

Exploring the Utilization of the Line Application and Perception of Medical and Public Health Information among Recipients of Chinese Traditional Medicine Care at the Thai Traditional and Integrated Medicine Hospital, College of Allied Health Sciences, Suan Sunandha Rajabhat University, Thailand

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Abstract

This study employed a quasi-experimental design to achieve two objectives: 1) to investigate the utilization of the LINE Application for accessing local medical and public health information, and 2) to examine the perception of medical and public health information among recipients of Chinese Traditional Medicine care utilizing the LINE Application at the Thai Traditional and Integrated Medicine Hospital, College of Allied Health Sciences. Data analysis was conducted using descriptive and inferential statistics, including measures such as frequency, percentage, mean, standard deviation, and t-test, facilitated by software packages. The study sample comprised 48 care receivers who underwent Chinese Traditional Medicine treatment at the Department of Chinese Traditional Medicine of the Thai Traditional and Integrated Medicine Hospital. Research instruments included a questionnaire and the LINE Application. The findings revealed that following the use of the LINE Application for tracking location and accessing basic information, the level of information technology utilization among care receivers was notably high, with an average score of 4.41. Moreover, the behavior of care receivers in using the LINE Application was also found to be high, with an average score of 4.46, demonstrating statistical significance at the 0.05 level. The research further demonstrated that personal factors had a direct impact on the perception of medical and public health information.

Keywords: Chinese Traditional Medicine Care, Health Information, Integrated Medicine, LINE Application

1. Introduction

Thailand is currently transitioning into the era of Thailand 4.0, as outlined in the 20-year National Strategy aimed at accelerating the country's advancement to a more sophisticated level. In this context, all businesses are expected to foster and endorse innovation, creativity, research and development, advanced technologies, and green technologies. Innovative technologies, including infrastructure, smart cities, and smart devices, are increasingly being developed during this period. The adoption of diverse technologies is deemed vital for facilitating rapid communication growth and significantly enhancing Thailand's economic potential.

Moreover, the development of new technologies heralds an era of global connectivity, profoundly impacting individuals' personal and professional lives and fostering people-to-people connections without boundaries. Within the healthcare sector, there has been a notable shift towards digital transformation in healthcare settings, along with the integration of information technology in the healthcare workplace to enhance communication and streamline operations. Many organizations leverage information technology, social media networks, the internet, cloud computing, and other tools to better cater to the needs of both care providers and recipients and to advance their business objectives.

Therefore, acquiring proficiency in various technologies is crucial for maximizing effectiveness in this era of digital transformation. Information Technology (IT) entails the application of scientific knowledge to manage information, employing modern technological tools such as social media networks [1][2][3][4] and [5]. These networks serve as one of the most commonly utilized communication channels, allowing individuals to interact with one another swiftly and efficiently. Information technology is preferred due to its speed and accessibility through various platforms such as smartphones and the internet. Smartphones utilize information technology to transmit messages, voice recordings, images, and videos, predominantly serving as a means of communication. Users typically utilize smartphones to disseminate information and effectively convey messages to others [6] and [7]. The application LINE is a freeware application for instant messaging on electronic devices such as smartphones, tablets, and personal computers. LINE users typically send each other texts, images, audio, and video. It is a platform that offers various services such as a digital wallet, a news feed, video on demand, and quick instant official messages [8]. Before 2017, Thailand had 40 million people using mobile internet, with 33 million using LINE Application. Mobile internet users are expected to reach 50 million by 2017, following the launch of 4G services. Thais spend an average of 5.7 hours daily on their smartphones and 83.7 minutes daily on the LINE application. As a result of these numerical statistics, LINE Application providers offer a LINE Official Account (LINE OA) Service for corporate customers to add value to their business by communicating and engaging with information that the target audience is interested in at the right time and channel as well as increase sales for the organization [9].

In the past, individuals in Thailand typically acquired health information through consultations with healthcare professionals such as family doctors, pharmacists, and public health experts, as well as by sharing experiences with friends. However, there has been a notable shift towards seeking health information online, with people now accessing such information and services via the internet and various online applications. Consequently, many healthcare providers have transitioned from traditional brochures to online instant messaging platforms as their primary channels for disseminating health information. In Thailand, online communication techniques are employed to distribute pertinent health information to the populace, primarily aimed at mitigating the risks associated with public health

issues stemming from delayed or outdated information perception or negative attitudes towards online information consumption. Consequently, social media networks, as a prevalent online platform in society, have been utilized as tools to accommodate contemporary health information dissemination and lifestyle patterns [10][11][12] and [13].

Suan Sunandha Rajabhat University has been offering programs in Health Sciences and Medical Sciences through its College of Allied Health Sciences for several years, with its curriculum aligned with national strategies and labor market demands. The undergraduate programs offered by the College of Allied Health Sciences encompass various departments, including the Department of Medical and Public Health Secretary, the Department of Thai Traditional Medicine, and the Department of Chinese Traditional Medicine. The establishment of the Thai Traditional and Integrated Medicine Hospital within the college further underscores its commitment to providing healthcare services across diverse fields, such as Applied Thai Traditional Medicine, Chinese Traditional Medicine, Holistic Medicine, and Integrated Medicine.

Chinese Traditional Medicine, a medical science with a lineage spanning over 5,000 years, has been recognized as a holistic healthcare approach within the global health system by the World Health Organization (WHO), aligning well with Thailand's National Economic and Social Development Strategy [14] and [15]. Hence, in this context, the researcher proposes the development of an application model for the Department of Chinese Traditional Medicine, given the anticipated perceptions of new users and the relatively low current user base. Such an information perception system could be developed for sustained growth, ensuring rapid and continuous access to a broad spectrum of service users.

2. Methodology

2.1 Study Design

This study started from a quasi-experimental design, primarily focused on investigating social media models based on self-knowledge generation theory.

2.2 Population and Sample

The population for this study comprised 55 care receivers at the Department of Chinese Traditional Medicine within the Thai Traditional and Integrated Medicine Hospital, affiliated with the College of Allied Health Sciences at Suan Sunandha Rajabhat University. The location of the College of Allied Health Sciences at Suan Sunandha Rajabhat University depicts in Figure 1.

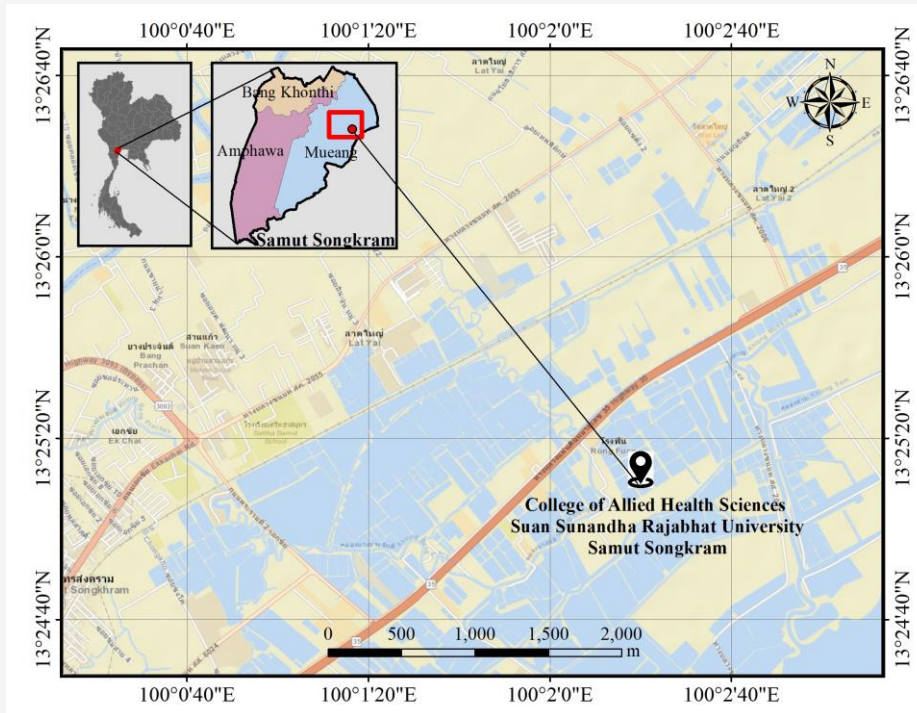


Figure 1: College of Allied Health Sciences, Suan Sunandha Rajabhat University

The sample size of 48 care receivers was determined using Krejcie & Morgan's formula, with a 5% margin of error and a 95% confidence level. Participants were selected through simple random sampling conducted via a lottery among care receivers at the Department of Chinese Traditional Medicine within the Thai Traditional and Integrated Medicine Hospital, affiliated with the College of Allied Health Sciences at Suan Sunandha Rajabhat University.

2.3 Instruments

The instrument utilized in this study comprises:

- The LINE application, specifically LINE@, was employed to investigate the utilization of information technology. It was integrated with the LINE Official Account Service, a popular social media platform in Thailand.
- A questionnaire was utilized for evaluation purposes. Initially, the questionnaire was pilot-tested with 30 participants similar to the sample group. Subsequently, its reliability was assessed using Cronbach's Alpha coefficient, which yielded a value of 0.796, indicating a high degree of internal consistency.

2.4 Data Collection

2.4.1 Experimental preparation

The researcher submitted an official letter from the College of Allied Health Sciences, Suan Sunandha

Rajabhat University, to the Thai Traditional and Integrated Medicine Hospital seeking permission for data collection. Subsequently, the researcher provided an orientation session regarding the utilization of the LINE Application to access medical and public health information to the recipients of Chinese Traditional Medicine care at the Department of Chinese Traditional Medicine within the Thai Traditional and Integrated Medicine Hospital, affiliated with the College of Allied Health Sciences at Suan Sunandha Rajabhat University. Prior to commencing the research activities, basic demographic information was collected, and an assessment of the current situation was conducted. Subsequently, the sample group was instructed to prepare for the experimental phase of the study.

2.4.2 Experimental design status

The investigation commenced by distributing a questionnaire to the sample group, comprising 48 Chinese Traditional Medicine care receivers at the Department of Chinese Traditional Medicine within the Thai Traditional and Integrated Medicine Hospital, affiliated with the College of Allied Health Sciences at Suan Sunandha Rajabhat University. The researcher provided instructions on how to utilize the LINE Application for accessing medical and public health information, allowing the care receivers to engage with the application firsthand and provide feedback on the questionnaire.

Questionnaire distribution took place between August 1st and September 1st, 2019. Following the completion of the questionnaire by the care receivers and the provision of feedback, the researcher collected the questionnaires to ensure their completeness. Subsequently, the researcher examined the collected questionnaires for accuracy and completeness before proceeding with data analysis.

2.5 Data Analysis

For the data analysis, statistical methods employed included frequency and percentage calculations for general data analysis, mean and standard deviation calculations for behavior analysis, and a t-test for comparing hypotheses derived from pre- and post-scores, with a significance level set at 0.05.

2.6 Ethical Consideration

This research proposal has already been reviewed by the Suan Sunandha Rajabhat University Ethics Committee, with the certificate number COE. 1-014/2019. The Ethics Committee has granted approval for the implementation of this research proposal.

3. Results and Discussion

The study gathered data from a cohort of 48 care receivers, and subsequently, the research findings were investigated across four distinct segments, outlined as follows.

3.1 Questionnaire Part 1: General Information

The researcher analyzed and presented the demographics of the sample groups, utilizing descriptive statistics including frequency and percentage. The gathered information encompassed gender, age, educational level, occupation, monthly income, marital status, and received treatment, as outlined below.

3.1.1 Gender

The research comprised a sample group of 48 care receivers, consisting of 40 females, representing 83.3% of the total, and eight males, accounting for 16.7% of the sample, respectively.

3.1.2 Age

The research identified five age groups within the sample population. The majority consisted of 14 respondents aged between 21-30 years old (29.2%), followed by 12 respondents aged between 31-40 years old (25.0%), 10 respondents aged between 41-50 years old (20.8%), 7 respondents aged over 60

years old (14.6%), and 5 respondents aged between 31-40 years old (10.4%), respectively.

3.1.3 Educational level

The research also unveiled eight educational levels within the sample groups. The majority comprised 23 respondents holding bachelor's degrees (47.9%), followed by 7 respondents with high school diplomas (14.6%), 6 respondents with primary school diplomas (12.5%), 5 respondents with master's degrees (10.4%), 3 respondents with vocational diploma qualifications (6.3%), 2 respondents with Ph.D. degrees (4.2%), and 1 respondent with a secondary school diploma (2.1%), respectively.

3.1.4 Occupation

Based on the occupations of the sample groups, the research revealed that the majority comprised 10 government officers (20.8%), followed by 9 business owners (18.8%), 8 students (16.7%), 7 private company employees (14.6%), 5 housewives (10.4%), 4 freelancers (8.3%), and 1 state enterprise employee (2.1%), respectively.

3.1.5 Monthly income

According to the monthly income of the sample groups, 14 of the respondents earned 9,000 THB per month (29.2%), followed by 10 respondents earning between 15,001 and 20,000 THB per month (20.8%). Additionally, 8 respondents earned between 27,001 and 33,000 THB per month (16.7%), while 6 respondents earned incomes ranging from 9,001 to 15,000 and 21,001 to 27,000 THB per month (12.5%). Furthermore, 4 respondents earned 33,001 THB per month (8.3%).

3.1.6 Marital status

The research revealed that the majority of the sample groups, 21 individuals, were single (43.8%), followed by 20 individuals who were married (41.7%). Additionally, there were 3 separated couples (6.3%), and 2 individuals who were divorced or widowed (4.2%), respectively.

3.1.7 Chinese traditional medicine treatment

In relation to the Chinese Traditional Medicine treatments received by the sample groups, the study revealed that all respondents underwent acupuncture (100%). Additionally, 13 respondents (27.1%) received cupping therapy, while no care receivers underwent treatments such as Chinese moxibustion, Gua sha, Tuina, Mugwort, or other traditional therapies.

3.2 Questionnaire on the Care Receivers' Basic Information on the LINE Application Usage

3.2.1 Questionnaire part 2

The researcher presented the basic information of care receivers regarding their use of the LINE Application, comparing data from the Pre-Test (before using the LINE Application) and Post-Test (after using the LINE Application). The results illustrate in Table 1.

Table 1 presents the findings from the Pre-Test and Post-Test assessments of basic information among Chinese Traditional Medicine care receivers who utilized the LINE Application for accessing health information. The results indicate that all questionnaire items achieved statistical significance at a significance level of 0.05, suggesting support for the research hypothesis. Furthermore, the study suggests that the utilization of information technology through the LINE Application was effective, with a trend indicating an increase in the number of users over time. When examining individual questionnaire items, the Post-Test question "an Information system has interesting forms and methods of presenting information" received the highest average score of 4.56 and standard deviation of 0.33, followed by the question "an Information system is a comprehensive system because it has been processed" (with a mean of 4.54 and standard deviation of 0.30).

3.2.2 Questionnaire part 3

Part 3 of the questionnaire focused on soliciting the opinions of care receivers regarding their perception of medical and public health information through the utilization of the LINE Application. The researcher compared the responses gathered before and after the use of the LINE Application among Chinese Traditional Medicine care receivers. Statistical analysis was conducted using Best's techniques of descriptive statistics (1978).

Table 2 presents the findings from the Pre-Test and Post-Test assessments of the perception of medical and public health information among Chinese Traditional Medicine care receivers who utilized the LINE Application for accessing health information. All questionnaire items achieved statistical significance at a significance level of 0.05, indicating support for the research hypothesis. Additionally, the results suggest that the utilization of information technology through the LINE Application was effective, with an increasing number of users observed over time. Furthermore, when examining individual questionnaire items, the Post-Test questions "users receive news through presentations with new technologies on the internet" and "medical information is up-to-date, and information is added all the time" received the highest average score of 4.56.

3.2.3 Questionnaire part 4

The questionnaire segment focused on the behaviors of care receivers in utilizing the LINE Application. The researcher compared care receivers' behaviors before and after using the LINE Application, conducting analysis using Best's techniques of descriptive statistics (1978).

Table 3 presents the findings from the Pre-Test and Post-Test assessments of care receivers' behaviors in using the LINE Application, comparing data before and after its usage. All questionnaire items achieved statistical significance at a significance level of 0.05, indicating support for the research hypothesis. Additionally, the results suggest that the utilization of information technology through the LINE Application was effective, with an observed increase in the number of users over time. Furthermore, when considering each questionnaire item individually, the Post-Test questions "you use the LINE Application every free time" and "the LINE Application makes you feel relaxed" received the highest average score of 4.63.

Table 1: Comparison of basic information regarding the utilization of the LINE Application among Chinese Traditional Medicine care receivers before and after its utilization

Item	Pre-test		Post-test		t	p-value
	Mean	SD	Mean	SD		
Information is up-to-date and easy to find.	2.73	0.46	4.48	0.47	-12.12	0.00*
Information is quickly accessible and easy to use.	3.06	0.78	4.38	0.45	-8.31	0.00*
Information is accurate, consistent and can be trusted according to the source.	2.88	0.75	4.40	0.50	-9.49	0.00*
Information can be used to present works in various formats.	3.06	0.74	4.15	0.55	-7.79	0.00*
Information system is a comprehensive system because it has been processed.	2.94	0.66	4.54	0.30	-11.83	0.00*
Information system has interesting forms and methods of presenting information.	2.92	0.89	4.60	0.33	-11.30	0.00*
Information system is beneficial to operations in daily life.	2.73	0.46	4.48	0.47	-12.12	0.00*

* $p < 0.05$

Table 2: Perception of medical and public health information among Chinese Traditional Medicine care receivers using the LINE Application, comparing perceptions before and after its utilization

Item	Pre-test		Post-test		t	p-value
	Mean	SD	Mean	SD		
Users access news via presentations utilizing cutting-edge internet technologies	2.38	0.37	4.56	0.34	-19.19	0.00*
Users can apply the received news to their daily lives.	2.48	0.51	4.42	0.25	-15.17	0.00*
Users can share the received news with others.	2.60	0.67	4.27	0.54	-9.55	0.00*
Medical information is up-to-date, and information is added all the time.	2.50	0.89	4.56	0.25	-13.48	0.00*
There is communication about information through social media.	2.56	0.72	4.25	0.28	-12.32	0.00*
The received information enriches one's understanding of health.	2.65	0.57	4.42	0.63	-10.64	0.00*
Knowledge is provided in various formats, such as pictures, videos, etc.	2.69	0.60	4.46	0.42	-12.61	0.00*
The information received is up-to-date and reliable.	2.77	0.73	4.35	0.66	-9.90	0.00*
Knowing information through social media is quick and easy to search for more information.	2.27	0.75	4.33	0.65	-11.98	0.00*
The received information will either complement the initial treatment or prove beneficial to the reader.	2.52	0.72	4.44	0.46	-12.92	0.00*

* $p < 0.05$ **Table 3:** Behaviors of care receivers in utilizing the LINE Application comparison before and after its utilization

Item	Pre-test		Post-test		t	p-value
	Mean	SD	Mean	SD		
LINE Application is essential for your life.	2.75	0.70	4.58	0.33	-11.78	0.00*
You use the LINE Application during your free time.	2.96	0.93	4.63	0.37	-11.12	0.00*
You will continue to use the LINE Application even if there are other similar applications.	2.85	0.64	4.50	0.34	-10.54	0.00*
You access the LINE Application whenever you activate it online.	2.63	0.75	4.40	0.50	-10.64	0.00*
The LINE Application induces a sense of relaxation.	2.63	0.84	4.63	0.28	-12.26	0.00*
LINE Application makes it easier to communicate with your colleagues.	2.85	0.98	4.42	0.46	-9.01	0.00*
LINE Application makes you feel excited about various stories	2.67	1.04	4.31	0.56	-8.69	0.00*
You like to send a variety of information to others.	2.63	0.75	4.40	0.41	-12.61	0.00*
You feel that the LINE Application adds chaos and confusion to your life.	2.85	0.85	4.44	0.59	-8.65	0.00*

* $p < 0.05$

4. Conclusion

The questionnaire used in this study consisted of four segments. The research findings revealed an increased perception of medical and public health information among care receivers due to the utilization of information technology through the LINE Application, thereby enhancing connectivity between care providers and recipients. Moreover, all questionnaire items attained statistical significance at a level of 0.05, supporting the hypothesis that using the LINE Application for accessing medical and public health information would lead to an increase in perception. Furthermore, concerning research objective 1, which aimed to examine the use of the LINE Application for accessing local and medical information, the study demonstrated that various

demographic factors, including gender, age, education, occupation, income, marital status, and treatment type, influenced the utilization of the LINE Application for accessing information. Specifically, individuals aged between 21-30 years, constituting a significant proportion of the sample, exhibited a higher propensity to access medical and public health information through different technological platforms, indicating a greater proficiency in technology usage within this age group.

Regarding research objective 2, which focused on studying the perception of medical and public health information among Chinese Traditional Medicine care receivers, the research identified a predominant demographic profile consisting of individuals aged

between 21-30 years with bachelor's degrees, primarily employed as government officers. This demographic profile demonstrated a swift responsiveness to the LINE Application, facilitating rapid communication between care providers and recipients. These findings align with previous research by Kaikarn Senkaew (2017), which highlighted that individuals from the X Generation with bachelor's degrees, particularly those working in government positions or state enterprises, exhibited a high level of engagement with social networks, indicative of their positive attitudes and behaviors toward technology-mediated communication.

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