

## Biopsychosocial and Spiritual Nursing Instructional System Development in Cannabinoid Nursing with Interdisciplinary Science for Professional Nurses

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### Abstract

This research and development (R&D) study aimed to: (1) analyze the challenges and requirements for teaching biopsychosocial and spiritual nursing in cannabis science with an interdisciplinary approach for professional nurse curricula, termed “Cannabinoid nursing”; (2) examine senior professional nurses’ attitudes towards incorporating cannabinoid nursing into the nursing curriculum; (3) develop a cannabinoid nursing instructional system; and (4) evaluate the effectiveness of the developed cannabinoid nursing teaching program. Key findings include: Registered and senior professional nurses demonstrated limited knowledge and interest in cannabis, often perceiving it solely as a narcotic drug, with minimal understanding of cannabis poisoning care. Participants agreed that cannabinoid nursing should be integrated into the curriculum, specifically within palliative nursing care, and offered as continuing education post-graduation to align with international professional standards. An interdisciplinary approach to cannabinoid nursing education was developed, based on biopsychosocial and spiritual nursing principles, utilizing a seven-step educational model. A pilot study with 45 registered nurses and 1 dentist revealed a statistically significant increase in knowledge ( $p < 0.01$ ) following the training program. Participants reported improved attitudes towards cannabis, increased confidence, and greater awareness of its medical applications.

**Keywords:** Cannabinoid nursing, Biopsychosocial and spiritual nursing, Interdisciplinary Sciences

### Introduction

Cannabis has been utilized by humans for over ten millennia, serving various purposes including fiber production, nutrition, medication, and in some cultures, as a sacred plant. In recent years, the global perspective on cannabis has undergone significant shifts, particularly in the realm of medical applications. Thailand, with its rich history of traditional medicine and favorable geography for cannabis cultivation, stands at a crucial juncture in integrating cannabis into its healthcare system.

The discovery of the endocannabinoid system and the isolation of key compounds such as Cannabidiol (CBD) and Tetrahydrocannabinol (THC) by Professor

Raphael Mechoulam in 1963 marked a turning point in understanding cannabis’s potential medical benefits. This breakthrough has led to over 20,000 research papers on medical cannabis use, highlighting its potential in treating various conditions, particularly in palliative care and chronic disease management.

In Thailand, the legal status of cannabis has evolved from strict prohibition to gradual acceptance for medical use. This shift necessitates a comprehensive approach to education and training for healthcare professionals, particularly nurses who often serve as primary caregivers and first points of contact in both clinical and community settings.

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The concept of “Cannabinoid nursing” emerges as a critical area of study and practice, encompassing not only the physiological aspects of cannabis-based treatments but also the psychosocial and spiritual dimensions of patient care. This holistic approach aligns with the traditional Thai medical philosophy and the growing global trend towards integrative healthcare.

This study aims to address the gap in nursing education regarding cannabis, developing a structured instructional system that incorporates interdisciplinary knowledge and adheres to ethical and professional standards. By enhancing nurses’ competencies in cannabinoid care, we seek to improve patient outcomes, promote safe and effective use of medical cannabis, and contribute to the broader discourse on cannabis in healthcare and society.

### Historical Context of Cannabis Use:

The use of cannabis in human civilization dates back to ancient times. In Thailand, cannabis has been an integral part of traditional medicine and cultural practices for centuries. The plant, known locally as “ganja,” was used in cooking, recreation, and as a source of fiber for textiles. More importantly, it played a significant role in Thai traditional medicine, where it was used to treat various ailments.

Interestingly, the biography of Lord Buddha mentions the use of a medicine called “Paisali,” which contained cannabis as one of its 30 components. This medicine, prepared by Phra Ananda under the guidance of Doctor Jivaka Komarabhacca, was used to treat epidemics in Vaishali Bihar. This historical context underscores the deep-rooted presence of cannabis in Thai culture and medicine.

However, the 20th century saw a global shift in cannabis perception and legislation. The United States, under President Richard Nixon, spearheaded a campaign that portrayed cannabis as a dangerous substance, leading to its classification as a narcotic drug. This influenced international policy, resulting in the United Nations issuing four international treaties to prevent cannabis use. Consequently, Thailand enacted the Narcotics Act B.E. 2522 (1979), which classified cannabis as a narcotic and prohibited its cultivation and use.

This period, often referred to as “The dark era of cannabis,” saw the plant’s reputation tarnished, with society viewing it as harmful and detrimental. The term “marijuana” was replaced with “cannabis” in an attempt to distance the plant from its negative connotations.

### The Modern Era of Cannabis Research:

The modern era of cannabis research began in 1963 when Israeli Professor Raphael Mechoulam discovered two crucial compounds in cannabis: Cannabidiol (CBD) and Tetrahydrocannabinol (THC). This breakthrough led to the identification of the endocannabinoid system in mammals, a discovery that revolutionized our understanding of cannabis’s potential medical applications.

Mechoulam’s research revealed that cannabinoids could potentially replace or supplement important substances in mammals, particularly in cases of illness or age-related degeneration. This discovery marked a turning point in the global perception of cannabis, shifting focus towards its potential therapeutic benefits.

The ensuing decades saw a surge in cannabis research, with over 20,000 papers published on the medical applications of cannabis. Professor Mechoulam’s contributions earned him the title “father of modern medical cannabis” and a Nobel Prize nomination.

### Cannabis Situation in Thailand:

Thailand’s relationship with cannabis has been complex and evolving. Despite the traditional use of cannabis in Thai culture and medicine, the 1979 Narcotics Act effectively banned its cultivation and use, even for medical purposes. This prohibition significantly impacted traditional Thai medicine practices that had historically incorporated cannabis.

Recent years have seen a gradual relaxation of cannabis laws in Thailand. The government has begun to recognize the potential medical and economic benefits of cannabis. In 2018, Thailand became the first Southeast Asian country to legalize medical cannabis, marking a significant shift in policy.

Currently, Thailand is in a transitional phase. While medical use of cannabis is now permitted under state control, the extent of personal cultivation and use remains a topic of debate. The government is working on legislation to balance the medical benefits of cannabis with measures to prevent misuse and protect public health.

One unique aspect of Thailand's approach is the "Special Access Scheme" (SAS), which allows Thai traditional medicine practitioners to create personalized cannabis-based treatments for individual patients. This scheme represents a blend of traditional wisdom with modern medical practices.

The Thai government's efforts to legalize cannabis for medical use while protecting society from misuse highlight the complexities of integrating cannabis into the healthcare system. These efforts are particularly crucial given the empirical evidence supporting the efficacy of Thai cannabis strains in treating various conditions, especially in palliative care for terminal illnesses.

### Medical Cannabis and Registered Nurses in Thailand:

Registered nurses form the largest group among the eight recognized public health professions in Thai-

land. They play a crucial role in providing holistic care, encompassing physical, mental, social, and spiritual aspects of health – a concept known as Biopsychosocial and Spiritual Nursing.

The evolving cannabis landscape in Thailand presents both challenges and opportunities for the nursing profession. Nurses are often the first point of contact for patients in both hospital and community settings, making their role in cannabis-related care particularly significant. They may encounter patients affected by improper cannabis use or those using cannabis for medical purposes.

Currently, the Thai Ministry of Public Health does not legally permit registered nurses to prescribe or administer cannabis-based treatments. However, nurses have an ethical obligation to provide immediate care to individuals experiencing cannabis-related issues, regardless of the legal status of the substance.

The concept of "Cannabinoid nursing" emerges as a response to this evolving healthcare landscape. It encompasses the knowledge and skills necessary for nurses to provide competent care related to cannabis use, whether for medical purposes or in cases of misuse. This specialized area of nursing aligns with the philosophy of "Life over the law," emphasizing the primacy of patient care and well-being.

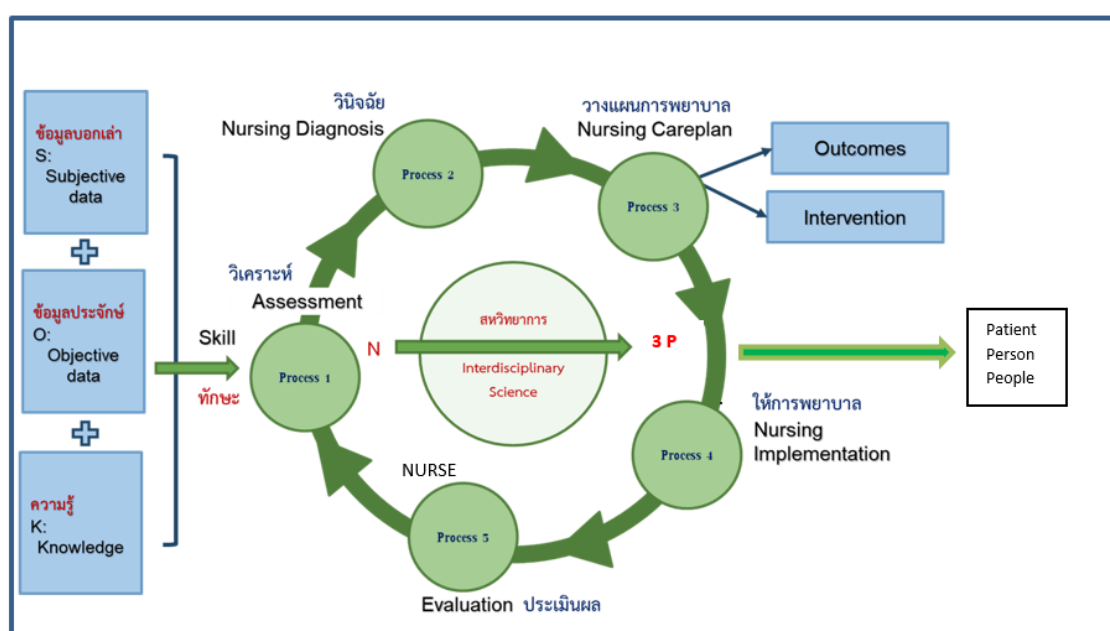


Figure 1. New Nursing Process Development Model

Source: Developed from presentation template of Rapiphan Upakarn "Nursing Process + Quality Recording" PSI.Mahidol.ac.th/division/nursing/NDivision/N.QD admin/download/files/111721 pdf. Retrieved on 25 May 2023

## Interdisciplinary Science in Cannabinoid

### Nursing:

Interdisciplinary science, which integrates knowledge and expertise from multiple disciplines, is particularly relevant to cannabinoid nursing. This approach is crucial because:

Cannabis affects multiple body systems, requiring knowledge from biology, pharmacology, and psychology.

The legal and social aspects of cannabis use necessitate understanding of law, sociology, and public health.

The integration of cannabis into healthcare involves aspects of traditional medicine, modern medicine, and emerging research.

### Key elements of interdisciplinary science in cannabinoid nursing include:

Combination of Disciplines: Integrating knowledge from biology, chemistry, psychology, and social sciences to address the complex issues surrounding cannabis use in healthcare.

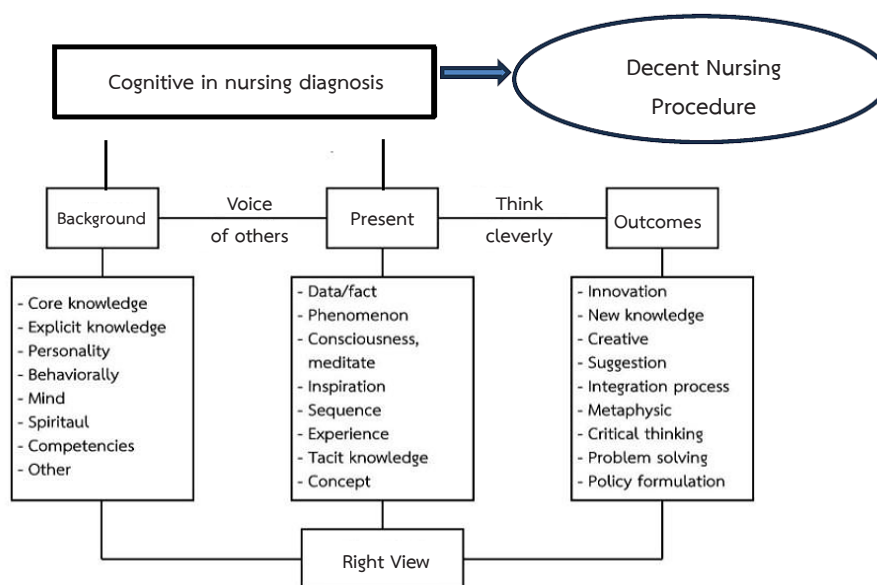


Figure 1. Fundamental factors of cognitive development in nursing diagnosis

Source: Developed from Thichaluck Narongvit, 2019, Model of Interdisciplinary Approach in the Legislative Process of Thailand, Ph.D. in Interdisciplinary Science, Bodhisatva University, Florida. USA. P.26 Retrieved on 25 May 2023

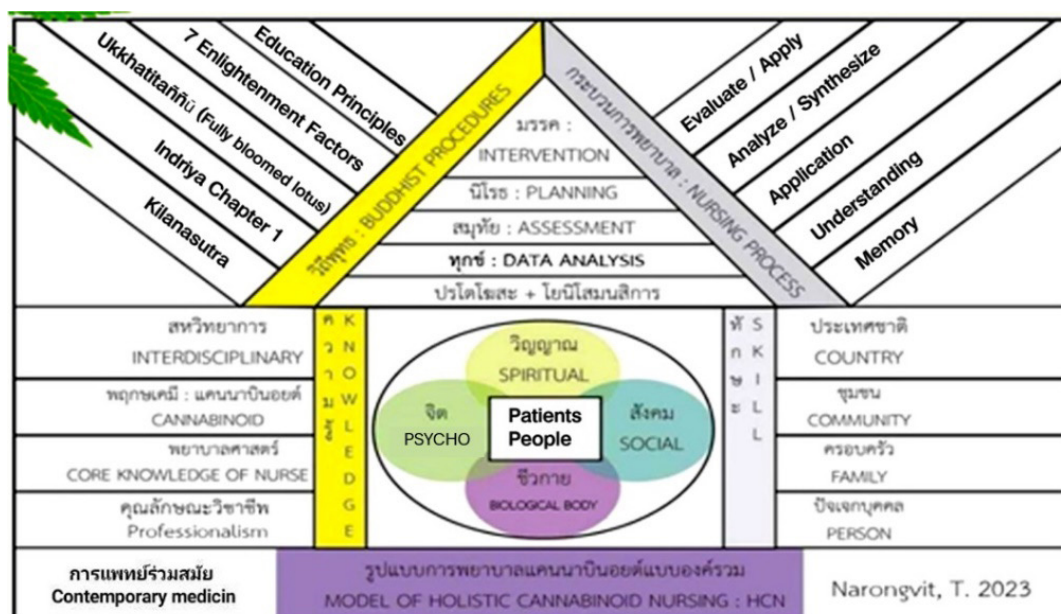


Figure 3. Interdisciplinary system as a conceptual framework for the development of cannabinoid nursing subject

**Collaboration:** Encouraging cooperation among professionals from different fields, including nurses, doctors, pharmacists, and researchers.

**Multiple Perspectives:** Incorporating various theoretical frameworks and approaches to provide a comprehensive understanding of cannabis in healthcare.

**Problem-Solving:** Addressing complex issues related to cannabis use that cannot be solved by one discipline alone.

**Educational Approach:** Fostering cognitive flexibility and critical thinking skills in nursing education to prepare nurses for the complexities of cannabis-related care.

### **Methodology:**

This study employed a mixed-methods research design, combining quantitative and qualitative approaches to achieve a comprehensive understanding of the research objectives.

A questionnaire (Google form) was distributed to 300 registered nurses.

In-depth interviews were conducted with 12 senior nurses.

### **Curriculum Development:**

Based on the needs assessment and literature review, a cannabinoid nursing curriculum was developed.

The curriculum incorporated principles of biopsychosocial and spiritual nursing, as well as interdisciplinary approaches.

### **Instructional System Development:**

A seven-step model for developing the instructional system was employed, based on the work of Chaoyong Phromwong (2013).

### **Effectiveness Testing:**

The developed curriculum was piloted with a sample group of 45 registered nurses and 1 dentist.

Pre- and post-tests were conducted to assess knowledge gain.

Interviews were conducted post-training to gather qualitative feedback.

### **Additional Information:**

- The increase in scores from pre-test to post-test was statistically significant ( $p < 0.01$ ).

- The pre-test average score indicates a baseline knowledge level of approximately 45.2% (13.57/30).

- The post-test average score shows an improvement to approximately 95.9% (28.78/30) after the training program.

This table clearly demonstrates the effectiveness of the cannabinoid nursing curriculum in improving participants' knowledge. The substantial increase in average scores (from 13.57 to 28.78) suggests that the educational program was highly successful in enhancing understanding of cannabinoid nursing concepts among healthcare professionals.

### **The analysis of questionnaires and in-depth interviews revealed:**

- A general lack of knowledge and interest in cannabis among registered and senior nurses.

- A prevailing belief that cannabis is primarily a narcotic drug.

- Limited understanding of nursing care for cannabis poisoning.

- Agreement that cannabinoid nursing should be included in the curriculum, particularly within palliative nursing care.

- Support for continuing education in cannabinoid nursing post-graduation.

- A belief that cannabis should be used as a medicinal plant in conjunction with current medical treatments.

- Support for legal licensing of nurses to use cannabis within the scope of their profession, based on international professional standards.

### **Curriculum Development:**

The developed curriculum for cannabinoid nursing incorporated:

### **Biopsychosocial and spiritual nursing principles.**

Interdisciplinary approaches, integrating knowledge from biology, pharmacology, psychology, and social sciences.

A focus on both acute care (hospital settings) and ambulatory care (community settings).

Expansion of the traditional nursing process to include care for Patients (P1), People with good health (P2), and People in society (P3).

Instructional System Development:

The seven-step model for developing the instructional system included:

1. Studying knowledge about the instructional system
2. Evaluating the needs of the instructional system
3. Developing a conceptual framework
4. Seeking expert opinions
5. Drafting a teaching prototype
6. Evaluating efficiency
7. Improving and proposing a complete report

This process resulted in a comprehensive cannabinoid nursing course that integrated interdisciplinary approaches and addressed the holistic aspects of patient care.

Effectiveness Testing:

The pilot study with 46 participants (45 nurses and 1 dentist) showed:

A statistically significant increase in knowledge scores from pre-test to post-test ( $p<0.01$ ).

Pre-test average score: 13.57 out of 30 ; Post-test average score: 28.78 out of 30

Qualitative feedback indicated positive changes in attitudes towards cannabis, increased confidence in dealing with cannabis-related issues, and greater awareness of the medical applications of cannabis.

Discussion:

The findings of this study highlight several important aspects of integrating cannabinoid nursing into professional nursing education and practice in Thailand:

Knowledge Gap: The initial lack of knowledge and interest in cannabis among nurses underscores the need for comprehensive education in this area. This gap likely stems from the historical stigma associated with cannabis and its long-standing illegal status.

Attitude Shift: The positive change in attitudes following the training program suggests that education can effectively address misconceptions and foster a more nuanced understanding of cannabis in healthcare.

Curriculum Integration: The support for including cannabinoid nursing in palliative care education aligns with global trends recognizing the potential of cannabis in managing symptoms associated with terminal illnesses and chronic conditions.

Interdisciplinary Approach: The success of the interdisciplinary model in developing the cannabinoid nursing curriculum demonstrates the importance of a

Table 1.

1. Comparison of scores before and after teaching

Table. 1 Comparison of pre- and post-test scores

Testing	Mean	N	Std. Deviation	Std. Error Mean	Correlation	Sig
Before training	13.57	46	5.830	.860	.253	
After training	28.78	46	4.930	.727		0.008

P< 0.01

Table 1: Pre-test and Post-test Scores for Cannabinoid Nursing Curriculum

Test Type	Number of Participants	Average Score	Maximum Possible Score
Pre-test	46	13.57	30
Post-test	46	28.78	30

Note: The sample consisted of 45 registered nurses and 1 dentist.



holistic, multi-faceted approach to this complex topic.

**Legal and Ethical Considerations:** The study highlights the need for clear legal frameworks that allow nurses to engage in cannabis-related care within their professional scope, balancing patient needs with regulatory requirements.

**Continuing Education:** The emphasis on post-graduation training reflects the rapidly evolving nature of cannabis research and policy, necessitating ongoing professional development.

**Holistic Care Model:** The expansion of the nursing process to include community care (P3) alongside patient care (P1) and health promotion (P2) represents a progressive approach to cannabinoid nursing that acknowledges its broader societal impacts.

**Cultural Context:** The integration of traditional Thai medical knowledge with modern cannabis science presents a unique opportunity for Thailand to develop a culturally relevant and scientifically sound approach to cannabinoid nursing.

### **Implications for Nursing Practice and Education:**

**Curriculum Reform:** Nursing schools in Thailand should consider incorporating cannabinoid nursing into their curricula, particularly within palliative care and pharmacology courses.

**Professional Development:** Healthcare institutions should provide continuing education opportunities in cannabinoid nursing for practicing nurses.

**Policy Advocacy:** Nursing organizations can use these findings to advocate for clearer legal frameworks that support nurses' involvement in cannabis-related care.

**Research Promotion:** The positive outcomes of this study should encourage further research into the applications of cannabis in nursing care and its effects on patient outcomes.

**Interdisciplinary Collaboration:** Nursing education and practice should foster greater collaboration with other healthcare disciplines to provide comprehensive cannabis-related care.

**Public Education:** Nurses can play a crucial role in educating the public about the medical applications and potential risks of cannabis use.

**Ethical Guidelines:** Professional nursing bodies should develop clear ethical guidelines for nurses engaging in cannabinoid nursing.

### **Limitations and Future Research:**

While this study provides valuable insights, several limitations should be noted:

**Sample Size:** The relatively small sample size for the effectiveness testing (46 participants) may limit the generalizability of the results.

**Geographic Scope:** The study was conducted in Thailand, and its findings may not be directly applicable to other cultural or legal contexts.

**Long-term Impact:** The study did not assess the long-term retention of knowledge or changes in practice. Future research should include longitudinal studies to evaluate the sustained impact of cannabinoid nursing education.

**Patient Outcomes:** This study focused on nursing education and did not directly measure the impact on patient care. Future research should investigate how improved cannabinoid nursing knowledge translates to patient outcomes.

**Specific Population Focus:** The study did not differentiate between nurses working in different specialties or settings. Future research could explore how cannabinoid nursing education might be tailored for specific nursing roles or patient populations.

### **Future research directions could include:**

Comparative studies of different educational approaches to cannabinoid nursing.

Investigation of patient perceptions and experiences with nurses trained in cannabinoid care.

Exploration of the integration of cannabinoid nursing in various healthcare settings (e.g., oncology, pain management, mental health).

Assessment of the economic impact of incorporating cannabinoid nursing into healthcare systems.

Cross-cultural studies to compare approaches to cannabinoid nursing education and practice in different countries.

The researcher tested the cannabinoid nursing teaching subject developed and taught to a sample group of 46 registered nurses (one dentist). It was found

that the score of knowledge for pre- and post-teaching in the sample group had significantly increased at a level of 0.01, as shown in

From an overall score of 30 points, before the test, the sample group had an average score of 13.5-17 points and after the training, the average score increased to 28.78 points. Meanwhile, the Paired t-test (2 tailed) confirmed that the learning outcomes of the cannabinoid nursing course increased significantly as shown in Table 2.

### Statistical Findings:

1. The study conducted a pre-test and post-test evaluation of the cannabinoid nursing course with 46 participants (45 nurses and 1 dentist).

2. Table 2 shows the results of a paired t-test comparing scores before and after training:

- Mean difference: 10.217
- Standard Deviation: 6.613
- Standard Error Mean: 0.975
- t-value: 10.479
- Degrees of freedom (df): 45
- Significance (2-tailed): 0.000

3. The significance level ( $p < 0.001$ ) indicates a statistically significant improvement in test scores after the training.

4. The large t-value (10.479) suggests a substantial effect size, indicating that the improvement in scores was not only statistically significant but also practically meaningful.

**Qualitative Findings: Post-training interviews revealed that most participants:**

- Gained new knowledge about cannabis
- Experienced a positive shift in their attitudes towards cannabis
- Showed increased interest in staying informed about cannabis-related innovations

### Conclusion:

1. Effectiveness of the Curriculum: The statistically significant improvement in test scores demonstrates the effectiveness of the developed cannabinoid nursing curriculum. The large effect size suggests that the training had a substantial impact on participants' knowledge.

2. Attitude Change: The qualitative findings complement the quantitative results, indicating that the curriculum not only improved knowledge but also positively influenced attitudes towards cannabis in healthcare.

3. Addressing Knowledge Gaps: The study successfully addressed a critical gap in nursing education regarding cannabis, providing a model for integrating cannabinoid nursing into professional practice.

4. Holistic Approach: The interdisciplinary, biopsychosocial, and spiritual approach of the curriculum aligns well with both modern healthcare needs and traditional Thai medical philosophies.

5. Broader Implications: This research provides a foundation for equipping nurses with the necessary knowledge and skills for safe, effective, and ethical care in the evolving landscape of medical cannabis use.

6. Global Relevance: The insights from this study offer valuable guidance for other countries considering the integration of cannabis into their healthcare systems, emphasizing the importance of combining scientific knowledge with cultural sensitivity and ethical considerations.

*In conclusion, this study presents strong evidence for the efficacy of a structured, interdisciplinary approach to cannabinoid nursing education. It demonstrates that targeted education can significantly improve both knowledge and attitudes among healthcare professionals, potentially leading to better patient care and more informed public health strategies regarding medical cannabis use.*

### Summary

This research focuses on developing an instructional system for biopsychosocial and spiritual nursing, integrating cannabis science and interdisciplinary approaches for professional nurses. The study employs a research and development (R&D) methodology, combining quantitative data from questionnaires completed by 300 registered nurses and qualitative insights from interviews with 12 senior nurses. Additionally, a thorough literature review was conducted to analyze various data systems, utilizing interdisciplinary principles to guide a wisdom-based approach. The findings were then used to develop a prototype instructional model for



cannabinoid nursing, which involved a seven-step process to create a teaching package. This process builds upon the work of Professor Dr. Chaiyong Phromwong (2013), allowing the researcher to design a comprehensive system that serves as a conceptual framework for a cannabinoid nursing curriculum, encompassing holistic care.

This curriculum expands the role of nurses in delivering care to hospital patients, communities, and society, aligning healthcare practices with global advancements in medical science. In Thailand, the unique geography supports the cultivation of cannabis strains with high pharmacological efficacy, and traditional Thai medicine, with its long-standing cannabis-based practices, is well-positioned to be integrated into modern healthcare. This integration is particularly relevant should Section 55 of the B.E. 2560 Constitution of the Kingdom of Thailand be implemented, which would further legitimize the use of cannabis in medical settings.

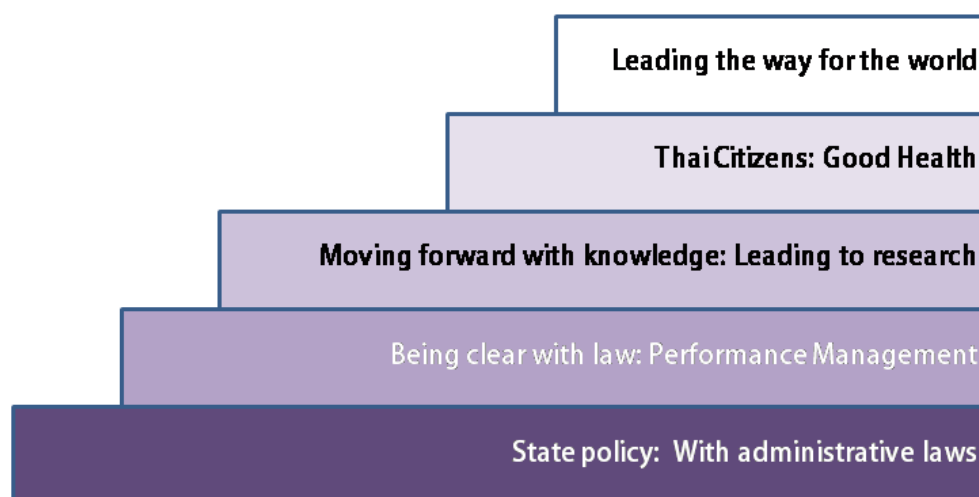
The broader benefits of this research include enhancing the competencies of registered nurses to provide care for patients and the general public using cannabis. The study also aims to shift societal perceptions of cannabis from viewing it solely as harmful to recognizing it as a medicinal herb with the potential to treat diseases that current therapies cannot cure. Cannabis could become an effective second-line or alternative treatment, particularly in severe or chronic conditions, and its role as a “survival medicine” warrants

further exploration. The findings from this study may also inform the development of future laws on medical cannabis, ensuring that society and the nation benefit from its therapeutic potential.

In conclusion, the researcher proposes adding a cannabinoid nursing course to professional nursing curricula, along with providing additional training for registered nurses who care for patients. A conceptual framework for standardized teaching packages is recommended, ensuring all nurses can deliver safe and high-quality care. This approach will ultimately benefit citizens by improving the quality of nursing services in the future.

**Recommendation:** The administration of medical cannabis in Thailand should be governed by clear policies and laws, as Thailand operates under the rule of law. Proper regulation will not only safeguard public health but also contribute to positive economic and social outcomes. Figure 4 illustrates the developmental steps and goals of “Medical Cannabis in Thailand.”

*In the current global and Thai societal context, there remains a lack of knowledge and understanding regarding the benefits of medical cannabis, with most attention focused on its potential harmful effects. However, if managed appropriately—through proper laws, regulations, and, most importantly, social integration tailored to each country’s unique context—medical cannabis has the potential to significantly improve public health, aligned with individual physical needs.*



**Figure 4.** Sequence of step in the development of medical cannabis in Thailand.

*Through the application of the PICO model, an empirical research framework, studies can be conducted to evaluate the efficacy of cannabis treatments compared to conventional medicine. The results could underscore the therapeutic value of cannabis. The researcher would like to conclude with the sentiment that “Life is more than law.” Additionally, the valuable physiological properties of cannabis could inspire a global appreciation, affirming the belief held by some that “God has given this plant to all mankind.”*

## References

- Atsanakornchai, S., Thaikla, K., & Farbitalae, M. (2021). Monitoring the situation of medical cannabis use and service, phase 2 (data collection during December 2020 - February 2021). Centre for Addiction Studies (CADS) in collaboration with the Thai Health Promotion Foundation (ThaiHealth).
- Bloom, B.S. (1982). Taxonomy of educational objectives, the classification of educational goals – Handbook: Cognitive domain. New York: Makay.
- Boonchuea, K. (2015). Good governance and public health in Thailand. Proceedings of the 6th National Medical Academic Conference. Department of Medical Services, Ministry of Public Health.
- Chiawiriyabunya, I., et al. (2019). Concurrent cannabinoid therapy “Cannabis helps treat cancer”. Samut Prakan: Srib00n Computer-Printing Co., Ltd.
- Cronbach, L. J. (2001). Essentials of psychological testing (4th ed.). New York: Harper & Row.
- Greenwood, E. (1966). The elements of professionalization. Englewood Cliffs, NJ: Prentice Hall.
- Gamhom Nalanchang, 2022”International Cannabis witch, Bangkok : Happy Bok Publisher
- Hathakit, U., & Thanoi, W. (2012). Holistic nursing and health care: Integrating concepts into nursing education. Journal of Nursing Council, 27(Special Issue), 1-10.
- Health Systems Research Institute. (2021). Research on the impact assessment of medical cannabis policy in Thailand, Phase 1 (Research Report). Ministry of Public Health.
- Kesomboon, P. (2018). Cannabis for medical treatment. Faculty of Medicine, Khon Kaen University.
- Methadilokkul, O. (Ed.). (2018). Cannabinoid medicine and cannabis. Nonthaburi: Printing House of the Association of Occupational and Environmental Medicine of Thailand.
- Moore, W. E. (1970). The professions: Roles and rules. New York: Russell Sage Foundation.
- Narongvit, T. (2022). Cannabis, the world’s “magic medicine”. Bangkok: P.N.K. & Sky Printing Co., Ltd.
- Narongvit, T., & Thawornchaisit, P. (2016). Concept and theory of interdisciplinary for Thailand development: From research to implementation. Proceedings of the 6th International Congress on Interdisciplinary Research and Development for Sustainability. Impact Forum, Muang Thong – Thani, Thailand.
- Narongvit, T., (2019). Model of Interdisciplinary approach in The Legislative process of Thailand. Dissertation , doctoral degree of Philosophy in interdisciplinary science. Bodhisatva University, Florida state, United State America.
- Narongvit, T., et al. (2021). The Cannabis Science and Social Sustainability International Conference (CASSI 2021). Saraphi Dis, Chiang Mai, Thailand.
- Parsons, T. (1968). Profession. International Encyclopedia of Social Science, 12, 536-537.
- Phromwong, C. (2013). Instructional system development. Bangkok: Chulalongkorn University Press.
- Pitiporn, S. (2018). Special edition of the record of lands: Complete Siam cannabis, continuing from the past to the future. Bangkok: Printing House of the Association of Chao Phraya Abhaibhubejhr.
- Puaphongphan, P. (2012, October 12). Exploring the textbooks of healing in the Buddha’s era according to the Tripitaka. MGR Online, Baan Phra Arthit.
- Somdet Phra Nyanasamvara. (2013). The right view: According to the explanation of Phra Sariputta Thera (1st ed.). Nonthaburi: Panyachat Books Pittaya Binding Co., Ltd.

- Suphanchaimat, R., & Phawasuthipaisit, C. (2018). The benefits and harms that may occur from cannabis in medicine and the liberalization of cannabis use. Health Systems Research Institute (HSRI).
- Tiaamrung, N. (2021). Production and utilization of marijuana (Research Report). Biotechnology Program, Institute of Agricultural Technology, Suranaree University of Technology.
- United Nations Office on Drugs and Crime. (2009). Recommended methods for the identification and analysis of cannabis and cannabis products. Vienna: UNODC.
- Upakon R. (2023) "Nursing Process Recording"
- PSI. Mahidol.ac.th/division/Ndivision/N.ODadmin/downloadfile/111721PDF.retrived on Sep 2024
- Wongsuwan, N. (2021). Buddhist ways and social studies teaching. Teaching documents for the Master of Education Program, Social Studies Teaching Major. Phra Nakhon Si Ayutthaya: Faculty of Education, Mahachulalongkornrajavidyalaya University.