PCFM Vol 7 No. 3 Jul-Sep 2024: 241-251.

นิพนธ์ต้นฉบับ

# บทบาทของแพทย์เวชศาสตร์ครอบครัวไทยต่อการพัฒนาการดูแลประคับประคองในช่วง 2 ทศวรรษ

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Received: August 7, 2024;
Revised: August 17, 2024;
Accepted: September 5

## บทคัดย่อ

**ที่มา:** การดูแลประคับประคองในประเทศไทยเริ่มต้นและพัฒนาอย่างต่อเนื่องในระยะเวลา 2 ทศวรรษ โดยมีแพทย์เวชศาสตร์ครอบครัวไทยจำนวนมากให้การกำกับดูแลทั้งในโรงพยาบาลและชุมชน แต่ยังมีหลักฐานทางวิชาการไม่มากนักที่แสดงถึงบทบาทดังกล่าว การวิจัยนี้จึงมีวัตถุประสงค์เพื่อ 1) ทบทวนงานวิจัยด้านการดูแลประคับประคองที่ดำเนินการโดยแพทย์เวชศาสตร์ครอบครัวไทย 2) จำแนกงานวิจัยดังกล่าวตามหมวดของตัวแบบทางสาธารณสุขเพื่อการพัฒนาการดูแลประคับประคอง และ 3) ระบุเนื้อหาหลักของงานวิจัยดังกล่าว

**รูปแบบการวิจัย:** การทบทวนวรรณกรรมแบบกำหนดขอบเขต

**วัสดุและวิธีการ:** ค้นหางานวิจัยที่อาจเกี่ยวข้องกับการดูแลประคับประคองและดำเนินการโดยแพทย์เวชศาสตร์ครอบครัวไทยด้วยฐานข้อมูลทางวิชาการ “Famscholar” ระหว่างเดือนพฤศจิกายน พ.ศ. 2566 โดยใช้คำค้นหาที่เกี่ยวข้องกับการดูแลประคับประคอง จากนั้นผู้วิจัย 3 ท่านดำเนินการอ่านบทคัดย่อและงานวิจัยฉบับเต็มอย่างเป็นอิสระต่อกันเพื่อคัดแยกงานวิจัยด้านการดูแลประคับประคองและจำแนกงานวิจัยตามหมวดและเนื้อหาหลัก

**ผลการศึกษา:** พบงานวิจัยที่อาจเกี่ยวข้องกับการดูแลประคับประคองจำนวน 454 ฉบับ หลังผ่านการอ่านบทคัดย่อและงานวิจัยฉบับเต็มแล้ว พบงานวิจัยด้านการดูแลประคับประคองโดยการมีส่วนร่วมของแพทย์เวชศาสตร์ครอบครัวไทยที่ผ่านเกณฑ์ 81 เรื่องซึ่งมีแนวโน้มเพิ่มขึ้นเรื่อย ๆ โดยเฉพาะช่วงปี พ.ศ. 2564-2566 งานวิจัยส่วนใหญ่ถูกจัดในหมวดการปฏิบัติ (ร้อยละ 90) และดำเนินการในสถานพยาบาลเป็นหลัก (ร้อยละ 75.31) ส่วนใหญ่ใช้การศึกษาแบบภาคตัดขวางหรือแบบตามรุ่น โดยทำในผู้ป่วยมะเร็งเป็นส่วนใหญ่ (ร้อยละ 39.51) เนื้อหาหลักเป็นเรื่องเกี่ยวข้องกับชีววิทยาทางการแพทย์ โดยการศึกษาเรื่องการพยากรณ์โรค การเข้าถึงบริการและการจัดการอาการคิดเป็นร้อยละ 16, 14 และ 11 ตามลำดับ พบการวิจัยเรื่องการดูแลทางจิตวิญญาณ การดูแลความเศร้าโศกจากการสูญเสีย การสื่อสาร การศึกษาและความมีส่วนร่วมของชุมชนเป็นจำนวนน้อย

**สรุป:** แพทย์เวชศาสตร์ครอบครัวไทยมีส่วนร่วมต่อการพัฒนาการดูแลประคับประคอง โดยเฉพาะทางด้านการปฏิบัติและชีววิทยาทางการแพทย์ ราชวิทยาลัยแพทย์เวชศาสตร์ครอบครัวแห่งประเทศไทยมีส่วนสำคัญต่อการพัฒนาเหล่านี้ ช่องว่างทางความรู้ที่สำคัญคือการดูแลทางจิตวิญญาณ การดูแลความเศร้าโศกจากการสูญเสีย การสื่อสาร การศึกษาและการดูแลประคับประคองในชุมชน

**คำสำคัญ:** การดูแลประคับประคอง แพทย์เวชศาสตร์ครอบครัวไทย การพัฒนาการดูแลประคับประคอง

PCFM PCFM Vol 7 No. 3 Jul-Sep 2024: 241-251.

ORIGINAL ARTICLE

# Contribution of Thai Family Physicians to Palliative Care Development in Two Decades: A Scoping Review

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Received: August 7, 2024;
Revised: August 17, 2024;
Accepted: September 5, 2024

## ABSTRACT

**Background:** Palliative care was established and progressed gradually in Thailand over the past two decades. Several Thai Family Physicians supervised palliative care in hospitals and the community. However, there is limited evidence of Thai Family Physicians' contribution to palliative care. This study aims to 1) examine evidence of palliative care research conducted by Thai Family Physicians; 2) categorize the related studies by public health model for palliative care development, and 3) identify the research themes.

**Design:** A scoping review

**Methods:** Potential studies were searched in November 2023 via "Famscholar", an academic database, using palliative care-related search terms. Three researchers independently read abstracts and full articles to extract eligible studies. The recruited studies were categorized into domains, and the themes of the studies were identified.

**Results:** Four hundred and fifty-four potential studies were found. After the reading process, 81 studies were eligible. The number of studies increased gradually, particularly between 2021 and 2023. A majority of the studies were categorized into the implementation domain (90%) and institute-based (75.31%). Cross-sectional and cohort studies were common. Cancer patients gained the most attention (39.51%). Biomedical issues were well studied. Prognostication, service accessibility, and symptom management shared 16%, 14%, and 11% of all studies, respectively. Few studies focused on spiritual care, bereavement, communication, education, and community participation.

**Conclusion:** Thai Family Physicians have contributed to palliative care development, particularly in the areas of implementation and biomedical issues. The Royal College of Family Physicians of Thailand has played a significant role in the progress of Thai palliative care. The gap was identified in knowledge including spiritual care, bereavement, communication, education, and community palliative care.

**Keywords:** palliative care, Thai Family Physicians, palliative care development

## Introduction

Palliative care in Thailand has been developing for two decades.[1] Thailand progressively improved from isolated palliative care provision (3a level) in 2013 to early integration into the healthcare system (4a level) in 2017 as categorized by the Worldwide Palliative Care Alliance.[2,3] Thailand was 44th in the world ranking and 10th in the Asian-Pacific region in the 2015 Quality of Death Index.[4] The great leap of palliative care in Thailand was initiated in 2017. The Ministry of Public Health (MOPH) implemented a palliative care policy in the National Service Plan. The key indicators were continuously monitored, including palliative care home visits, advance care planning (ACP), and strong opioid prescriptions in government hospitals.[5] This policy has markedly improved the accessibility of palliative care countrywide. In 2022, 112,278 patients had access to palliative care services. Among these, 29.8% received strong opioids, 40.99% were provided home visits, and 61% discussed ACP.[6] The provision of palliative care at home has increased, resulting in higher reimbursement for home visits. Moreover, this policy has reduced unnecessary inpatient admissions[7], emergency visits[8], and inpatient healthcare costs.[9] However, the gaps were quality of care, healthcare-supporting environment, and community engagement.[4] To enhance full coverage and achieve advanced integration of palliative care, the implementation of palliative care into primary care is one of the most important strategies. This strategy needs palliative care education in multilevel primary care networks.[10] Although family physicians play an important role in the provision of palliative care services in community and hospital settings, scant evidence was found regarding the role of family physicians in palliative care in Thailand.

The World Health Organization (WHO) encouraged the integration of palliative care into public health and primary health care systems to ensure that services are equally and effectively accessible. The WHO suggested a public health model for palliative care development that includes: 1) developing policies on palliative care; 2) accessibility to essential medications; 3) education and professional training, and 4) implementation.[11]

The Royal College of Family Physicians of Thailand (RCFPT), the professional body of Family Physicians in Thailand, was established in 1999. The RCFPT included palliative care at every level of the curriculum. Since 2012, palliative care has been one of the main core competencies of residency training in Family Medicine in Thailand.[12,13] A one-year, full-time postgraduate palliative care training program, the Certificate of Medical Proficiency in Palliative Care in Family Medicine commenced in 2018.[14] In 2023, the RCFPT developed a two-year Fellowship in Palliative Medicine curriculum.

In 2023, the RCFPT developed the "20th anniversary of Thai Family Physician Impact Evaluation Project (TFPIME)". This aimed to systematically evaluate the evidence of the impact of family physicians on the healthcare system. Our article is a part of the project. The objectives of this study were: 1) to examine the evidence of palliative care research conducted by Thai family physicians; 2) to categorize the related research by public health models for palliative care development[15], and 3) to identify themes of palliative care-related research.

## Methods

### Design

This comprehensive scoping review was conducted to address all research questions. This article is particularly useful for understanding Thai family physician research domains according to the public health model for palliative care development, including policy, drug availability, education, and implementation, as proposed by the World Health Organization (WHO).[16] The authors may categorize appropriate themes for a better understanding of the whole picture and identify research gaps. A quality appraisal was not conducted in the scoping review because the authors focused on the comprehensive mapping of research domains and themes.

### Search strategy

This scoping review searched all original research published between 2000 and 2023 in the Famscholar database and obtained all research articles that have at least one board-certified Thai family physician as a co-author. It retrieved all publications from Scopus and the national online electronic journal database of Thailand, the Thai Journal Online (ThaiJo) database. The final search was conducted on November 18, 2023. Since Famscholar does not support Medical

Subject Heading (MeSH) term functions, the search terms relevant to palliative care were selected from standard textbooks of palliative care and consensus among three Thai palliative care experts. It included ten categories and more than 65 keywords (Table 1).

### Inclusion and exclusion criteria

Palliative care is an approach to improving the quality of life and death among life-limited patients by integrating a holistic approach and patient-family-centered care in advanced diseases. A wide range of studies were included in this scoping review. Included papers had to meet the following criteria: (1) at least one board-certified Thai family physician must be among the authors; (2) the included studies must be original articles, integrative reviews, systematic reviews, or meta-analyses, and (3) full articles must be in English or Thai, with abstracts in English. The authors excluded papers with the following features: (1) study types, including narrative reviews, letters to the editor, editorials, congress or conference abstracts, interviews, newspaper articles, book chapters, expert opinions, and case reports that were not systematically analyzed, and (2) papers for which full articles could not be accessed.

### Data extraction

A data extraction protocol was developed and executed by three authors (TT, AR, and RT). The process involved screening by title and abstract, removing duplicates, and assessing full articles. The authors collected information on study design, participants, study location, and year of publication, and categorized the recruited studies according to the domains of the WHO's public health model for palliative care development and palliative care-related topics. Two authors independently performed each step, with any disagreements resolved by a third author. After an impeccable evaluation of all included papers, appropriate themes were identified to describe the study findings. The authors presented the results as the number and proportion of studies according to their characteristics and time of publication within five years.

## Results

Initially, 454 articles were recruited by search terms related to palliative care. The abstracts of potential articles were reviewed by independent researchers. Three hundred and thirty-nine studies were excluded at this step. Further, the potential articles received full article evaluation. Thirty-four articles were excluded: 25 were not related to palliative care, two were duplicates, four did not meet methodology criteria, and three were unavailable for full-text access. All excluded articles due to unmet methodology criteria were narrative reviews. After all processes, 81 eligible studies were included for analysis (Figure 1).

**Table 1.** Shows list of search terms that related to palliative care

| Category | Keywords |
|---|---|
| Care | palliative, terminal, end stage, end of life, life-limiting, life-threatening, dead, dying, death, supportive, hospice |
| Symptom | Pain, dyspnea, symptom, breathless, delirium, dementia, suffer, distress |
| Assessment tool and measurement | ESAS, Karnofsky, SPICT, PAINAD, quality of life |
| Diseases | Chronic obstructive pulmonary disease, cancer, non-cancer, heart failure, serious illness |
| Communication | Advance care plan, advance directive, empathy, compassion, living will, counseling, family meeting, decision, proxy, power of attorney |
| Medication | Drug availability, opioid, morphine, fentanyl, cannabis |
| Prognostication | Surviv*, progno*, life expectancy, mortal* |
| Caregiver | Grief, bereavement, mourning, caregiver, carer, burden |
| Ethic | Life sustaining, withdraw, withhold, euthanasia, dilemma, DNR, resuscitation, intubation, ventila*, sedat* |
| Spiritual | Spiritual, dignity, well-being, resilience |

ESAS, Edmonton Symptom Assessment System; SPICT, Supportive and Palliative Care Indicator Tools; PAINAD, Pain Assessment in Advanced Dementia

*, Heading of words that related to palliative care topics. Progno* stands for prognosis or prognostication, for example

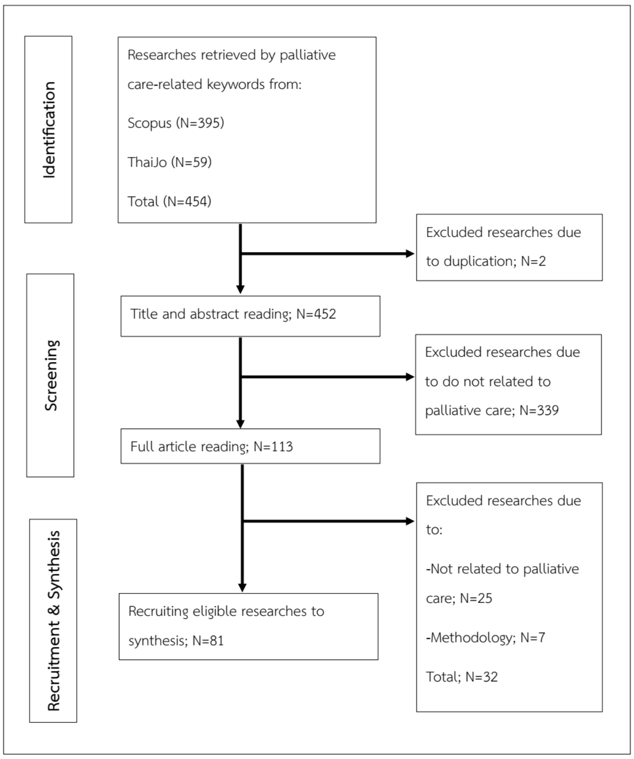

**Figure 1.** Shows recruitment process of research on palliative care conducted by Thai family physicians during 2000-2023 period

According to Table 2, cross-sectional and cohort studies were the most popular study designs (33.33% and 25.93%, respectively). Nine control-trial studies included seven non-randomised controlled trials (non-RCTs) and two randomised controlled trials (RCTs). Eleven percent of studies used a qualitative design. Three studies were systematic reviews and meta-analyses.

For participants, the number of participants varied across studies. Most studies recruited between 100 and 500 participants (42.50%). Eighteen percent of the studies recruited more than 1,000 participants. The median number of participants was 157 (min = 1, max = 52,027, and IQR 64, 420). The main populations in all studies were patients; 40% were cancer, 20% were non-cancer, and 20% were a mix of cancer and non-cancer patients. There was no general population or health volunteer involvement.

Seventy-five percent of the recruited studies were institute-based (studies were conducted in hospitals). Five studies were conducted in community settings. Most articles (64) were single-center studies and only 15 were multi-center studies, conducted either in Thailand or abroad.

According to the public health model, 90% of the articles were categorized under the implementation domains. The remaining articles were categorized under education and drug availability (2.5% each). No research was categorized under the policy domain (Figure 2).

**Table 2.** Shows characteristic of research on palliative care conducted by Thai family physicians during 2000-2023 period

| Characteristics | Number (%) |
|---|---|
| Study design | |
| Cross-sectional study | 27 (33.33) |
| Cohort study | 21 (25.93) |
| RCT and non-RCT clinical trial | 9 (11.11) |
| Qualitative study | 7 (8.64) |
| Systematic review or meta-analysis | 3 (3.70) |
| Mixed method | 3 (3.70) |
| Case control study | 1 (1.24) |
| Uncategorizable | 10 (12.35) |
| Total | 81 (100.00) |
| Participant groups | |
| Cancer patient | 32 (39.51) |
| Non-cancer patients | 16 (19.75) |
| Both group of patients | 16 (19.75) |
| Health care providers | 5 (6.17) |
| Caregiver/relatives | 4 (4.94) |
| Patients and caregiver/relatives | 3 (3.70) |
| Medical students/residents/teachers | 2 (2.48) |
| Uncategorizable | 3 (3.70) |
| Total | 81 (100.00) |
| Place of studies | |
| Community-based study | 5 (6.17) |
| Institute-based study | 61 (75.31) |
| Uncategorizable | 15 (18.52) |
| Total | 81 (100.00) |

RCTs, randomized controlled trials; non-RCTs, non-randomized controlled trial

When we classified articles into themes, we found that the theme of prognostication or prognostic tools was the most prevalent (16%). Accessibility and symptom management themes were second (14%) and third (11%) respectively. For the advanced care planning theme, this important issue of palliative care included eight articles (10%). Six studies on caregiver burden were identified. The palliative care education theme was less popular (two studies, 2%). One article focused on the bereavement and spiritual care themes. Studies on communication and community participation were also rare (Figure 3).

According to Table 3, symptom assessment tools and management were the earliest published topics. These were followed by prognostication, cost of care, attitude toward palliative care, and advanced care planning. Prognostication and

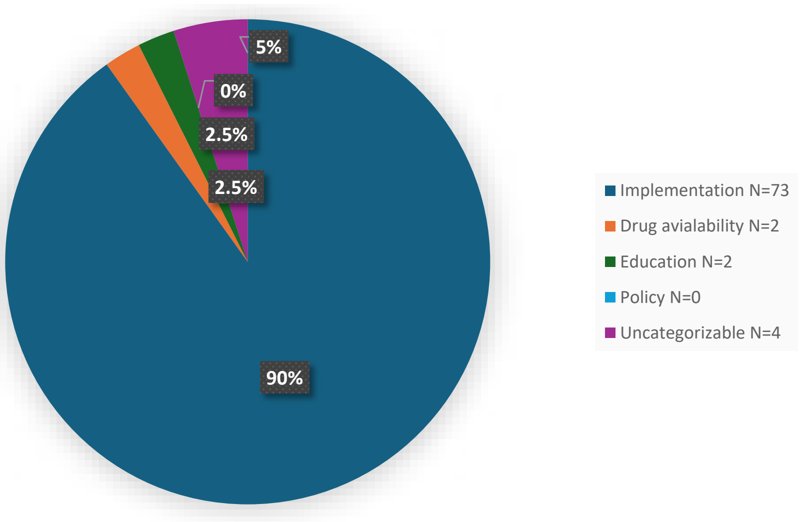

**Figure 2.** Shows proportion of palliative care researches conducted by Thai family physicians during 2000-2023 period categorized by WHO's public health service domain. (Total number of studies is 81.)

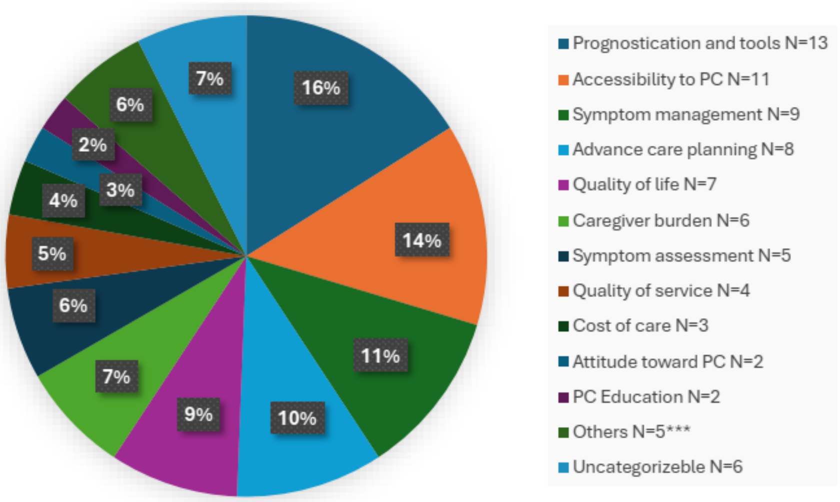

**Figure 3.** Shows proportion of palliative care researches conducted by Thai family physicians during 2000-2023 period categorized by research themes. (Total number of studies is 81.)

**Table 3.** Shows trend of research themes on palliative care conducted by Thai family physicians during 2000-2023 period

| Theme | Biomedical | | | | Psycho-spiritual | | | Car-egiver | Commu-nication | | Adminis-tration | | | Edu-cation | Miscella-neous | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Period | Screening tools | Symptom assessment | Symptom management | Prognostication | Quality of life | Spiritual care | Grief and Bereavement | Caregiver burden | Communication | Advance care planning | Accessibility | Cost of care | Quality of services | PC education | Community participation | Attitude toward PC | Uncategorizable | Total in period. |
| 2000-2005 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2006-2010 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 2011-2015 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 6 |
| 2016-2020 | 0 | 2 | 2 | 6 | 5 | 1 | 0 | 2 | 1 | 3 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 27 |
| 2021-2023 | 1 | 1 | 6 | 7 | 2 | 0 | 1 | 4 | 0 | 4 | 10 | 1 | 3 | 1 | 0 | 1 | 5 | 47 |
| Total in theme | 1 | 5 | 9 | 13 | 7 | 1 | 1 | 6 | 1 | 8 | 11 | 3 | 4 | 2 | 1 | 2 | 6 | 81 |

symptom management themes remain popular in the current period. The number of studies on accessibility to palliative care and advanced care planning is increasing rapidly. Despite the rapid increase in palliative care studies produced by Thai family physicians over the past three years, no articles about communication, spiritual care, and community participation were published.

## Discussion

In brief, 81 palliative care-related studies were identified in which Thai family physicians participated. Cross-sectional and cohort studies were common designs. A majority of the included studies were institute-based and patient-focused. According to the public health model for palliative care development, the implementation domain accounted for 90 percent of all studies.

The official establishment of palliative care in Thailand was in 1997.[16] It began at the implementation level and progressed gradually to the administration and policy levels as part of the National Service Plan for Cancer Prevention in 2013.[1,2] Since then, palliative care research has commenced and increased in terms of study numbers. It is not surprising that most of the palliative care research produced by Thai family physicians focused on implementation. The studies conducted by Iatprap et al. and Chakruyanuyok et al. demonstrated the role of Thai family physicians in palliative care service development at the implementation level.[18,19] Fifty-eight percent of the included articles were published in the last three years. This corresponds to the establishment of a Training Curriculum for the Certificate of Medical Proficiency in Palliative Care in Family Medicine by RCFPT that was initiated in 2018.[20]

According to the results, the included studies were categorized into six sub-domains: biomedical, psychospiritual, communication, administration, caregiver, community, and miscellaneous. Biomedical and administration were the two most common topics. The biomedical sub-domain comprised 28 studies, including screening, prognostication, and symptom assessment and control. Prognostication is an important topic for palliative care, guiding care planning, and therapeutic communication.[21] It has become the most popular topic for Thai family physicians. Prompantakorn confirmed the prognostic value of the Palliative Performance Scale in the Thai population.[22] It showed consistency with a study conducted on Canadian palliative care patients.[23] Prognostication tools for cancer patients were developed and validated. Phinyo et al. proposed a newly developed tool, the HCC-SM CMU model, for estimating survival in patients with hepatocellular carcinoma and spinal metastases.[24] Pongikorn et al.[25] developed the Individualized Prediction of Breast Cancer Survival (IPBS) model, which was externally validated by Charumporn.[26] For non-cancer patients, many studies addressed end-stage organ or acute diseases. Purisinsith et al. reported that poor oral health correlated with poor peritoneal dialysis outcomes.[27] Morasert et al.[28] and Mekanimitdee et al.[29] reported practical clinical factors that related to in-hospital mortality of acute exacerbation chronic obstructive pulmonary disease patients: e.g., age, oxygen saturation, and white blood cell count. Chongruksut et al. revealed a significant correlation between advanced age and mortality in patients with intracerebral hemorrhage.[30] However, we failed to identify published academic studies that have adopted these tools at the practice level.

Some studies are concerned with symptom management. Klankluang et al. described a high prevalence of missed diagnoses of delirium made by non-palliative care specialists and identified delirium-related factors.[31] Taburee et al. conducted a meta-analysis that reported hyoscine butyl bromide had the highest potential for death rattle prevention.[32] Phenwan[33] demonstrated the application of the total pain concept in real-world practice, showing the value of a holistic approach in palliative care.

Following the amendment of the Narcotic Drugs Act B.E. 2562, medical cannabis was introduced into Thai palliative care service.[34,35] Three studies reported clinical outcomes of medical cannabis. Cancer patients were the majority of participants in two studies.[36,37] Sirimaharaj et al. studied the effectiveness and safety of medical cannabis in Alzheimer's disease patients.[38] However, all these studies were conducted with a small number of participants and over a short period.

Corresponding to real-world practice, the majority of the included studies focused on cancer patients. Non-cancer patients accessed palliative care at a later time and in smaller proportions.[39,40] This finding corresponds to the main patients engaged in palliative care within the Thai healthcare system. The prevalence of patients needing palliative care was higher in inpatient settings (15-18%) compared to outpatient settings (7.8%).[39,41,42] Elderly patients tend to be transferred to palliative care.[41,42] When patients accessed palliative care services, they gained benefits from symptom control medications, family meetings, and documented advance care planning.[19,41] Additionally, Chaobankrang reported a lower incidence of invasive treatment among palliative care patients.[39]

In comparison to other specialists, family physicians providing palliative care services had a higher incidence of transfers to community care and gained more satisfaction.[43] This correlated with the study of Nagaviroj et al., who reported that a multidisciplinary team improved the chance of home deaths among palliative care patients.[44] Prommarat reported the effects of ACP on end-of-life care. The study results showed an increase in home deaths and a decrease in hospital costs within the ACP group.[45] This corresponded well with studies by Soontharanurak [46] and Brinkman-Stoppelenburg et al.[47] that reported decreased incidence of life-sustaining treatment utilization and increased hospice referrals among patients who had ACP.

Surprisingly, we identified only six percent of studies performed by Thai family physicians in the community. Additionally, there were no studies concerning policy. There are several obstacles to conducting community-based research among Thai family physicians practicing in communities; e.g., lack of support, interest, and research experience.[48] Among the various themes, there were few studies addressing caregiver issues. Most of them addressed caregiver burden, identifying risk factors, and the mediation model.[49-54] Caregivers of cancer patients were the majority again. Dementia was the only non-cancer disease that was identified under the issue of caregiver.[52,53] However, specific-disease caregivers, such as those assisting people with chronic kidney disease and people with disabilities, might bear a specific burden.[55-57] Understanding those groups of caregivers is essential for service development. However, while ACPs that are considered to be part of communication were studied pervasively[45,58-63] other issues about communication were not addressed, e.g., communication techniques and strategies.

Studies on bereavement and spiritual care were also rare. We identified only one that mentioned spirituality among cancer patients and asked for more attention to the secular view.[64] Regarding education issues, we identified two studies on palliative care training. This may reflect the insufficient palliative care education in academic activities,[65,66] Fortunately, the Medical Council of Thailand declared in January 2024 that palliative care is an essential competency for Thai medical students.[67] Further evaluation of the aforementioned declaration might guide professional training. There are huge gaps that Thai family physicians might have to fill.

Some innovations have been introduced by Thai family physicians. Wongpakaran et al. reported the outcome of the Thai version of the Confusion Assessment Method (CAM) algorithm for the diagnosis of delirium by general physicians.[68] Sripaew et al. systematically translated the Supportive and Palliative Care Indicators Tool for Low-Income Setting (SPICT-LIS) into Thai.[69] Suwanthaweemeesuk et al. reported comparable clinical outcomes between telemedicine and usual care for palliative care patients.[70] Technology has also been applied in palliative care practice. Gomutbutra et al. attempted to use machine learning for pain diagnosis.[71] Phenwan and colleagues conducted a series of ACP classes using card games and the Zoom program. They reported excellent responses from participants.[72]

## Limitations

This study included articles focusing on Thai family physicians as authors. During the study process, we identified several palliative care-related articles conducted by other Thai professionals. The authors would like to remind readers that the primary aim of this study was to review the contribution of Thai family physicians to the field of palliative care research.

The Famscholar database was used following the study protocol. It collected research published in the Scopus and ThaiJO databases only. Gray literature was not included in our study.

## Conclusions

Thai family physicians have made contributions to palliative care development. Eighty-one articles for which Thai family physicians shared authorship published since 2000 are related to palliative care. Most of them were quantitative studies. Cross-sectional and cohort designs were prevalent. The number of palliative care-related articles increased gradually, particularly following the establishment of the Training Curriculum for the Certificate of Medical Proficiency in Palliative Care in Family Medicine in 2018. Biomedical issues were dominant. Most of the studies were confined to the implementation rather than the policy level. For further study, Thai family physicians should address the knowledge gaps identified in this research: caregivers, communication, spiritual care, education, and community participation.

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