

Effectiveness of the Thai traditional health tourism activities empowerment program on the active aging of Thai older adults

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ABSTRACT

Objective: This one-group quasi-experimental study aimed to examine the effectiveness of the Thai Traditional Health Tourism Activities Empowerment Program on the active aging of older adults in Phra Nakhon Si Ayutthaya Province, Thailand. **Methods:** This program included 52 older adults from 11 districts and involved the restructuring of the traditional Thai medicine building as well as a one-day training session on being a tour guide for local health tourism accompanied by a 20-page handbook. It also empowered them to use the Internet and regularly chat on the LINE application to help them participate in social activities for eight weeks as well as build a network for health tourism employment. Questionnaires on demographics and active aging were used. Data collected before program participation were compared with those obtained immediately, four weeks, and eight weeks after program completion through paired t-test and repeated-measures analysis of variance. **Results:** Mean active aging scores were statistically significantly higher after program participation than before ($p < 0.001$) and significantly increased eight weeks after program completion. Average incomes eight weeks after program completion showed a statistically significant increase. **Discussion:** The program offers some practical strategies for confronting challenges in knowledge and technology support during the aging process. This study provides strong evidence of the program's effectiveness. In conclusion, this program can improve active aging among older adults.

Key words:

work-related issue; health outcome; socioeconomic status; health promotion; travel-related health

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INTRODUCTION

The world is facing an aging society. In 2020, the aging population worldwide rapidly increased; out of the estimated global population of 7.795 billion, 1.050 billion are expected to be “older persons. Specifically, Thailand has become a “complete older-adult society,” experiencing a sustained increase in its older adult population in 2022. Since 2020, Thailand’s younger population has declined, while its older population has increased, and this trend is expected to continue until 2040. The number of people over age 60 will continue to increase by 4% per year, while that of people over age 80 will increase by 7% per year.^{1,2} The age of 60 may seem young in developing countries where major gains in life expectancy have already occurred and where most older people continue to be a vital resource to communities. Same-aged older people have displayed differences in health status, participation, and level of independence.

The World Health Organization³ (WHO) adopted the term “active aging” to describe the process of achieving the vision that longer life must entail continuing opportunities for health, social participation, and security. With regard to health, older adults should remain healthy and capable of managing their own lives or self-care as they age. For social participation, older adults should receive support for their full participation in socioeconomic, cultural, and spiritual activities according to their capacities, needs, and preferences. Regarding security,

older adults’ financial needs or incomes should be addressed to ensure their protection, dignity, and care.

Active aging allows older people to realize their potential for physical, social, and mental well-being so that they can participate in society according to their needs, desires, and capacities.³ A study on active aging in Thailand found that older adults’ active aging index was 0.685, which was at a moderate level, while their participation index was 0.502, which was the lowest.⁴ The overall active aging index of older adults in Phra Nakhon Si Ayutthaya Province was slightly higher than the national mean, which is 0.699, and their participation index was the lowest (0.390). Its score was ranked 72nd out of 77 provinces in Thailand.⁴ Active aging programs are crucial in allowing the older adults in this province to continue working according to their abilities and preferences as they age and to prevent or delay disabilities and chronic diseases that may prove costly to them, their families, and the healthcare system.

Active aging has various determinants encompassing individuals, families, and communities. Understanding the evidence on these factors can help design an appropriate program. The WHO³ suggested six determinants (Figure 1) that may provide an opportunity to enhance active aging. These are determinants associated with health and social services, behaviors, personal factors, the physical environment, the social environment, and economic aspects.³

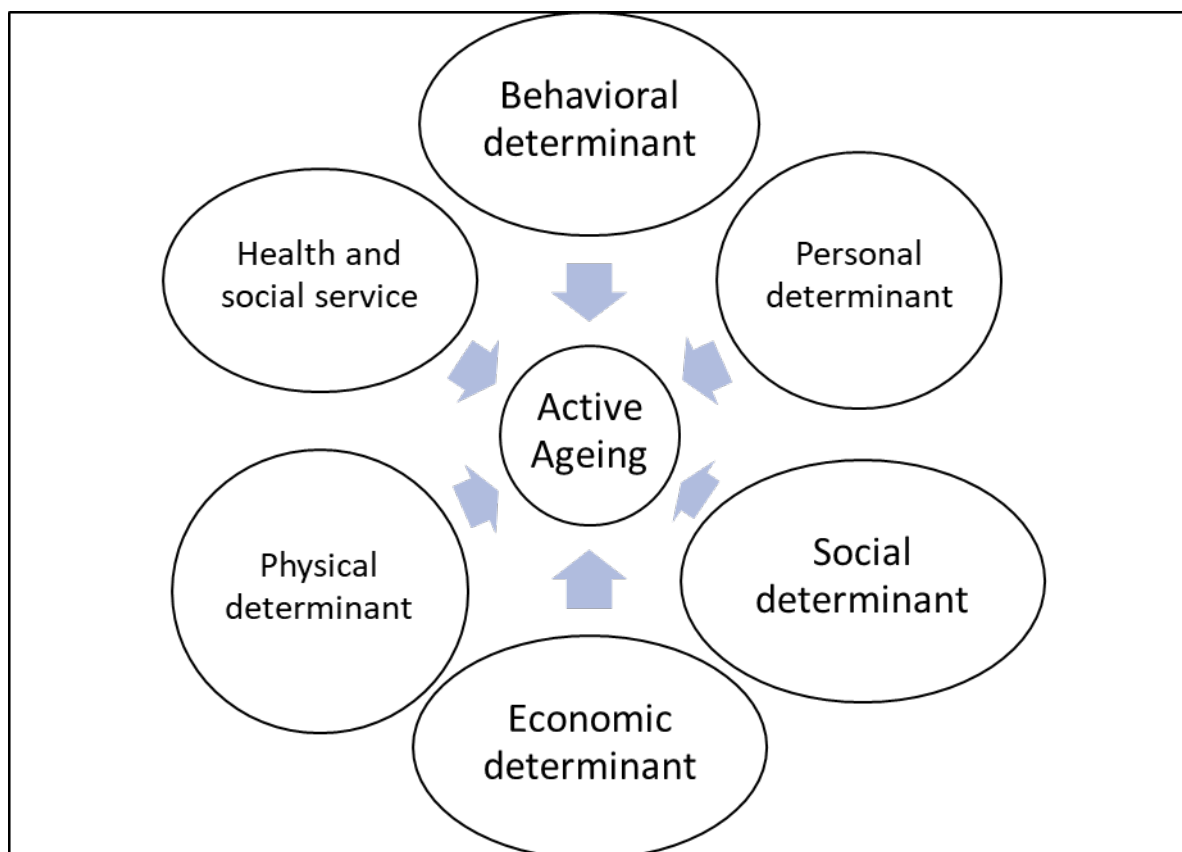


Figure 1. Conceptual diagram of active aging.³

Older adults experience a gradual functional decline resulting in a loss of adaptive response to stress and an increased risk of age-related diseases. To facilitate active aging according to the WHO's concept, we should consider the six determinants. Health and social services must be integrated. Providers must avoid age discrimination in their provisions; hence, people of all ages should be equally treated with dignity and respect. Older adults should adopt a healthy lifestyle in self-care, and the community should be a senior-friendly physical environment that can spell the difference between independence and dependence but is especially important for older people. Social support, opportunities for education, and lifelong learning are key factors in a social environment that enhances active aging. Moreover, income, work, and social protection are three aspects of the economic environment with a particularly significant

effect on active aging.³ The WHO also argued that the current discourse of active aging policies must focus more on lifelong learning. The active aging framework acknowledges that lifelong learning, along with formal education and literacy, is an important factor that facilitates participation, health, and security as people age.³

In the past, these determinants emphasized older persons' health and quality of life. While it is impossible to attribute direct causation to any one determinant, the substantial body of evidence on what determines health suggests that all these factors are good predictors of older people's wellness.³ So far, the research has clarified that these determinants affect the active aging process. We can design health services that apply these determinants for the better health and well-being of older people. Moreover, it is good to enhance these determinants to open "windows of

opportunity” for enhancing health, participation, and security to improve active aging.³

Consistent with the WHO framework, Kim et al.’s⁵ survey of older Korean adults found that education, income, community capacity, senior leisure welfare facilities, and cooperative unions are factors associated with active aging. Furthermore, Oktaviani, Hsu, and Chen⁶ assessed the effects of health-related behaviors and changes on successful aging among older Indonesian adults and revealed that the indicators for successful aging are the absence of chronic diseases, physical function difficulties, and depressive symptoms and intact cognitive function, social support, and social participation.

To support Thailand’s aging society, the government announced a 20-year national strategy for the country’s stability, prosperity, and sustainability with emphasis on the development of measures that allow older adults to continue their roles in society (e.g., participating in community and social activities). The Revenue Code on Revenue Exemption (No. 639) BE 2017 and the Department of Geriatric Affairs’ integrated support plan for the aging society help older adults gain employment.⁷

Health tourism is an expanding global phenomenon. Driven by high healthcare costs, a high rate of patients with chronic illness, and a lack of access to new therapies, many medical tourists (mainly from the United States, Canada, and Western Europe) often seek access to care in Asia, and Thailand is the fifth-ranked medical-health-wellness destination.⁸ Even before the COVID-19 pandemic, global tourism has been facing several crises. However, there is overwhelming evidence that the consequences of and recovery from the pandemic will be unprecedented. Health tourism has recently become increasingly popular. The world’s population needs rest and support both physically and mentally.⁹

A new and emerging trend in health tourism is that, besides tour services, tourists are interested in the accompanying experiences, emotions, and sensations when they travel (e.g., environmental benefits: clean air, favorable climate, etc.).⁸ This constitutes an opportunity to integrate the active aging concept and Thai traditional health tourism promotion to attract tourists. Thai traditional health tourism promotes a holistic traveling style that aims to develop, maintain, and improve the body–mind–spirit connection.¹⁰ Health tourism combines active leisure, prevention, and treatment and has become an important driver of rural areas.¹¹ Thai traditional health tourism is shaped by both tourism and Thai traditional healthcare, which value but have nearly been left behind by new technology.

Phra Nakhon Si Ayutthaya Province, which has been called Rajasthani Province for 417 years, has been recognized by UNESCO as a World Heritage Site since 1991. Most older adults in the province have knowledge of herbs and health-related tourist attractions in their own subdistricts or villages. Therefore, if this population is supported in their participation in health tourism activities, the outcomes might enhance active aging. This study aimed to examine the effectiveness of the Thai Traditional Health Tourism Activities Empowerment Program on the active aging of older residents in Phra Nakhon Si Ayutthaya Province, Thailand. We hypothesized that older adults can improve their active aging after participating in the abovementioned program.

METHODS

Study design

This study created a program using the WHO’s six determinants of active aging (Figure 1). For the health and social service

systems, this program integrates health services into health tourism and allows older adults to work as tour guides with no age limit. To promote behavioral determinants, the health tourism program includes healthy lifestyle measures in self-care. It also restructures the traditional Thai medicine building, which is part of health tourism, into a safe and friendly physical environment that supports older adults' opportunities for education and lifelong learning by providing a one-day educational program based on a 20-page handbook about tourism techniques, healthy self-care using traditional Thai herb eating and exercise, and the technology used for tour guiding, which was conducted by the research team. The program also empowers the aging population through regular chats on the LINE application to support their participation in social activities for eight weeks. Lastly, the program fosters the economic environment by promoting network building for health tourism work and increasing the participants' income. Income is derived from the sale of Thai traditional self-care products to resorts and hospitals, which is part of the Thai traditional health tourism network.

The active aging policy framework requires action on three basic pillars: health, social participation, and security. First, older adults should continue to be healthy and capable of managing their own lives or self-care as they age. Second, programs should support their full participation in socioeconomic, cultural, and spiritual activities according to their capacities, needs, and preferences. Third, older adults should continue to contribute productively to society in both paid and unpaid activities as they age; in addition, programs should address their need for financial support or income. An outcome of this research involves the measurement of active aging through these three pillars.

Regarding participant selection and procedure, this study referred to a similar

study by Davodi, Zendehtalab, Zare, and Behnam Vashani.¹² Sample size was calculated using G*Power software,¹³ and the hypothesis was tested using repeated-measures analysis of variance (ANOVA). Values for effect size, error, and power were 0.23, 0.05, and 0.95, respectively. The calculated sample size was 52, but we added 10% to account for participant loss during the study period; therefore, the total sample size was 58.

Through print and social media advertisements, we enrolled community-dwelling older adults from 11 elderly schools in Phra Nakhon Si Ayutthaya Province. A traditional Thai medicine doctor recruited these older adults, who scored 12 points or higher in activities of daily living (ADL), and they were screened according to the study's inclusion and exclusion criteria. The inclusion criteria were aged 60 years and above; owner of a mobile phone with Internet access; able to read, write, and communicate in the Thai language; and had no health problems. Meanwhile, exclusion criteria included the inability to participate in activities until the program's completion. A total of 58 older adults were eligible to participate.

We performed simple random sampling at an individual level. An independent researcher who was not involved in the treatment or assessments used the random-number function of Microsoft Excel to generate randomization sequences. The participants were then randomly assigned to study groups through random numbers without replacement by the traditional Thai medicine doctor. A total of five or six older adults per school were randomly assigned to the intervention group. Afterward, the participants provided their informed consent and completed the baseline assessments.

As for intervention, a quasi-experimental design was used in the Health Tourism Activities Empowerment Program, including an intervention and follow-up assessment for eight weeks. The

participants responded four times to the questionnaires about active aging: before program participation, immediately after participation, four weeks after participation, and eight weeks after participation.

Preparation phase

1. We held a meeting with all provincial executive directors to create a new healthcare system that integrates health tourism into health services.

2. We conducted a focus group discussion with a doctor of traditional Thai medicine to develop a new Thai traditional medicine service system and proceeded to restructure the traditional Thai medicine building into a safe and friendly physical environment.

Intervention phase (Health Tourism Activities Empowerment Program)

1. This involved a one-day training program that supported older adults' opportunities for education and lifelong learning. It was developed by the research team as a result of discussions with older adults regarding their potential development. The training program was based on a 20-page handbook and (1) how to be a health tourism guide in the province and (2) how to impart knowledge about healthy self-care using traditional Thai herb eating and exercise. Before training began, the researcher gave the participants a copy of the handbook.

2. These older adults received support from regular chats on the LINE application to help them participate in social activities for eight weeks. Their participation in social activities was monitored by sharing their activity information via the group chat on LINE twice a day, four days a week (Monday to Friday), for eight weeks.

3. With regard to network building, the program supported the participants' economic environment by building a network for their health tourism

work and increasing their income. To create a network in health tourism management, we held a meeting with the abovementioned provincial executive directors and made a commitment.

Ethics approval

This study was conducted under the Healthy City Project and received approval from an institutional review board. It also protected the participants' rights from data collection to research presentation. Moreover, this study was approved by the Ethical Review Committee for Human Research, Faculty of Nursing, Mahidol University, COA No. IRB.NSZOI9/5IZ. ZI08.

Measurements

The primary outcome was the use of technology for tour guiding, which was measured using a 10-item questionnaire with a 5-level rating scale from 0 (strongly disagree) to 4 (strongly agree). Total scores for technology use behavior were from 0 to 40, with higher scores demonstrating higher levels of technology use behavior. The Cronbach's alpha for this questionnaire was 0.94, indicating high internal validity.

The secondary outcome was active aging, which was composed of three pillars: social participation, health, and security. These were measured using a 21-item questionnaire with a Cronbach's coefficient of 0.881.

Social participation was assessed using a 10-item social activity participation questionnaire, which adopts the active aging index for Thai older adults from the National Statistical Office. This questionnaire has a four-level rating scale ranging from 1 (strongly disagree) to 4 (strongly agree), indicating the extent of participation. Final total scores ranged from 1 to 40, with higher scores signifying higher active aging levels in terms of participation. Five experts examined content validity

using a content validity index (CVI). Active aging improved based on the suggestions. The CVI was 0.86. The revised questionnaires were pretested by 30 older adults who were not participants in this study. The instrument's Cronbach's coefficient was 0.88.

Health was measured using a 10-item questionnaire focusing on self-care behaviors for good health using Thai teachings. This questionnaire has a five-level rating scale ranging from 1 (strongly disagree) to 5 (strongly agree) and describes the participants' active aging level in the aspect of self-care behaviors for good health following Thai tradition. Final total scores ranged between 5 and 50, and higher scores corresponded to a higher degree of active aging in the aspect of health. The scale's Cronbach's alpha was 0.92, indicating high internal validity.

Security was evaluated using one open-ended question regarding the participants' increase in income after program implementation.

Statistical analysis

Data were analyzed using SPSS for Windows. Personal data were examined using distribution of frequency, percentage, mean, and standard deviation (SD). Income and tour guiding technology were analyzed using paired t-test. Active aging was assessed using Friedman's repeated-measures ANOVA with a single-factor repeated-measure design at different time intervals.

RESULTS

This study involved 58 eligible older adults. However, 6 dropped out, leaving a total of 52 participants, of whom 33 were women (63.50%) and 28 were unemployed (53.80%). Furthermore, 20 had income sources from employment (38.46%), 19 depended on old-age allowance (36.53%), and 17 received pensions (32.69%). Additionally, 23 had

sufficient income but no savings (44.20%). Most of the participants had health problems, the most common being hypertension (42.30%) and diabetes (5.76%). Moreover, 29 inquired about health tourism via phone call (55.80%) and 19 via a LINE group chat (37.50%).

Among the three time points, the lowest mean score was for the use of tour guiding technology before program participation (30.3922, SD = 9.95606), and the highest was for four weeks after program completion (37.3585, SD = 6.75703).

Mean scores for active aging level among older adults were compared between three time points: before program participation, four weeks after the program, and eight weeks after the program. Results showed that the older adults in Phra Nakhon Si Ayutthaya Province increased their active aging levels at four and eight weeks after undergoing the program (week 4: 56.1154, SD = 8.21442; week 8: 56.1731, SD = 6.08025). In addition, active aging levels before and during participation in the social activity support program were significantly different (chi-square = 26.190, $p < 0.001$).

Moreover, the difference in mean scores for active aging before implementation and four weeks after implementation was -8.885 (SD = 1.818), with a statistical significance level of 0.01. Likewise, the difference in mean scores before implementation and eight weeks after implementation was -8.942 (SD = 1.665), with a statistical significance level of 0.01. Conversely, the difference between four and eight weeks after implementation was -0.058 (SD = 1.128), showing no statistical significance ($p = 1.0$).

Older adults' mean incomes were compared between two time points: before program participation and eight weeks after program participation. Results showed that the older adults in Phra Nakhon Si Ayutthaya Province increased their income eight weeks after undergoing the program (before implementation: 14876.2115, SD =

17606.81908; week 8: 14939.6154, SD = 17553.07536) (Table 3). In addition, their incomes before and after program

implementation were significantly different ($t = -2.518$, $p < 0.05$) (Table 1).

Table 1. Comparison of mean scores for active aging

Source	Type III sum of square	df	Mean square	F	Sig.	Partial eta square
Greenhouse– Geisser	19.637	2.219	8.851	4.918	0.007	0.086

Table 2. Comparison of mean scores for active aging before and after program implementation (Bonferroni test)

Mean scores	Mean difference	Std. error	p-value
Before implementation vs. 4 weeks after implementation	–8.885	1.818	0.000
8 weeks after implementation	–8.942	1.665	0.000
4 weeks after implementation vs. 8 weeks after implementation	–0.058	1.128	1.000

Table 3. Comparison of mean incomes before and after program implementation

Variable	Before implementation		8 weeks after implementation		t	p
	Mean	S.D.	Mean	S.D.		
Income	14876.2115	17606.81908	14939.6154	17553.07536	–2.518	0.015

DISCUSSION

The WHO defines active aging as a lifelong process shaped by social participation, respect and social inclusion, community support, and health services. The results showed that one must understand the determinants of the unique traditional Thai medicine, which was included in the design of the Thai Traditional Health Tourism Activities Empowerment Program, to improve active aging in Thailand. This is congruent with the WHO's³ six determinants/factors that may help enhance active aging: health and social service systems, behaviors, personal

factors, the physical environment, the social environment, and economic factors. All these can help in the design of an appropriate program that improves active aging. In Thailand, we have established the Thai Traditional Health Tourism Activities Empowerment Program to enrich active aging.

Our results showed the program's positive and significant effects on active aging among older adults, considering its low cost, convenience, applicability, and suitability with the traditional community. It addresses the social participation needs of the aging population and their educational demands in the fields of health and

technology use, thus further improving their active aging.

With respect to sustainability, this program was designed to restructure the Thai traditional medicine building, which is part of the country's health tourism, into a safe and friendly physical space. It also integrated health services and health tourism by discussing this issue in the province's policy with all the provincial executive directors as mentioned above. This result is consistent with the concept of active aging in that to promote active aging, health systems must adopt a new perspective that focuses on health promotion and equitable access to quality primary healthcare.³

The Thai Traditional Health Tourism Activities Empowerment Program supported the participants' opportunities for education and lifelong learning by implementing a one-day education program based on a 20-page handbook about tourist guide techniques, healthy self-care, and technology used for tour guiding. This program also empowered the older adults through regular chats on the LINE application to facilitate their involvement in social activities. The participants were monitored and encouraged to take part in social activities through the sharing of activity information via the group chat on LINE twice a day for four days a week (Monday to Friday) for eight weeks. The messages focused on supporting access to sources of information, working as a health tourism guide, and encouraging their participation in social activities. The program also enriched the economic environment by building a network for health tourism employment and increasing the participants' income despite the crisis faced by global tourism even before the COVID-19 pandemic. As predisposing factors, the knowledge and experience provided by this program are the fundamental factors that facilitate individual behaviors and generate motivation for the expression of such

behaviors, and they are useful for enhancing active aging.¹³ This result supports the WHO's active aging concept in that lifelong learning deserves more attention in the current discourse of active aging policies. The active aging framework acknowledges the importance of lifelong learning, along with formal education and literacy, in facilitating participation, health, and security as people grow older.³

To improve active aging, this study empowered the older adults to participate in social activities by designing tasks and creating a group chat on LINE. They received support through this application, allowing them to access information resources while taking part in a social activity support program. This is consistent with Green and Kreuter's model,¹³ which highlights the need for environmental influence to generate behaviors and consists of facilities and convenient access to services and resources. The older adults in Thailand showed that they worked well with technology usage.

This finding is in congruence with those of Ying-Chen Chi, Chen-Long Wu, and Hsiang-Te Liu,¹⁴ who investigated the efficacy of an intervention program for community-based older adults. The intervention included active aging concepts and preparation, physical activity, healthcare management, cognitive training, emotional awareness and coping skills, family relationships and resilience, and Internet use. Generalized estimating equation analysis revealed that the participants experienced significant improvements in active aging ($p < 0.001$). Another intervention, which was similar to that of Mendoza-Ruvalcaba and Arias-Merino,¹⁵ used a clinical trial design to strengthen active aging among healthy older adults over age 60. The program "I am active" promoted active aging via motivation and improvements in the participants' physical activity, nutrition, and cognitive function. Consequently, the intervention group achieved self-

sufficiency and a better quality of life. The above studies applied the WHO's active aging concept, which promotes determinants that increase active aging in older adults. These studies also used technology and provided education to improve both the physical and mental health of the participants.

In conclusion, the Thai Traditional Health Tourism Activities Empowerment Program significantly improved active aging among older adults in Phra Nakhon Si Ayutthaya Province, Thailand. It also offered some practical strategies for confronting challenges surrounding knowledge and technology support during aging. This study provided strong evidence of the program's effectiveness (increased active aging levels), which was achieved by supporting the participants' opportunities for education and lifelong learning, empowering them in their social participation, and supporting their economic environment. This study highlights economic sustainability through its restructuring of the Thai traditional medicine building, and the system focuses on the conservation of natural resources by supporting Thai teachings such as the use of Thai herbs instead of medication. Moreover, with regard to social sustainability, this research increases older adults' income through products focusing on Thai wisdom/services.

RECOMMENDATIONS

The healthy lifestyle proposed by the WHO for active aging can be achieved by considering determinants associated with health, security, and social participation. This study's intervention program could also be employed in similar communities. The implementation of a "Sustainability Education + Empowerment + Supporting = Doing" training for older adults from various communities for wider

dissemination is recommended. Moreover, health tourism in the post-COVID-19 era changed the way tourists behave. As safety is a main concern, hosts must guarantee a safe experience throughout tourists' stay.

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ETHICS STATEMENT

The study was conducted in accordance with the Declaration of the Faculty of nursing, Mahidol University and approved by the Institutional Review Board of all institutions involved.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study. Data Availability Statement: Data is unavailable due to privacy and ethical restrictions from Institutional Review Board (IRB) of Mahidol University, Thailand.

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CONFLICT-OF-INTEREST STATEMENT

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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