficacy in the practice of Applied Thai Traditional Medicine (ATTM). **Methods:** This descriptive analysis involved 560 graduates from the years 2009 to 2012. Data collection was carried out using questionnaires that assessed self-efficacy, which included sections on general information, a self-efficacy scale, and factors related to self-efficacy. Statistical analyses performed on the collected data included descriptive statistics, T-tests, and Pearson correlation to examine the relationships and differences within the data. **Results:** The analysis revealed that self-efficacy in Thai traditional Medicine (TM), Thai traditional Massage (Tmas), and Thai traditional Midwifery (Tmid) was highly influenced by vicarious experience and mastery experience, with both factors exceeding 90%. The practical difficulty had a mean score of 104.22 ± 37.28 . There was no statistically significant correlation between self-efficacy in ATTM practice and the duration for applying job since graduation, the duration of current job, or number of workplace experiences ($p > 0.05$). The comparison of mean self-efficacy scores between participants who chose the major subject and those who did not revealed that participants who did not choose any major subjects had significantly higher scores in Thai traditional

Medicine (TM), Thai traditional Massage (Tmas), Thai traditional Pharmacy (TP), and Thai traditional Midwifery (Tmid), with p-values of 0.04, 0.001, <0.001, and 0.001 respectively.

Conclusion: The findings confirm that academic courses or training programs aimed at improving knowledge, skills, and self-efficacy in Applied Thai Traditional Medicine should provide opportunities for practical, hands-on learning, as well as vicarious experiences and verbal persuasion.

Keywords: Self - efficacy ; Applied Thai traditional medicine; Education; Clinical practice

Introduction

Thai Traditional Medicine (TTM) is a comprehensive system of healthcare rooted in the accumulated wisdom of Thai ancestors, holding an enduring role in patient care and healthcare practices today. The field of Applied Thai Traditional Medicine (ATTM) integrates scientific knowledge with traditional insights, encompassing medical history taking, physical examination, diagnosis, treatment, prevention, and health promotion. TTM is organized into four major disciplines namely Thai Traditional Medicine (TM) focusing on holistic care through elemental theories and diagnostics with various components as follows. Thai Traditional Massage (Tmas) uses therapeutic techniques to balance energy and alleviate ailments. Thai Traditional Pharmacy (TP) involves herbal medicines for treatment and prevention. Thai Traditional Midwifery (Tmid) includes practices for maternal and reproductive health. Together, these components form a robust, culturally rich approach to health that continues to adapt and serve patients in modern healthcare settings.¹ Nowadays, many educational institutions provide the ATTM program. After graduation, ATTM practitioners must obtain a license to ensure professional standards and possess the required skills. These skills include herbal compounding, herbal dispensing, hot herbal compress application, hot herbal steaming, and providing advice on illness and stretching exercises.^{3,4}

Self-efficacy, defined as an individual's belief in their capacity to achieve specific goals, is a critical factor in ATTM practice, as it directly impacts performance outcomes. While ATTM students acquire essential competencies and skills in academic settings, the real-life challenges encountered in clinical environments are often far more complex. New graduates frequently experience low self-efficacy, leading to stress, anxiety,

and a diminished sense of self-assurance. This can impact their professional relationships by reducing trust and support from colleagues.

According to Bandura's self-efficacy theory, personal efficacy is shaped by four key factors namely 1) mastery experience where successful task completion reinforces capability, 2) vicarious experience where observing role models builds confidence, 3) verbal persuasion where positive encouragement enhances belief in task performance, and 4) physiological and affective states where emotional responses influence self-perceptions of competency.⁵ A previous study assessing clinical self-efficacy in nursing students through Bandura's theory found that senior students exhibited low self-efficacy in areas such as communication, assessment, reporting, and medical history-taking skills. This quantitative insight underscores the need for curriculum strategies that target and strengthen student confidence and competence in these essential skills.⁶

Currently, there is a lack of research on the self-efficacy of ATTM practitioners, particularly regarding their confidence in performing clinical practices. Understanding the self-efficacy of ATTM practitioners is essential to support their professional performance. This study aimed to identify factors that contribute to ATTM practitioners' self-efficacy and to determine their self-efficacy levels in clinical practice. The findings are expected to inform curriculum development, enhancing ATTM education to better meet professional standards across institutions. Additionally, this research may inform training programs designed to improve the knowledge and skills of ATTM graduates within the healthcare system, ultimately contributing to the quality of TTM and public health services. The results could ensure a highly effective ATTM workforce, better equipped to provide quality patient care within Thailand's healthcare system. Specifically, we aimed to determine the factors associated with self-efficacy in the practice of ATTM across major disciplines, i.e., Thai Medicine (TM), Thai Pharmacy (TP), Thai Massage (Tmas), and Thai Midwifery (Tmid), and to assess ATTM practitioners' self-efficacy levels and the practical challenges they encounter in clinical practice.

Methodology

In this descriptive survey research, the **study population = sample** was 560 ATTM graduates with the data collected from 2009 to 2012. To be eligible, they had to have a Bachelor of Applied Thai Traditional Medicine Program (B.ATM.) between academic years B.E. 2552 and B.E. 2555, have an ATTM license.

The study was approved by the committee for research ethics, faculty of social sciences and humanities, Mahidol University, Nakhon Pathom,

Thailand (approval number: 2013/250.0209). The participants were informed about the objectives, process, and voluntary and anonymity nature of the study. Individuals could deny participation and participants could withdraw from participation at any time with no negative consequences.

Research questionnaire

Data collection was conducted using self-administered questionnaires specifically developed for this study. The questionnaire consisted of four parts, as follows. The first part collected demographic characteristics age, sex, birthplace, occupation, income, marital status, educational and work experience. Specific items included grade point average (GPA), ATTM major during training, time taken to secure employment post-graduation, duration of current employment, field(s) of current practice, number of workplaces, workplace location, field(s) of current clinical practice, and additional learning or training experiences. Both open-ended and closed-ended questions were included.

The second part was the self-efficacy scale for ATTM practice which was designed specifically for B.ATM graduates. Participants rated their self-efficacy in each of the four major subjects including 12 questions for Thai Medicine (TM), 14 for Thai Pharmacy (TP), 12 for Thai Massage (Tmas), and 12 for Thai Midwifery (Tmid) (a total of 50 questions). Response format was a 10-point rating scale ranging from 1-the lowest level of self-efficacy to 10- the highest one. In addition, each of the four components of self-efficacy (i.e., mastery experience, vicarious experience, verbal persuasion, and physiological and affective states) was also rated in a similar fashion.

In the third part, the practical difficulty scale for ATTM practice included 50 questions mirroring those in part 2 allowing participants to rate the level of difficulty they experienced in practice. Each question used a 10-point rating scale ranging from 1-the lowest level of practical difficulty to 10-the highest one.

Part 4 contained questions to assess factors influencing self-efficacy within each major subject. Participants responded to 110 multiple-choice questions about practical skills. If a factor was perceived as having no impact on self-efficacy, participants selected "No." If a factor was perceived as having an impact, participants selected "Yes."

Section 4.1 Practical skills in TMed included taking medical history, examination, diagnosis, treatment orders, referral orders, and providing illness-related advice.

Section 4.2 Practical skills in TPharm included drug preparation, single herb production, herbal formula production, single herb compounding,

herbal formula compounding, dispensing practices, and advising on herbal medicines and decoctions.

Section 4.3 Practical skills in Tmas included taking medical history, examination, basic massage techniques, therapeutic massage, hot herbal compress application, and providing advice on illness and exercises.

Section 4.4 Practical skills in Tmid included hot salt pot compression, herbal scrub and paste application, hot herbal steaming, cloth abdominal support, hot charcoal seat use, and postpartum care advice.

This comprehensive questionnaire was designed to capture the multifaceted aspects of self-efficacy and practical challenges faced by ATTM practitioners.

Questionnaire quality assurance

These questionnaires were validated by three experts specifically one in psychology, one in medical social science, and one with expertise in ATTM curriculum structure. Revision was made according to the experts' recommendations. The questionnaire was tested for internal consistency reliability in 50 graduate individuals with characteristics comparable to the participants. The internal consistency reliability was found to be high for self-efficacy and practical difficulty scale (Cronbach's alpha coefficients of 0.942 and 0.976, respectively).

Data analysis

Descriptive statistics including mean with standard deviation (SD), range, and frequency with percentage were used to summarize demographic characteristics and study variables. To test associations between dependent variables (i.e., the strength of self-efficacy itself, and 2) the magnitude of practical difficulty) and categorical independent variables, independent t test or one-way ANOVA was used as appropriate. For continuous independent variables, Pearson's Correlation coefficient analysis was used. Significance level was set at a type I error of 5% (i.e., P-value < 0.05). All statistical analyses were performed using the software program SPSS version 20.

Results

Among the 560 ATTM practitioners who graduated with a B.ATM. degree from various institutions licensed by the Thai Traditional Medical Council, most participants were female (74.46%) (Table 1). They had an average age of 26.52 ± 4.2 years old. The majority (88.21%) were employed in fields related to ATTM, primarily practicing in Thai Medicine (TM) and Thai Massage (Tmas), while 52.63% engaged in all areas of

ATTM practice. Participants had a relatively high academic performance, with a mean cumulative GPA of 3.21 ± 0.33 , and 77.48% with a GPA above 3.00 (Table 1).

Table 1 Demographic data and characteristics of participants (N = 560).

Characteristics	N	%
Gender		
Female	417	74.46
Male	141	25.18
n/a	2	0.36
Age (years)		
22 - 24	276	49.29
25 - 39	272	48.57
> 40 years	12	2.14
Mean (S.D.) = 26.52 (4.2), Min = 22, Max = 51.		
Occupations		
Government	150	26.79
Private company	311	55.53
Business	77	13.75
Freelance/students	22	3.93
Occupation related to ATM		
Yes	494	88.21
No	9	1.61
n/a	57	10.18
Fields of current clinical practice		
Thai traditional medicine (TM)	407	82.39
Thai traditional massage (Tmas)	443	89.68
Thai traditional pharmacy (TP)	392	79.35
Thai traditional midwifery (Tmid)	291	58.91
Practice in all field	260	52.63
Grade point average (n = 555)		
< 2.50	12	2.16
2.51 - 2.99	113	20.36
3.00 - 3.24	172	30.99
3.25 - 3.49	138	24.87
> 3.50	120	21.62
Mean (S.D.) = 3.21 (0.33), Min = 2.00, Max = 3.96.		

An analysis of self-efficacy factors in ATTM practice among participants (Table 2) indicated that mastery experience and vicarious experience were most prominent in Thai Medicine (TM), followed by Thai Massage (Tmas). Verbal persuasion was highest in TM and Thai Midwifery (Tmid), while for physiological and affective states, Tmid ranked the highest, followed by Tmas. In examining self-efficacy factors across each major discipline, hands-on practice emerged as the highest self-efficacy factor in TM, Tmas, and Tmid, followed closely by vicarious experience, both reported by over 90% of participants. In Thai Pharmacy (TP), the leading self-efficacy factor was vicarious experience (80.71%), followed by physiological and affective states (79.29%).

The analysis of self-efficacy in ATTM practice, based on measurements of practical difficulty and self-efficacy, showed that the average level of practical difficulty was 104.22 ± 37.28 points, indicating that most participants rated practical difficulty as relatively low. When examining each major subject,

participants rated Thai Medicine (TMed) as the most challenging, with an average score of 4.89 ± 2.17 points, followed by Thai Pharmacy (TPharm) with an average score of 4.67 ± 2.18 points, as shown in Table 2. Regarding self-efficacy in ATTM practice, participants' average self-efficacy score was 171.91 ± 45.24 points, suggesting that most participants rated their self-efficacy in ATTM practice as moderately high, with scores exceeding half of the total possible (more than 125 points). Among the subjects, self-efficacy was highest in Thai Massage (Tmas), with an average score of 7.53 ± 2.41 points, followed by Thai Midwifery (Tmid) with an average score of 6.87 ± 2.30 points. TMed and TPharm had equal average self-efficacy scores of 6.55 ± 2.10 and 6.55 ± 2.21 points, respectively, as shown in Table 2.

The average self-efficacy scores for each major subject (Table 3) were as follows: For TM practice, which included medical history-taking, physical examination, diagnosis, treatment ordering, patient referral, and providing advice on illness, the average score ranged from 6.16 to 6.94 points. The highest self-efficacy was in providing advice on illness-related self-care. For Tmas practice, which included medical history-taking, physical examination basic massage performance, treatment massage, hot compression, and providing advice on illness-specific treatments and exercises, the average score ranged from 7.35 to 7.79 points, with the highest self-efficacy was in hot compression. For TP practice, which included herbal medicine preparation, production, compounding, dispensing, and providing advice on herbal medicine intake and decoction preparation, the average score ranged from 6.17 to 7.09 points, with the highest self-efficacy was in providing advice on herbal medicine intake and decoction preparation. For Tmid practice, which included hot salt pot compression, herbal scrub and paste, hot herbal streaming, cloth abdominal support, hot charcoal seating, providing advice for postpartum care, the average score ranged from 6.51 to 7.21 points, with the highest self-efficacy was in hot herbal steaming and providing advice for postpartum care.

The analysis of the relationship between overall self-efficacy in ATTM practice and factors including GPA, duration for applying job, duration of current job, and number of workplaces (Table 4) showed that overall correlations were low and not statistically significant ($p > 0.05$). However, when analyzing self-efficacy in each major subject, a low positive correlation was found between the duration for applying job and self-efficacy in TP, which was statistically significant ($r = 0.089$, $p\text{-value} = 0.045$). Similarly, the number of workplaces was found to have a low positive correlation with self-efficacy in TM, which was also statistically significant ($r = 0.084$, $p\text{-value} = 0.048$).

Comparison analysis of mean self-efficacy scores among participants in different majors of ATTM during curriculum and fields of current practice had different self-efficacy scores compared to those who did not choose majors. It was found that in all majors, the group that did not choose majors had higher self-efficacy scores than those who chose majors, with statistically significant differences (Table 5). In TMed, Tmas, TP, and Tmid, the p-values were 0.04, 0.001, <0.001, and 0.001, respectively. Regarding the relationship between the major practice and self-efficacy in each major (Table 5), it was found that the average self-efficacy scores differed significantly only in TPharm (p-value = 0.03). However, when analyzing the relationship between the major practice and self-efficacy in TMed practice across different majors, the results showed that participants working mainly in TMed scored significantly higher in this area compared to those not mainly working in TMed ($p < 0.001$).

Discussion

This study is the first to examine the self-efficacy levels in the practice of ATTM. The primary objective was to investigate factors that contribute to self-efficacy in each major of ATTM practice. The study found that the participants had a moderate level of self-efficacy across all majors, including TM, TP, Tmas, and Tmid. Most of self-efficacy was attributed to hands-on practice in each major through mastery experience and vicarious experience. In Tmas and TM practice, most participants gained self-efficacy levels through hands-on practice, as these fields emphasize skill and expertise through practical experience. In contrast, participants had fewer opportunities to perform hands-on activities in TP and Tmid. Analysis of the practical difficulty in ATTM practice revealed that most participants rated their practice as not practical difficult. However, when analyzing each major individually, TM was rated as more difficult than other areas, followed by TP.

The study on self-efficacy found that the participants exhibited high self-efficacy in their ability to perform ATTM practices, specifically in Tmas⁷. This could be attributed to the course structure, which involves hands-on practice. Instructors demonstrate various massage techniques on different body parts, allowing students to practice directly. Since many ATTM practitioners mainly work in this field, they develop a strong sense of self-efficacy in Tmas practice. This aligns with Bandura's theory⁵ that most human behaviors were learned by observing others, seeing outcomes called "indirect reinforcement", and using cognition to understand, remember, and anticipate that similar actions will lead to rewards or consequences⁵.

Self-efficacy in Thai Medicine (TM) practice was relatively lower compared to the other three major areas. This outcome may be attributed to the fact that most ATTM practitioners are employed in the government sector, particularly in sub-district health promotion hospitals where operational limitations restrict the full implementation of TTM practices. Such constraints often prevent ATTM practitioners from fully applying their expertise in TM and limit their opportunities to utilize this knowledge. Typically, in these healthcare settings, ATTM practitioners have minimal or no direct practice in TM, as patients are initially screened and diagnosed by Western medical practitioners or nurses before being referred to ATTM practitioners.⁸ This lack of opportunities to independently apply their knowledge or perform tasks contributes to lower self-efficacy in TM practice. Without consistent hands-on experience, practitioners may lack the confidence necessary to perform TM practices autonomously.

Self-efficacy in Thai Pharmacy (TP) practice among ATTM practitioners was also relatively low, particularly in formulating traditional herbal medicines. This outcome may stem from the curriculum's theoretical focus, which encompasses a broad array of topics: the Four Principles of Thai traditional pharmacy, herbal medicine use, pharmacopeial formulas, formulation structures, and

the analysis of herbal medicine formulations according to Thai traditional pharmaceutical principles. Additionally, the curriculum covers household herbal medicine, high-potential herbal ingredients, ingredient substitutions, liquid vehicles, herbal medicine preparation methods, and the process of compounding herbal medicines.^{2, 9} ATTM practitioners are required to memorize and identify various herbs used in TTM formulations, a task that can be challenging without adequate hands-on practice. Practical experience may be limited by work environments, such as sub-district hospitals, which often lack facilities for drug production and may not have sufficient raw materials (single herbs), resulting in a reliance on external sources for these materials. Consequently, such limitations can contribute to lower self-efficacy in compounding herbal formulas, as practitioners have fewer opportunities to apply their TP knowledge in practice.

In the field of Tmid, students studied the anatomy and physiology of pregnant women, prenatal care, complications that might affect pregnancy, the mechanisms of childbirth, and basic principles and procedures for normal deliveries. Additionally, the curriculum covers practical skills such as pregnancy diagnosis, prenatal examinations, and attention for mothers from pregnancy through the postpartum period. Students were also trained in assisting with normal deliveries, newborn care, and family planning. Furthermore, the course incorporates TTM approaches to maternal care, both theoretical and practical. These included hot salt pot compression, hot herbal streaming, cloth abdominal support, hot charcoal seating¹⁰. As observed, the ability both Tmas and Tmid depended on the individual's knowledge, skills, and personal aptitude. The more frequently a person practiced or performed these tasks, the more proficient they became. While consistent practice helps to build both competence and self-efficacy in their ability to perform these tasks effectively.

The assessment of the magnitude of practical difficulty in ATTM practice revealed that the ATTM practitioners reported that TM practice was more difficult than other majors, especially tasks such as physical examinations and diagnosis. This might be explained by the fact that, after graduation, many practitioners did not have the opportunity to practice these skills due to limitations in their workplaces, where hands-on experience in these areas is not readily available. This lack of practice correlated with their lower self-efficacy in performing TM practice. According to Bandura's theory of self-efficacy, an individual's self-efficacy in their ability to perform a task was influenced by past experiences. If an individual had tried and either succeeded or failed at performing a task, their self-efficacy would either increase or decrease based on the outcome. In this case, the practitioners' limited opportunities to practice these skills led them to feel less confident in their abilities, which aligns with Bandura's assertion that one's perception of difficulty and self-efficacy in their ability to perform a task is shaped by direct experience and outcomes¹¹.

The relationship between self-efficacy and educational and work experience variables reveals that ATTM practitioners working as freelancers tend to fully utilize their potential in Thai Medicine (TM) practice, handling all aspects independently and with confidence. This self-assurance arises from the responsibility they bear as independent practitioners, motivating them to thoroughly apply their knowledge, which leads to higher self-efficacy in clinical practice compared to government officials or state employees. Many government employees are recent graduates, who may lack confidence in clinical settings and thus experience lower self-efficacy. Additionally, those in government roles, such as at provincial public health departments, often focus on administrative and academic tasks rather than TTM practice. In sub-district health-promoting hospitals and community hospitals, practitioners work within multidisciplinary teams, which can limit their ability to fully engage in TTM practices. Similarly, these facilities often lack the resources and authorization needed for ATTM practitioners to perform at full capacity, including limitations on essential herbs required for treatment. This observation aligns with prior studies showing that the professional identity of TTM practitioners is shaped by both student motivation and instructional methods, with professional interactions with TTM instructors enhancing dedication to the field.¹²

The relationship between majors of ATTM during curriculum and self-efficacy in ATTM practice showed that the overall self-efficacy of participants who chose major in TM and TP differed significantly from those who did not choose these majors. Statistical analysis revealed a significant difference in the average self-efficacy scores between these two groups. Additionally, when analyzing

the relationship between self-efficacy in various majors of ATTM practice and the majors of ATTM during curriculum, it was found that participants who chose major in Tmas and Tmid also showed significant differences in their average self-efficacy scores compared to those who did not select these majors. Notably, participants who did not choose any majors had a higher average self-efficacy score in ATTM practice compared to those who selected majors. This could be explained by the fact that those who took majors gained deeper insight, additional knowledge, and more hands-on experience during their studies, which might have also increased their awareness of the complexities involved, potentially leading to more self-reflection on their abilities. For example, the major in TM, called "Selective Experiences in Thai Medical Therapeutics" involved hands-on training in areas such as medical history-taking, physical examination, diagnosis, comparing diseases between TM and western medicine, and patient referrals. The depth and detail of this major allowed students to gain extensive knowledge, which might lead them to be more cautious and hesitant in practice, thus reducing their self-efficacy compared to those who did not choose this major. In contrast, those who did not select majors learned only fundamentals, which were less complex and detailed. With less exposure to specific practices, they might feel more confident and willing to engage in ATTM practice, resulting in a higher self-efficacy perception. Besides, since the ATTM program is a professional field requiring clinical practice, elective courses were necessary to enhance professional competencies, within a curriculum structure of 86 credits. However, the availability of electives varied across institutions. For instance, Mahidol University offered electives in all four major subjects, while other universities might not cover them all. This variation led to a lack of consistency in the elective course offerings within the curriculum, which affected the clarity of information regarding elective choices across programs. Furthermore, even after studying electives in certain majors, graduates might not apply this knowledge in their actual work, especially in TM, leading to a lack of confidence in their skills. For example, students who took electives in Tmas learn about more complex conditions, such as patellar subluxation and spinal curvature, but often didn't encounter such cases in practice, which might reduce their confidence in treating these conditions. Similarly, in TP electives, students gained advanced knowledge in herbal extraction and modernized medicine production techniques, but they often didn't use these skills immediately in their work. Instead, this knowledge was more applicable in further studies at the master's or doctoral level, contributing to lower confidence in hands-on TP practice during the initial phase of their careers. Similarly, in the field of Tmid, gaining additional knowledge without practice led to a lack of confidence in performing in this major. Currently, most people choose to have prenatal care and give birth with western medical practitioners, which limits opportunities for ATTM practitioners to apply their midwifery knowledge. This lack of practical experience contributes to lower self-efficacy in Tmid practice.

This study involved a diverse sample of 560 ATTM practitioners with varying ages, educational backgrounds, and work experience, providing a robust sample size to analyze and summarize overall self-efficacy in clinical practice among ATTM practitioners. However, as the results are based on a specific group of ATTM practitioners, the findings may primarily help in fostering self-confidence in clinical practice within this group. The results may not be generalizable to groups outside ATTM practitioners or those still in postgraduate education, so further research should examine these populations. The findings can inform the development of teaching methods aimed at enhancing ATTM students' self-efficacy across various clinical practices, with particular emphasis on hands-on practice and observing role models, such as peers, senior students, or instructors.

Conclusion

In ATTM practice, it was found that self-efficacy in clinical practice comes from hands-on experience and observing role models. The study also showed that ATTM practitioners have the highest self-efficacy in Tmas practice. Furthermore, participants rated TM practice as the most difficult. Specifically, physical examination and diagnosis were assessed as the most difficult. These findings can serve as preliminary data to support curriculum development in universities offering ATTM programs, enhancing students' self-efficacy upon graduation and providing for future research.

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Table 1 Demographic data and characteristics of participants (N = 560).

Characteristics	N	%
Gender		
Female	417	74.46
Male	141	25.18
n/a	2	0.36
Age (years)		
22-24	276	49.29
25-39	272	48.57
> 40 years	12	2.14
Mean (S.D.) = 26.52 (4.2) , Min = 22, Max = 51		
Occupations		
Government	150	26.79
Private company	311	55.53
Business	77	13.75
Freelance/students	22	3.93
Occupation related to ATM		
Yes	494	88.21
No	9	1.61
n/a	57	10.18
Fields of current clinical practice		
Thai traditional medicine (TM)	407	82.39
Thai traditional massage (Tmas)	443	89.68
Thai traditional pharmacy (TP)	392	79.35
Thai traditional midwifery (Tmid)	291	58.91
Practice in all field	260	52.63
Grade point average (n = 555)		
<2.50	12	2.16
2.51-2.99	113	20.36
3.00-3.24	172	30.99
3.25-3.49	138	24.87
>3.50	120	21.62
Mean (S.D.) =3.21(0.33), Min = 2.00 Max =3.96		

Table 2 COMPONENTS influencing self-efficacy and practical difficulty scores across four majors of Thai traditional medicine.

Factors of self-efficacy (%)	Thai medicine (TM)	Thai massage (Tmas)	Thai pharmacy (TP)	Thai midwifery (Tmid)
Mastery experience	98.75	98.04	71.07	96.43
Vicarious experience	97.86	96.96	80.71	96.07
Verbal persuasion	87.14	84.11	65.18	87.14
Physiological and affective states	80.71	82.14	79.29	87.32
Practical difficulty (Mean±S.D.)	4.89 ± 2.17	3.32 ± 2.01	4.67 ± 2.18	3.76 ± 2.11
Self-efficacy (Mean±S.D.)	6.55 ± 2.10	7.53 ± 2.41	6.55 ± 2.21	6.87 ± 2.30

Table 3 Mean self- efficacy scores in the practices of four majors in Thai traditional medicine

Major in Thai traditional medicine	Mean	S.D.
Thai medicine (TM)		
Medical history taking	6.64	2.13
Physical examination	6.16	1.97
Diagnosis	6.47	1.96
Treatment	6.6	1.99
Patient Referral	6.49	2.21
Providing advice on illness	6.94	2.36
Thai massage (Tmas)		
Medical history taking	7.4	2.29
Physical examination	7.35	2.3
Basic massage performance	7.6	2.43
Treatment massage	7.35	2.33
Hot compression	7.79	2.57
Providing advice on illness and exercises	7.66	2.54
Thai pharmacy (TP)		
Drug preparation	6.5	2.14
Single herb production	6.38	2.14
Herbal formula production	6.17	2.06
Single herb compounding	6.46	2.15
Herbal formula compounding	6.22	2.09
Dispensing practice	7.04	2.41
Providing advice herbal medicine and decoction preparing	7.09	2.48
Thai midwifery (Tmid)		
Hot salt pot compression	6.91	2.21
Herbal scrub and paste	6.73	2.36
Hot herbal streaming	7.21	2.45
Cloth abdominal support	6.64	2.28
Hot charcoal seating	6.51	2.34
Providing advice postpartum care	7.21	2.51

Table 4 Correlation between learning and work experiences with self-efficacy (Pearson's correlation coefficients)

	Overall self-efficacy	Self-efficacy of TM	Self-efficacy of Tmas	Self-efficacy of TP	Self-efficacy of Tmid
	R (p-value)	R (p-value)	R (p-value)	R (p-value)	R (p-value)
Grade point average	0.043 (0.308)	-0.102* (0.02)	-0.063 (0.137)	-0.072 (0.90)	0.006 (0.895)
Duration for applying job	0.076 (0.087)	0.075 (0.092)	0.035 (0.428)	0.089* (0.045)	0.039 (0.387)
Duration of current job	-0.047 (0.293)	-0.061 (0.173)	-0.033 (0.453)	-0.041 (0.362)	-0.032 (0.0.474)
Number of workplace experiences	0.075 (0.080)	0.084* (0.048)	0.064 (0.131)	0.044 (0.308)	0.062 (0.147)

*p < 0.05.

During curriculum = ช่วงที่เรียนอยู่

Independent t test and ANOVA

Table 5 Comparison analysis of mean self-efficacy scores among participants in different majors of Thai traditional medicine during curriculum and fields of current practice.

Self-reported having confidence (Yes/No) in performing each practice	N	Mean score of self-efficacy by practice, mean \pm SD					
		Overall self-efficacy		Self-efficacy of TM	Self-efficacy of Tmas	Self-efficacy of TP	Self-efficacy of Tmid
Back in school years							
Thai medicine (TM) practice							
Yes	431	169.84 (47.21)	0.04*	39.09 (11.67)	0.31		
No	120	179.29 (36.74)		40.28 (10.44)			
Thai massage (Tmas) practice							
Yes	432	168.66 (47.07)	0.001**		44.63 (14.67)	0.03*	
No	119	183.64 (35.86)			47.22 (10.13)		
Thai Pharmacy (TP) practice							
Yes	425	168.90 (48.28)	<0.001***			45.44 (14.68)	1.38
No	126	181.64 (31.29)				47.25 (11.13)	
Thai midwifery (Tmid) practice							
Yes	352	167.09 (48.21)	0.001**				33.06 (11.44)
No	199	180.39 (38.21)					35.67 (9.29)
At the present job							
Thai medicine (TM) practice							
Yes	416	173.94 (45.93)	0.07	40.29 (11.23)	<0.001***		
No	136	165.82 (42.58)		36.32 (11.52)			
Thai massage (Tmas) practice							
Yes	459	171.24 (46.29)	0.40		45.54 (14.01)	0.34	
No	91	175.62 (39.33)			44.24 (13.27)		
Thai Pharmacy (TP) practice							
Yes	400	174.46 (46.57)	0.03*			45.99(13.96)	0.71
No	152	165.33 (40.92)				45.48(13.96)	
Thai midwifery (Tmid) practice							
Yes	302	172.26 (47.17)	0.86				34.41 (10.85)
No	250	171.56 (42.85)					32.83 (10.40)

*p < 0.05, **p < 0.01, ***p < 0.