# Integrative Medicine and Health Training for Thai General Practitioners (GP): A SEM Analysis

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*The study aimed to determine which factors affected a Thai general practitioner's (GP) intent to take integrative medicine and health (IMH) training. From the literature review, it was noted that IMH has other similar programs globally with names such as complementary and alternative medicine (CAM) and complementary and integrative medical procedures (CIM). Additionally, three latent variables were selected for the study and used in the confirmatory factor analysis (CFA) and structural equation model (SEM) LISREL 9.10 path analysis of the five hypotheses. The SEM results for each GP's training attendance intention (TAI) discovered that first in importance was each medical professional's learning ability (LA), then their perception of the innovative training course (ITC), and finally, their innovative attitude (IA). Final determination was then made that all the causal variables in the model had a positive influence on TAI, with the variability of factors influencing TAI ($R^2$) at 41%. The three causal variables determined to affect TAI had total effect values of 0.64 (LA), 0.52 (ITC), and 0.43 (IA), respectively.*

*Keywords: complementary and alternative medicine (CAM), complementary and integrative medical procedures (CIM), healthcare education, healthcare pedagogy, Thailand*

## INTRODUCTION

In Germany, Hahn (2021) discussed in detail how integrative medicine and health (IMH) is a theory-based paradigm shift for health care systems in which the competencies and roles of doctors (skills, values, knowledge, and attitudes) require some critical additions. IMH has also been stated to be a growing science in which the synergies between complementary medical treatments and disciplines are developed. IMH also combines physiological, social, psychological, and nutritional approaches to medicine and offers the possibility of reducing traditional medication by incorporating tools that allow us to decrease iatrogenesis and improve the prognosis of chronic diseases (Peer & Shabir, 2018). It has also been referred to as a 'bio-psycho-socio-spiritual' model (Sarris et al., 2014), in which participants are introduced to a healing-oriented

approach to medicine that considers the patient's entire person, including their body, mind, spirit, and lifestyle (Maizes et al., 2006).

Although the United States and Canada have become leaders in IHM training and education, according to North et al. (2018), IMH pedagogy and content for health care and professional education best practices have not been established. Part of this confusion possibly lies in the IMH's use of traditional, complementary, and integrative medicine to meet healthcare's 'Triple Aim' (Berwick et al., 2008). This triad of healthcare possibilities includes improved healthcare delivery by improving patient experiences, the improvement of citizen health, and the reduction of expensive healthcare (Herman et al., 2014; Saper, 2016).

Furthermore, as the word 'integrative' suggests, a broad spectrum of healthcare professionals is being trained in IMH. In one IMH study from North et al. (2018), the participants included medical students who were studying to be occupational therapists (OT), physical therapists (PT), and physician assistants (PA). It was also interesting to note in the study that IMH training was also determined to be easy to adapt to online education.

In another IMH study from Boston, the author details the use of IMH by patients and how much they spend in the US each year (in 2007, this was nearly $40 billion) (Saper, 2016). What is also interesting is the list of IMH providers and the socioeconomic background of IMH users, with IMH providers including chiropractic specialists, acupuncture specialists, sellers of natural products, and yoga instructors.

In an investigation about IMH's effectiveness in mental health care, Sarris et al. (2014) stated that approximately 33% of global adult disability comes from mental illnesses. Thus, mental healthcare paradigm changes and practices are required as essential elements in large 21st-century mental healthcare changes. These include clinician training, research priorities, and education reforms.

In the United States and Australia, Valentini et al. (2021) noted that some general practitioners (GPs) use complementary and integrative medical procedures (CIM) in their postgraduate education. However, in Germany, where CIM and GPs are strongly integrated, there is no formal curriculum thus far. This is amazing as over 60% of Germany's GPs are currently using some form of CIM/IMH (Joos et al., 2011), with chirotherapy, relaxation, and neural therapy listed as the top forms of complementary and alternative medicine (CAM).

Surprisingly, the majority of US family physicians (FPs) have no training in CAM/IMH, although 76% of the US FPs have indicated that some form of CAM is used by their patients. In the same survey, 84% of the FPs surveyed indicated their desire to learn more about CAM to address patient concerns better adequately (Winslow & Shapiro, 2002).

Therefore, global CAM/CIM/IMH educational initiatives and programs must be established. The Group on Alternative Medicine of the Society of Teachers of Family Medicine (STFM) is an innovator in developing program curriculum guidelines for CAM formal residency training (Kligler et al., 2000). In the proposal from STFM, they outlined a CAM curriculum guideline that included three main requirements. These were attitudes, knowledge, and skills (AKS). Today, numerous family medicine residency programs in the US incorporate CAM/CIM/IMH curriculums, which are developed and funded by the National Center for Complementary and Alternative Medicine (2022).

As suggested by the research, CAM has become increasingly popular in western culture, with one study suggesting that at the personal level, CAM use is associated with a variety of socioeconomic, demographic, and health indicators (Fjær et al., 2020). At the country level, expenditures for CAM treatment expenditures from national health care budgets are positively seen, with CAM/CIM/IMH use predicated on greater resources.

However, in Southeast Asia, including Thailand, the understanding of the benefits of IMH is increasing. In one study from Singapore, Seet et al. (2020) found in a 2016 national survey that 6.4% of all Singapore citizens used at least one form of CAM in the previous year, with CAM use primarily focused on mental health issues. Once again, sociodemographic variables such as education level and job type played a role in CAM use among the ethnicities surveyed.

In Thailand, Peltzer and Pengpid (2019) surveyed university medical school deans and asked how many were participating in traditional, complementary, and alternative medicine (TCAM) programs. The results

revealed that 50% of the medical schools who responded indicated they had some form of Applied Thai Traditional Medicine (ATTM), Chinese Traditional Medicine, or Oriental Medicine TCAM programs at either the undergraduate or graduate level (Globinmed, 2022).

Furthermore, Puckpinyo et al. (2016) have reported that among the Thai population, there is a significant number of health care seekers (26.3%) who use TCAM. Of these, 15.1% sought help from a massage therapist, 9.6% from an herbalist, and 3% from an acupuncturist. The same study noted increased TCAM use in patients using biomedical health facilities for chronic medical condition treatment.

Moreover, under Thailand's 4.0 initiatives and the Ministry of Public Health's 2016-2025 Strategic Plan titled 'Thailand: A Hub of Wellness and Medical Services,' it is reported that the Kingdom currently has over 1,300 public and private hospitals (Board of Investment, 2018). Also, quite interestingly, in 2018, before the Covid-19 pandemic induced global travel shutdown, Thailand reported 3.42 million foreigners who sought Thai medical treatment, which was growing at a pace of 8.52% annually. This placed Thailand 6th on the global Medical Tourism Industry (MTI) index.

Simultaneously, medical and medical innovation is a top priority under a program titled the 'Yothi Innovation District' in which 13 medical institutions and two universities that offered medical courses close to each other would be at the center of Thailand's medical innovation initiatives.

Somewhat confusingly, an individual's path to becoming a 'medical professional' in Thailand might seem somewhat non-traditional to a Western reader, as Thailand's path to becoming a 'Thai traditional medicine practitioner' can be achieved either by becoming an apprentice to an authorized licensed practitioner or by graduation from a certified academic institution. From these paths, individuals can choose to practice Thai traditional medicine (TTM) or applied TTM (ATTM). The difference is that while a licensed ATTM practitioner can practice in all areas of TTM, a TTM practitioner must obtain a license for either traditional medicine, pharmacy, or traditional Thai midwifery (Chokevivat et al., 2005). In the most recent data from Globinmed (2022), Thailand was reported to have 21 universities that had ATTM 4-year programs. Certified assistants to ATTM practitioners participated in a 330-hour assistant certification program.

Finally, Globinmed data on Thailand in 2009 reported that the Thai Kingdom had 17,001 licensed TTM medicine practitioners and 23,409 TTM pharmacy practitioners. However, ATTM practitioners can only use a limited number of modern medical devices, such as a stethoscope or thermometer, and can only prescribe traditional medicines (Chokevivat et al., 2005). Many of these practitioners are on the staff of one of the 606 registered TTM hospitals in Thailand but are overwhelmed with domestic and foreign patients. Therefore, initiatives must be taken to develop and implement short-term training programs focused on developing CAM/CIM/IMH specialists trained in traditional medicines' various forms and methods.

### Research Objective

To develop a structural equation model of training attendance intention in integrative medicine and health (IMH) training courses for Thai general practitioners.

## LITERATURE REVIEW

### Learning Ability (LA)

Numerous scholars have pointed out that developing critical thinking skills (CTS) is essential for modern education models and approaches (Enciso et al., 2017). Changwong et al. (2018) have added that student preparation in CTS is a crucial goal for many university educators and a pre-employment skill sought by most employers. Other factors affecting LA are student motivation (Chen et al., 2018), readiness and willpower, aspiration and achievement levels, attention span, the learner's health condition, and socioeconomic status (Lawson & Farah, 2017). In a study from Australia, Byers et al. (2018) added that student LA was directly influenced by the use of an innovative learning environment compared to the traditional classroom.

**Innovative Training Course (ITC)**

The creation of innovation and its subsequent use is the topic of countless global studies. However, in Thailand, various scholars have observed the importance of innovative thinking in tomorrow's future teachers. In two such studies, Binheem et al. (2021) and Moto et al. (2018) reported on how technological advances and their use by 21st-century Generation Z students have forced student teachers into a new world of digitally enabled learning. Teachers and institutions must embrace these newer digital technologies and learn to use them effectively.

Moreover, learning innovation requires adjustments to the learning and teaching process by changing the students' behavior by using digital technology and information communication technology (ICT) as a tool to stimulate learning motivation (Ruenphongphun et al., 2022). Various learning models and methods have been developed to achieve learning motivation. Often cited studies include flipped classrooms, blended learning, problem-based learning (Srakaew et al., 2021), project-based learning (Lee & Yuan, 2018), gamification (Chinchua et al., 2022; Kummanee et al., 2020; Poondej & Lerdpornkulrat, 2019; Sarapak et al., 2022), and online/e-learning (Poondej & Lerdpornkulrat, 2019; Yee, 2015; Yustika & Iswati, 2020).

It has also been suggested that in some classroom environments, such as physics, where laboratories are expensive, potentially dangerous, or non-existent, virtual reality (VR) can be a method to supplement 'hands-on' learning (Sarapak et al., 2022). In a similar manner where patient wellness is at stake, VR has been suggested to train health care professionals (Bracq et al., 2019; Khan et al., 2018).

**Innovative Attitude (IA)**

Innovation is founded on how individuals use their ideas to create new things. Therefore, it is essential that a better understanding is achieved of the role that personal characteristics play in innovative initiatives (Purc & Laguna, 2019). Moreover, innovative ideas and creations are recognized worldwide as critical for the success and effectiveness of firms and nations (Anuntarumporn & Sornsaruht, 2022; Virasa et al., 2022).

The World Economic Forum has also offered survey data to higher education institutions concerning what employers would be looking for in 2020. These included the ability for CTS, complex problem-solving skills (CPSS), creativity, teamwork, and emotional intelligence (EI) (World Economic Forum, 2016). Lee and Yuan (2018) have added that in China, there has been a very significant push to create an innovative culture and entrepreneurship through innovation education.

**Training Attendance Intention (TAI)**

Intent is an expression of a person's intention that occurs before the act or omission of a behavior. Intention is a visual motivation that leads to a plan to act on a behavior (Ajzen, 1991). Kövecses-Gősi (2018) has added that today's learning environments need to consider the characteristics of a new digital generation and the need for a focus on teamwork-based cooperative education that is experience-oriented and can solve complex problems.

**Conceptual Model and Hypotheses Statements**

***H1:*** *Learning Ability (LA) directly influences an Innovative Training Course (ITC).*

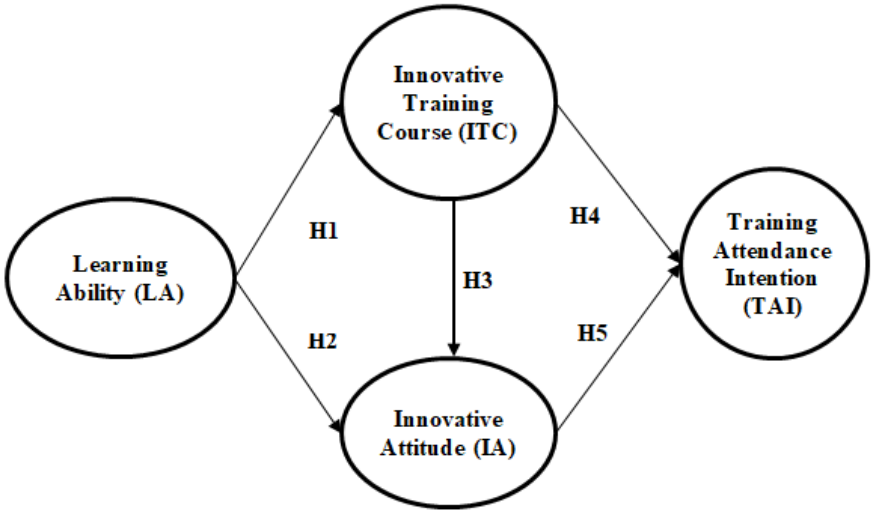
***H2:*** *Learning Ability (LA) directly influences an Innovative Attitude (IA).*

***H3:*** *An Innovative Training Course (ITC) directly influences an Innovative Attitude (IA).*

***H4:*** *An Innovative Training Course (ITC) directly influences Training Attendance Intention (TAI).*

***H5:*** *An Innovative Attitude (IA) directly influences Training Attendance Intention (TAI).*

**FIGURE 1**
**HYPOTHESIZED MODEL**




## MATERIALS AND METHODS

### Population and Sample

The population for the study was 3,077 general practitioners (GP) from various institutions in Thailand in 2022. The sample size determination was determined from the scholarly literature. According to Schumacker & Lomax (2016) and Hair Jr. et al. (2021), CFA/SEM studies, at a minimum, should have 200 questionnaires. However, Doğan (2022) has suggested that if the data are multivariate nonnormality, sample sizes should increase to 250, and GFI, AGFI, and RMSEA goodness-of-fit (GoF) measures should be considered (Wang et al., 2020).

It is also suggested that 10 – 20 questionnaires be obtained for each observed variable used in a CFA study. Therefore, for this study, 250 individuals were considered the base target, which was increased to an upper target of 350 using the 20:1 ratio. This is considered a good practice as Brown (2015) and Kyriazos (2018) have suggested that the sample size influences the precision and statistical power of CFA and SEM estimates. Therefore, to be highly reliable, the researchers adjusted the sample size to 340 GPs and then used a proportional systematic random sampling from a list of general practitioners (GPs) from five institutions in Thailand (Table 1.)

**TABLE 1**
**NUMBER AND PERCENTAGE OF THAI MEDICAL PROFESSIONALS CLASSIFIED BY INSTITUTIONS**

| Institution | Population | Sample | |
|---|---|---|---|
| | | Number | % |
| Mae Fah Luang University's School of Anti-Aging and Regenerative Medicine (Master's Program) | 500 | 55 | 16.18 |
| Dhurakij Pundit University's Department of Anti-Aging and Regenerative Medicine (Master of Science Program) | 350 | 39 | 11.47 |
| Thai Chelation Medical Association (CMAT) | 1,259 | 139 | 40.88 |
| Association of Cell Therapy (ACT, Thai) | 528 | 58 | 17.06 |
| Thai Integrative Medicine Association (TIMA) | 440 | 49 | 14.41 |
| **Totals** | 3,077 | 340 | 100 |

Note: *Information as of January 2022
Sources: (http://anti-aging.mfu.ac.th, http://dpu.ac.th, http://www.cmat.or.th, http://www.celltherapythai.or.th, http://www.tima.or.th)

**Research Tools**

The tool used in the data collection process was a General Practitioners' (GP) opinion questionnaire which contained five main parts. Part 1 was considered with each health care specialist's personal and work-related information. This included their gender, age, interest in studying to become a medical specialist, place of professional practice, and their related experience in training or education in the field of integrative medicine (Table 2).

In Parts 2-5, the study used six experts to assess the content validity of each item in the questionnaire, which was evaluated using the index of item-objective congruency (IOC) (Chuenban et al., 2021). Usually, items with values of ≤ .50 are deleted or revised (Taherdoost, 2016). After this, the pilot test of 25 questionnaires had each item examined for their reliability, usability, and accuracy by using Cronbach's α, which scholars have suggested that α ≥ .8 is good and α ≥ .9 is excellent (Hair Jr. et al., 2021).

In Part 2 of the questionnaire were five items that used a five-level opinion scale to assess each GP's view of the importance of *learning ability* (LA) and how it contributed to *training attendance intention* (TAI). The IOC = 0.83-1.00 and α reliability results were 0.89 (Table 3).

In Part 3 of the questionnaire were four items that used a five-level opinion scale to assess each GP's view of an *Innovative Training Course* (ITC) and how it contributed to *training attendance intention* (TAI). The IOC = 1.00 and α reliability results were 0.88 (Table 3).

In Part 4 of the questionnaire were three items that used a five-level opinion scale to assess each GP's view of an *innovative attitude* (IA) and how it contributed to *training attendance intention* (TAI). The IOC = 1.00 and α reliability results were 0.96 (Table 3).

In Part 5 of the questionnaire were three items that used a five-level opinion scale to assess each GP's view of *training attendance intention* (TAI). The IOC = 0.83-1.00 and α reliability results were 0.95 (Table 3).

**Data Collection**

An online questionnaire (Google Form) was used to randomly collect the data from every fifth Thai general practitioner (GP) in four Thai medical institutions in 2022 (Ruenphongphun et al., 2022). Initially, institution coordination was done in person and by telephone. After this, an e-mail or Line was used to guide each individual to the Google Form questionnaire and gently prod each person to complete the form. During the first phase of this process in May 2022, questionnaires were completed at 32%. The researchers followed up again in June 2022 until 100% of the questionnaires (340) were completed.

**Data Analysis**

The experts' opinions were analyzed using SPSS for Windows Version 21. The experts' interpretive mean criteria used 4.50 – 5.00 to indicate that they had '*strong agreement*' with each item's statement, followed by 2.50 – 4.49 indicting '*high agreement*,' 2.50 – 3.49 indicting '*moderate agreement*,' 1.50 – 2.49 indicting 'low agreement,' and 1.00 – 1.49 indicating '*no agreement*.' Data analysis was then conducted using descriptive statistics, including the mean, standard deviation (SD), frequency, and percentage. According to Kim (2015), data normality is assessed using skewness and kurtosis *p*-values. Curran et al. (1996) as added that univariate values approach 2.0 for skewness and 7.0 for kurtoses; the analysis is suspect.

## RESULTS

**Medical Professional Respondent Characteristics**

Table 2 shows the GPs' input concerning their characteristics. First, we note that the ratio of men to women is nearly equal (52.06%/47.94%). Second, we note that a large majority are between 31 and 50 (87.35%). Third, we see that the medical specialists were almost equally divided between those who wished to continue their studies (38.82%) and those that did not (36.18%). Fourth, most had found employees in private hospitals or clinics (54.41%), followed by employment in public hospitals or clinics (22.06%).

**TABLE 2**
**GENERAL PRACTICE PHYSICIANS (GP) CHARACTERISTICS (N=340)**

| General Information | | No. | % |
|---|---|---|---|
| Gender | Male | 163 | 47.94 |
| | Female | 177 | 52.06 |
| Age Range | 30 years old or less. | 18 | 5.29 |
| | 31 – 40 years old. | 180 | 52.94 |
| | 41 - 50 years old. | 117 | 34.41 |
| | 51 – 60 years old. | 23 | 6.76 |
| | More than 60 years old. | 2 | 0.59 |
| Medical specialist education current status. | I am continuing to study. | 132 | 38.82 |
| | No further education is intended. | 123 | 36.18 |
| | Undecided. | 85 | 25.00 |
| Place of professional practice. | Practice in my clinic. | 37 | 10.88 |
| | Practice in a doctor's clinic. | 43 | 12.65 |
| | Practice in a private hospital. | 185 | 54.41 |
| | Practice in a public hospital. | 75 | 22.06 |
| Medical training or study institute. | Thai Chelation Medical Association (CMAT) | 139 | 40.88 |
| | Association of Cell Therapy (ACT, Thai) | 58 | 17.06 |
| | Thai Integrative Medicine Association (TIMA) | 49 | 14.41 |
| | Mae Fah Luang University's Anti-Aging and Regenerative Medicine School at (Master's Program) | 55 | 16.18 |
| | Dhurakij Pundit University's Department of Anti-Aging and Regenerative Medicine (Master of Science Program) | 39 | 11.47 |

**Latent Variable and Observed Variable Analysis**

Table 3 shows the variable analysis results.

**TABLE 3**
**INTERNAL AND EXTERNAL VARIABLE ANALYSIS**

| Latent variables | α | AVE | CR | Observed Variables | λ | $R^2$ |
|---|---|---|---|---|---|---|
| Learning Ability (LA) | 0.89 | 0.46 | 0.80 | physiological needs (x1) | 0.38 | 0.15 |
| | | | | self-awareness knowledge (x2) | 0.63 | 0.39 |
| | | | | self-directed learning (x3) | 0.84 | 0.71 |
| | | | | self-esteem (x4) | 0.77 | 0.59 |
| | | | | critical thinking (x5) | 0.67 | 0.45 |
| Innovative Training Course (ITC) | 0.88 | 0.65 | 0.88 | health service innovation (y1) | 0.85 | 0.73 |
| | | | | instructor-led active learning (y2) | 0.81 | 0.66 |
| | | | | hands-on learning activities (y3) | 0.90 | 0.81 |
| | | | | 21st-century skills (y4) | 0.64 | 0.41 |
| Innovative Attitude (IA) | 0.96 | 0.61 | 082 | intellectual (y5) | 0.78 | 0.61 |
| | | | | emotional (y6) | 0.83 | 0.69 |
| | | | | behavioral (y7) | 0.73 | 0.53 |
| Training Attendance Intention (TAI) | 0.95 | 0.70 | 0.87 | training program perception (y8) | 0.87 | 0.74 |
| | | | | social and economic reasons (y9) | 0.80 | 0.63 |
| | | | | image aspects of the course (y10) | 0.83 | 0.69 |

Note. λ = standardized factor loading

**GoF Assessment Results**

The validity of the causal model of the variables that influenced medical professionals' desire for training attendance intention (TAI) used LISREL 9.10 for the GoF, CFA, and SEM analysis. Common fit indices and criteria suggested by scholars for CFA studies include RMSEA (≤ 0.05), CFI (≥ 0.90), and SRMR (≤ 0.05) and a confidence interval of 90%, Chi-square $\chi 2$ ($p \geq 0.05$), degree of freedom (df), as well as significance values (Kline, 2016; Koyuncu & Kilic, 2019). Tabachnick and Fidell (2013) have also indicated that smaller Chi-square values relative to the df ($\chi$**2**/df≤ 2.00) show a good fit. Other studies have suggested that NFI ≥ 0.90, RMR ≤ 0.05, GFI ≥ 0.90, and AGFI ≥ 0.90 (Doğan, 2022; Jöreskog et al., 2016; Wang et al., 2020). Thus, the CFA was found to be consistent with all indices passing established criteria with $\chi 2 = 0.96$, $\chi 2/df = 0.64$, RMSEA = 0.00, GFI = 0.99, AGFI = 0.97, RMR = 0.02, SRMR = 0.02, NFI = 0.99, and CFI = 1.00. Shrestha (2021) has suggested that Cronbach's Alpha values should be ≥ 0.70, with the study returning values of 0.88-0.96, indicating strong item reliability.

According to Bono et al. (2019), assessing data distribution typically includes a skewness and kurtosis test, with kurtosis usually done first (Table 4). After examination, recommend acceptable values for kurtosis ≤ |7| and skewness ≤ |2| (Curran et al., 1996). Thus, the values of -.63 to .25 are acceptable, as are the Kurtosis values of -1.06 to 4.22.

**TABLE 4**
**CORRELATION COEFFICIENTS BETWEEN THE LATENT VARIABLES**

| Latent Variables | LA | ITC | IA | TAI |
|---|---|---|---|---|
| Learning Ability (LA) | **1.00** | | | |
| Innovative Training Course (ITC) | .73** | **1.00** | | |
| Innovative Attitude (IA) | .56** | .70** | **1.00** | |
| Training Attendance Intention (TAI) | .57** | .73** | .76** | **1.00** |
| Mean | 4.40 | 4.37 | 4.35 | 4.36 |
| Standard deviation | .34 | .37 | .41 | .37 |
| Skewness | -.45 | .25 | -.63 | .17 |
| Kurtosis | .76 | -1.06 | 4.22 | -.54 |

Note. **Sig. ≤ .01,

**Mediation Analysis**

Table 6 details the latent variable standard coefficient of influence for the direct effect (DE), indirect effect (IE), and total effect (TE) (Agler & De Boeck, 2017). Table 6 shows the hypotheses testing results, and Figure 2 is the final SEM model.

**TABLE 5**
**SEM STANDARD COEFFICIENT OF INFLUENCE FOR THAI GP TAI**

| Dependent variables | $R^2$ | Effect | Independent variables | | |
|---|---|---|---|---|---|
| | | | LA | ITC | IA |
| Innovative Training Course (ITC) | 0.61 | DE | 0.78** | | |
| | | IE | - | | |
| | | TE | 0.78** | | |
| Innovative Attitude (IA) | 0.55 | DE | 0.54** | 0.26* | |
| | | IE | 0.20* | - | |
| | | TE | 0.74** | 0.26* | |
| Training Attendance Intention (TAI) | 0.41 | DE | - | 0.41** | 0.43** |
| | | IE | 0.64** | 0.11** | - |
| | | TE | 0.64** | 0.52** | 0.43** |

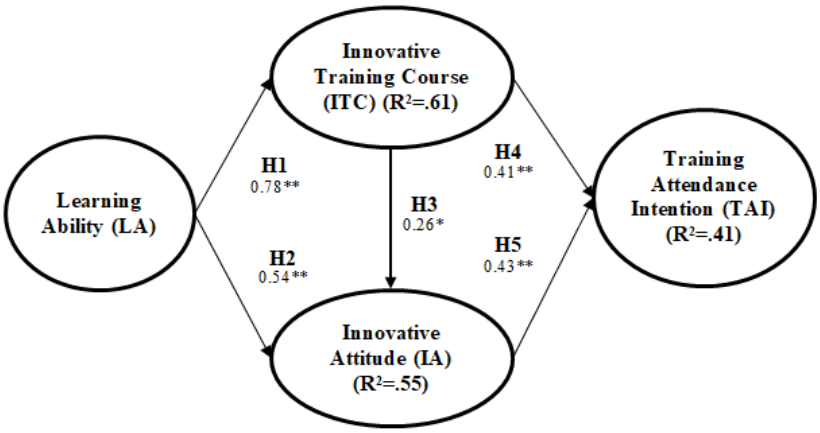
Note. *Sig. ≤ .05, **Sig. ≤ .01

**TABLE 6**
**RESEARCH HYPOTHESES TEST RESULTS**

| Hypotheses | Coef. | t-test | Validation |
|---|---|---|---|
| H1: Learning Ability (LA) directly influences an Innovative Training Course (ITC). | 0.78 | 15.94** | Valid |
| H2: Learning Ability (LA) directly influences an Innovative Attitude (IA). | 0.54 | 4.70** | Valid |
| H3: An Innovative Training Course (ITC) directly influences an Innovative Attitude (IA). | 0.26 | 2.24* | Valid |
| H4: An Innovative Training Course (ITC) directly influences Training Attendance Intention (TAI). | 0.41 | 3.59** | Valid |
| H5: An Innovative Attitude (IA) directly influences Training Attendance Intention (TAI). | 0.43 | 4.06** | Valid |

Note. *Sig. < .05, **Sig. < .01

**FIGURE 2**
**FINAL SEM**




## DISCUSSION

From the SEM research results for medical professional training attendance intention (TAI), it was found that all the model's causal variables had a positive effect on TAI, with the variability of factors influencing TAI (R2) at 41%. Three causal variables influenced TAI. These were LA, an ITC, and IA with total effect (TE) values of 0.64, 0.52, and 0.43, respectively.

### Learning Ability (LA)

Results for the two hypotheses testing for LA were both positive and direct. H1's relationship from LA to ITC was very strong ($r$ = 0.78, t-test value = 15.94, $p \leq 0.01$). The relationship in H2 from LA to IA was moderate ($r$ = 0.54, t-test value = 4.70, $p \leq 0.05$). The total effect value between TAI and LA was 0.64 ($p \leq 0.01$), which was the strongest of the model's dependent variables to the independent variables.

Moreover, results from the descriptive analysis showed that the physiological needs (x1) of each medical professional were judged to have the most importance on their LA (mean = 4.65, SD = .40). This was followed by each individual's self-awareness knowledge (x2) (mean = 4.40, SD = .49). Somewhat surprisingly, critical thinking (x5) was viewed as least important (mean = 4.29, SD = .49).

### Innovative Training Course (ITC)

Results for the two hypotheses testing for ITC were both positive and direct. H3's relationship from ITC to IA was weak (r = 0.78, t-test value = 15.94, p ≤ 0.01). The relationship in H4 from ITC to TAI was moderate (r = 0.41, t-test value = 3.59, p ≤ 0.01). The total effect value between TAI and ITC was 0.52 (p ≤ 0.01), which was second in the strength of the model's dependent variables to the independent variables.

Moreover, results from the descriptive analysis showed that 21st-century skills (y4) of each medical professional were judged to have the most important on an ITC (mean = 4.41, SD = .42). This was followed by hands-on learning activities (y3) (mean = 4.37, SD = .44). Judged least important was instructor-led active learning (y2) (mean = 4.35, SD = .44).

### Innovative Attitude (IA)

Results for the single hypothesis testing for IA were positive and direct, with H5's relationship from IA to TAI moderate ($r$ = 0.43, t-test value = 4.06, $p \leq 0.01$). The total effect value between TAI and IA was 0.43 ($p \leq 0.01$), which was third in the strength of the model's dependent variables to the independent variables. Moreover, results from the descriptive analysis showed very little difference in importance between intellectual (y5), emotional (y6), and behavioral (y7) aspects.

**Training Attendance Intention (TAI)**

The descriptive analysis results for TAI showed that image aspects of the course (y10) were judged to have the most importance on each medical professional (mean = 4.40, SD = .44). This was followed by the training program perception (y8) (mean = 4.37, SD = .41) and social and economic reasons (y9) (mean = 4.30, SD = .40).

## CONCLUSION

The study aimed to determine which factors affected a Thai general practitioner's (GP) intent to take integrative medicine and health (IMH) training. From the extensive literature review, it was noted that IMH has other similar programs globally with names such as complementary and alternative medicine (CAM) and complementary and integrative medical procedures (CIM). Additionally, the literature review analysis helped the authors select three latent variables used in the CFA/SEM LISREL 9.10 path analysis of the five hypotheses. The SEM results for each GP's training attendance intention (TAI) discovered that first in importance was each medical professional's learning ability, then their perception of the innovative training course, and finally, the innovative attitude. The study has found that all the causal variables in the model had a positive influence on TAI, with the variability of factors influencing TAI (R2) at 41%.

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