Establishment of multidisciplinary pain management clinics and training programs in the developing world: experiences from Southeast Asia

by Andi Muhammad Takdir Musba

Submission date: 09-Mar-2023 09:09AM (UTC+0700)
Submission ID: 2032596317
File name: Establishment_of_multidisciplinary_pain_management.9.pdf (158.88K)
Word count: 7589
Character count: 43071

Biennial Review of Pain

PAIN

Establishment of multidisciplinary pain management clinics and training programs in the developing world: experiences from Southeast Asia

Pongparadee Chaudakshetrin[a,*], Mary Suma Cardosa[b], Cynthia Ruth Goh[c,d], Francis Ocampo Javier[e], Andi Muhammad Takdir Musba[f], Pradit Prateepavanich[g], Jocelyn Co Que[h], Andi Husni Tanra[i], Ramani Vijayan[j], Alex Sow Nam Yeo[k]

1. Introduction

Southeast Asia is a subregion of Asia that comprises 11 countries, including Brunei, Cambodia, East Timor (Timor-Leste), Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. The combined population of this region is 650 million people.[1] Among these countries, in addition to considerable differences in economic development, there is much greater diversity in ethnicity, religious and cultural beliefs, the languages spoken, and national health care systems. The provision of a quality public health care system is considered inadequate in many of these countries, and disparities can exist across different geographical regions within the same country. The health care challenges within Southeast Asia are immense.[11] Although this region is currently experiencing rapid economic growth, the population is aging and there is an increased incidence of noncommunicable diseases. Globally, musculoskeletal disorders are the leading group of causes of the nonfatal burden of disease (from http://www.healthdata.org/gbd). In Southeast Asia, these disorders rank either first or second. Together with the aging population, this means that there will be an increasing number of patients with chronic pain, with associated suffering, and disability. Thus, access to pain relief is needed in all these countries. Pain management should be available in the community health care setting, in secondary care, and in tertiary specialized care settings. At all levels, multidisciplinary care that includes all appropriate supporting specialties with a focus on self-management strategies should be provided.

According to the Pain Clinic Guidelines Task Force adopted by the International Association for the Study of Pain (IASP) in May 2, 2009, Multidisciplinary pain management (MDPM) is the most effective treatment for patients with chronic pain.[5] An integrated biopsychosocial model approach is used to provide multimodal treatment by a team of different specialists working together in the same space and communicating with each other about the patient on a frequent and scheduled basis.

This report will describe and discuss the history of the establishment of *multidisciplinary pain clinics* (MDPCs) in Indonesia, Malaysia, the Philippines, Thailand, and Singapore. These 5 countries were the original members of the Association of Southeast Asian Nations (ASEAN), the regional intergovernmental organization that now comprises 10 members.

The establishment of the Association of Southeast Asian Pain Societies (ASEAPS) will also be described including its role in educating young health care professionals about pain management.

2. Multidisciplinary Pain Clinics in Association of Southeast Asian Nations: history and development

Indonesia is the country in Southeast Asia that has the most challenges relative to health care distribution. The disparity between those who have and do not have access to pain relief in Indonesia is not surprising, given the fact that Indonesia is an archipelago consisting of over 17,000 islands. Pain treatment facilities and services are found mostly in secondary and tertiary hospital settings. In some hospitals, anesthesiology-based acute pain services (APSs) are available, but with limited facilities and support. Chronic and cancer pain is managed by specialists, such as anesthesiologists, neurologists, orthopedic surgeons, and rehabilitation medicine specialists, but this type of care is most often found in teaching hospitals. Integrated medical services that include multidisciplinary teams with different specialties, including clinical psychologists, are still rare. There are currently about 9 hospitals, both private and public, that are located in various parts of the country that have these types of pain management services.

Specialized pain treatment services were started for the treatment and care of specific groups of patients. For example, "Pain and Palliative Clinics" derived their name from their focus on treating patients with pain from advanced cancer. In the beginning, MDPCs existed only in large teaching hospitals, and

Sponsorships or competing interests that may be relevant to content are disclosed at the end of this article.

[a] Pain Clinic, Department of Anesthesiology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand, [b] Department of Anesthesiology, Hospital Selayang, Selayang, Selangor, Malaysia, [c] Division of Supportive & Palliative Care, National Cancer Centre Singapore/Singhealth, Singapore, [d] Duke-NUS Medical School, National University of Singapore, Singapore, [e] Pain Management Center, St. Luke's Medical Center, Quezon City, Philippines, [f] Intensive Therapy and Pain Management, Department of Anesthesiology, Faculty of Medicine, Hasanuddin University, Makassar, Indonesia, [g] Department of Physical and Rehabilitation Medicine, Faculty of Medicine Siriraj Hospital, Bangkok, Thailand, [h] Center for Pain Medicine, Department of Anesthesiology, Faculty of Medicine and Surgery, University of Santo Tomas, Manila, Philippines, [i] Intensive Therapy and Pain Management, Faculty of Medicine, Department of Anesthesiology, Hasanuddin University, Makassar, Indonesia, [j] Department of Anesthesiology, University Malaya Medical Centre, Kuala Lumpur, Malaysia, [k] The Pain Specialist, Mount Elizabeth Hospital, Singapore

**Corresponding author. Address: Pain Clinic, Department of Anesthesiology, Faculty of Medicine Siriraj Hospital, Prannok Road, Bangkok-Noi, Bangkok. Thailand 10700. Tel.: +66 81 988 6099. E-mail address: Pongparadee@windowslive.com (P. Chaudakshetrin).*

PAIN 161 (2020) S87–S94

http://dx.doi.org/10.1097/j.pain.0000000000001871

they started with a syndrome or modality approach being "multidisciplinary" in name only. Comprehensive pain assessment and interdisciplinary pain management were not applied in every case. Most of the physicians were nonpain specialists who would treat pain according to their specialized area of expertise. Clinical psychologists were rarely involved in these pain management services due to cultural and traditional concerns and expectations of patients and families. The general attitude and belief were that health is related more to the body than the mind.

The pain clinic at Dr Wahidin Sudirohusodo General Hospital in Makassar was established in 2004 in collaboration with the Medical Faculty of Hasanuddin University and the Department of Anesthesiology. Driven by the enthusiasm and vision of Professor Dr A. Husni Tanra, it provided outpatient pain services including physical therapy, interventional pain procedures, and acupuncture. This clinic became one of the main educational facilities in the field of pain management and became a role model for other anesthesiologists in Indonesia who visited the center and observed its clinical successes, thus encouraging others to establish pain clinics in other hospitals in Indonesia.

Learning from this experience, it is clear that the establishment of interdisciplinary teams and MPDCs together with the continuing support of hospital administrators and dedicated staff is necessary for the improvement of pain services.

The development of new pain management services in different hospitals continues, but there exists an unfortunate trend towards focusing more on interventional pain treatment, especially since the establishment of the interventional Pain Management Fellowship Program in 2016. The high cost of many interventional pain procedures, which requires expensive equipment, carries the risk that funding will be diverted to procedures rather than more effective therapies (eg, self-management), leading to challenges in maintaining pain clinic services in hospitals due to budget limitations. One of the continuing challenges in Indonesia is reimbursement for pain treatment under the national health care financing system because chronic pain is viewed as a symptom and not a disease.

In the Philippines, the first pain clinic was established in 1987 at the Philippine General Hospital, a tertiary state-owned hospital administered and operated by the University of the Philippines under the vision and guidance of Dr Cenon Cruz. The Pain Society of the Philippines was founded in the same year during the IASP World Congress on Pain in Hamburg, Germany. Another pain clinic was then launched under the Department of Anesthesiology at the University of Santo Tomas Hospital (UST Hospital) in Manila. That clinic was operated as a part-time consultation service that offered pharmacologic and nonpharmacologic modalities, including interventional pain management procedures.

The first MDPC in the Philippines was established in 1993 by Dr Cenon Cruz at the St. Luke's Medical Center-Quezon City, which is a well-funded private medical center. This clinic was able to assemble various specialists involved in pain management who communicate and work together to address the biopsychosocial dimensions of pain. Initially, most of the cases seen were cancer-related pain, but that later changed to include noncancer pain conditions. Subsequently, other MDPCs were established and a few pain clinics have been restructured into MDPCs. Apart from the state-owned Philippine General Hospital, most MDPCs in private hospitals serve both private (70%-80%) and public patients (20%-30%).

Challenges faced by pain clinics in the Philippines include lack of support from the government and hospital administrators, pain management services not covered by health care system, lack of awareness/recognition of Pain Medicine as a specialty/subspecialty, and lack of trained health care professionals to form a multidisciplinary pain team.

In Malaysia, the first pain clinic was started in 1988 at University Hospital, Kuala Lumpur, by the Department of Anesthesiology, Faculty of Medicine, University of Malaya. This outpatient clinic operated 2 days per week and aimed to manage patients suffering from chronic pain. Its conceptual framework was a multidisciplinary one. The first APS was started in 1992 by Professor Dr Ramani Vijayan from the same Department of Anesthesiology to provide quality postoperative pain management through the use of then-new techniques, such as patient-controlled analgesia and epidural infusions.[9] This APS, which has been in service for more than 25 years, now serves as part of training for the Masters in Anesthesiology Program for anesthesiology residents who are posted on a weekly rotation, medical students, nurses (APS as well as ward nurses), pharmacists, physiotherapists, and occupational therapists. This APS continues to thrive with one consultant anesthesiologist and 3 full-time APS nurses who are responsible for postoperative patients, as well as other patients with acute pain conditions, such as fractured ribs, burns, acute medical conditions such as pancreatitis, and occasionally patients with severe cancer pain.

The first APS in a Ministry of Health (MOH) hospital was established in 1993 in Hospital Kuala Lumpur. This anesthesiology-based service with full-time specialized APS nurses became a model for similar services in other major MOH hospitals, and by 2007, all MOH hospitals with specialist anesthesiologists had established an APS.

In 2000, the fist MDPC in the MOH was established by Dr Mary Cardosa at Selayang Hospital, a tertiary referral hospital located just north of the capital Kuala Lumpur. Patients were from Selayang Hospital itself, whereas others were referred from primary care clinics and other government and private hospitals in Kuala Lumpur and its surroundings, as well as from other states in Malaysia. This outpatient clinic continues to operate twice a week mainly for patients with cancer and chronic noncancer pain.

In 2002, Dr Cardosa successfully organized the first cognitive behavioral treatment (CBT)-based pain management program for chronic pain patients with the help of clinical psychologist Professor Michael Nicholas and physiotherapist Lois Tonkin from the Pain Management Research Institute, Royal North Shore Hospital, Sydney, Australia. The program was called "MENANG" (the word means "win" in the native Bahasa Malaysia language, and the team developed the name from "Program MENANGaniKesakitan," which translates to "Pain Management Program").

This program was the first of its kind in Asia. The program applied a pain self-management approach that incorporated goal setting, activity-pacing, and practical problem-solving to instill new behaviors and mindset that can result in positive changes in patients with chronic pain. Program outcomes proved dramatic for many patients who attended the program, and they were comparable to the gains achieved by patients in Western countries, as shown in the publication documenting the results from the first 5 groups.[3]

The need for high-quality pain care is immense, especially as Malaysia's population ages. An estimated 1 million Malaysians "live with persistent pain, the vast majority (82% of whom indicated that the pain interfered with their activities" according to the third Malaysian National Health and Morbidity Survey.[2]

Based on the multidisciplinary model adopted by Selayang Hospital, pain clinics in other MOH hospitals in other parts of Malaysia were gradually established from 2005 onwards in

conjunction with the establishment of a pain medicine subspecialty under the anesthesiology program of the MOH. Today, there is an MDPC run by at least one trained pain specialist in each of the 13 states in Malaysia. Data from an annual census of pain clinics in MOH hospitals showed that more than 14,000 patients visited the different outpatient pain clinics throughout the country. The pain specialists in these hospitals are also responsible for the APS, and most also help to manage patients with difficult cancer pain in partnership with palliative medicine specialists.

The Malaysian Association for the Study of Pain was formed in September 1993, and soon after they became the Malaysian Chapter of the IASP. The first president was Professor Dr Alex Delikan. The Malaysian Association for the Study of Pain continues to work towards the improvement of pain management in Malaysia by conducting pain education activities for health care providers (HCPs). In addition to pain specialists, those providers include primary care physicians and physicians from other specialties.

In Thailand, Professor Dr Salad Tupavong who chaired the Department of Anesthesiology, Siriraj Hospital started an acupuncture clinic in 1976, but the service was not limited to pain conditions. At that time, pain and its management were not taught in medical schools and there were no certified pain medicine specialists in the country. In 1985, Dr Pongparadee Chaudakshetrin went to the United Kingdom for her training in pain management. After she returned, oral syrup morphine was made available for the relief of severe pain in cancer patients. In 1989, the pain management service was separated from the acupuncture unit. This new pain clinic offered evaluation, diagnosis, and treatment 5 days per week on a consultation basis. The acceptability of the pain management service was high as the number of patients managed by the clinic per year increased, especially cancer patient, but treatments were limited to pharmacological and anesthetic approaches.

In the early years, chronic pain was not well managed in community or local hospitals because the general practitioners and specialists in those settings were not competent in the routine assessment and management of chronic pain. Patients with complex chronic pain conditions were referred to the pain clinic for anesthetic and pharmacologic pain treatments. The establishment of an MDPC was a big challenge for Siriraj Hospital, although it is the largest teaching hospital in Thailand. Most specialists were not trained in interdisciplinary pain management, so it was not possible to recruit dedicated personnel from the required departments for an MDPC.

In February 1990, the first pain symposium was organized by the Royal College of Anesthesiologists of Thailand at Siriraj Hospital. Two distinguished IASP speakers, Professor Dr Michael Cousins and Professor Dr John D. Loeser, were invited to attend. Many experts from multidisciplinary medical fields also joined this symposium, which eventually led to the formation of the Thai Pain Society. The Thai Pain Society later became the Thai Association for the study of Pain, a chapter of the IASP. Professor Sira Bunyaratavej was the first president of the TASP.

In the late 1990s, an MDPM team at Siriraj Hospital assembled to manage patients with chronic overlapping pain conditions. The team consisted of a psychiatrist, a physical and rehabilitation physician, a rheumatologist, a neurologist, and an orthopedic surgeon. Initially, they would collaborate through telephone calls, and face-to-face meetings were held for selected cases only. Each member physician would communicate his/her evaluation of a patient, and the treatment plan would be collectively discussed and determined according to the principles of the biopsychosocial approach to pain management, and the role of each individual on the team was respected.

In 1996, Dr Pradit Prateepavanich, a physical and rehabilitation medicine physician, started to voluntarily manage consulted chronic overlapping pain condition patients in the pain clinic a half-day a week. Eventually, the number of patients seen with complicated chronic pain conditions increased, and there was a need for an expanded and more structured biopsychosocial intervention. In 2013, Dr Nattha Saisavoey, a psychiatrist, went to the Royal North Shore Hospital in Sydney, Australia, to train in CBT for 1 year. After she returned, a group CBT program for patients with chronic pain was started. The results from the first group (postprogram and one-month follow-up) showed initial improvements in pain intensity, self-efficacy, and depression, but only depression improvement was maintained at one month. Comparison to the results of group CBT-based program with Australia and Malaysia are shown in **Table 1**.[3,7] To date, 7 group CBT programs have been conducted, and this treatment is applied in combination with other pain management treatments. A CBT teaching course for HCPs has also been organized at Siriraj Hospital.

Challenges associated with the operation of an MDPC included the unrecognized workload and that the working structure is different from the operating theater. After more than 2 decades, the hospital administration finally agreed to build a dedicated pain clinic with contributions from the departments of the multidisciplinary team. Thus, an approach that united the expertise of and insights from a diverse assortment of medical specialties was established at the Siriraj Hospital Pain Clinic in 2011.

A similar interdisciplinary pain service model was set up at other university and tertiary care hospitals, including Maharaj Nakorn Chiang Mai Hospital, the National Cancer Institute, Ramathibodhi Hospital, King Chulalongkorn Memorial Hospital, and Songklanagarind Hospital. It should be noted that not all pain clinics in Thailand practice a true multidisciplinary team approach. Some pain clinics are run by a single anesthesiologist with the help of one nurse or nurse assistant, and these physicians provide this service voluntarily in addition to their regular work in the operating theater.

In Singapore, pain management was started by Professor Dr Tan Seng Huat at the Department of Anesthesia of Singapore General Hospital (SGH)—the largest public hospital in Singapore—in the early 1980s. Dr Tan went to China to learn acupuncture and he started what was mostly an acupuncture service for chronic pain.

An interdisciplinary group of doctors led by an anesthesiologist, the late George Tay, started the Pain Association of Singapore, which was registered on July 30, 1986. This association later became the local IASP chapter in Singapore. The first President was a neurologist named Dr Tong Hoo Ing. By 1991, SGH was ready to send a doctor overseas for a pain fellowship, under the government Health Manpower Development Program (HMDP). The first to train overseas was anesthetist Dr Ting Pui Leong, who went to the Walton MDPC in the United Kingdom. After him, a steady stream of anesthetists was sent for training under the HMDP. They went to Australia, the United States, Canada, and Europe. Upon their return, comprehensive acute and chronic pain management services were started in most government hospitals. However, up to the year 2000, pain clinics and interventional pain procedures and services were provided without fixed clinic space or time slots. Interdisciplinary work with psychologists and physiotherapists started, but there was no dedicated resource for multidisciplinary discussion or pain interventions.

Table 1
Outcomes at posttreatment and 1-month follow-up: Comparison of Thai study with Australian Study and Malaysian Study.

Outcome	Thai study,* n = 10		Australian study,[7] n = 36		Malaysian study,[3] n = 70	
	Posttreatment	1-month follow-up	Posttreatment	1-month follow-up	Posttreatment	1-month follow-up
Pain intensity	Improved	Nonsig	Nonsig	Nonsig	Improved	Improved
Depression	Improved	Improved	Improved	Improved	Improved	Improved
Anxiety	Nonsig	Nonsig	Improved	Improved	N/A	N/A
Self efficacy	Improved	Nonsig	Improved	Improved	Improved	Improved
Disability	Nonsig	Nonsig	N/A	N/A	Improved	Improved
Catastrophising	N/A	N/A	Improved	Improved	Improved	Improved

N/A, data not available; Nonsig, no significant difference.
* Data from Saisavoey N, Kooptiwoot S, Ratta-Apha1 W, Puangsri P, Prachgosin P, Sanguanpanich N. The result of group cognitive-behavioral therapy in chronic pain patients Siriraj hospital. Poster presented at 7th World Congress of Asian Psychiatry; February 21 to 24, 2019; Sydney, Australia.

In 2001, Dr Yeo Sow Nam returned from his training in Sydney, Australia. With the help of Sister Kuldip Kaur, he oversaw the successful implementation of the "Pain as the Fifth Vital Sign" program at SGH. This culminated in the establishment of the first MDPC in Singapore in 2006—the Pain Management Centre at SGH—which was headed by Dr Yeo Sow Nam. Dedicated nursing and secretarial personnel were also provided. Regular multidisciplinary discussions and cognitive-behavioral group therapy involving psychologists and physiotherapists were started, and there were space and equipment for comprehensive interventional pain therapies that could be performed under fluoroscopy. Acupuncture services were also provided. Treatment outcomes demonstrated ability to cope among patients with chronic pain, weaning down the unnecessary medications and admission.[8] There is great acceptability in the community. However, due to limited financial resources and health care coverage, such a program could only be organized once every 6 months.

Over the following years, pain management training and services grew rapidly in the rest of the country, and now all major hospitals in Singapore have comprehensive MDPM services. The membership of the Pain Association of Singapore now includes the following types of clinicians: anesthesiologists, neurosurgeons, neurologists, orthopedists, geriatricians, palliative medicine specialists, rehabilitation medicine specialists, rheumatologists, psychiatrists, dentists, nurses, physiotherapists, occupational therapists, psychologists, physiologists, and neuroscientists.

In Myanmar, a Pain Treatment Center was started at Yangon General Hospital in 1994, run by the neurosurgical department with support from UPSA, a French medical company. In May 2008, Professor Tin Myint (Anesthesiologist), Professor Khin Myo Hla (Physical Medicine and Rehabilitation), and Professor Myint Thaung (Orthopaedic surgeon) were invited to join the meeting of the TASP in Thailand. At this meeting, they had discussions with Professor Troels Jensen, who was then President of IASP. These leaders later founded the Myanmar Society for the Study of Pain (MSSP) in 2009, with Professor Tin Myint as their first President. The MSSP became a chapter of IASP in 2011, and the sixth member of ASEAPS in 2015, and hosted the seventh ASEAPS Congress in Yangon in 2017.

3. Training pain physicians in Association of Southeast Asian Pain Societies countries

Pain education and training have played an important role in the effort to improve pain management in ASEAN countries. In addition to limited manpower and resources, the dominant understanding about pain among most HCPs and patients was that all pain, including chronic pain, was a symptom and not a disease. Education efforts had to be started at multiple levels to promote a biopsychosocial understanding of pain. Training targets included undergraduate programs and professional colleges, HCPs in primary care, and young and senior doctors in secondary and tertiary hospitals. Another challenge was that Pain Medicine was not recognized as a specialty in ASEAN countries.

Continuous efforts from local and international organizations, including ASEAPS and IASP, have helped to change attitudes regarding how pain should be treated, improve the knowledge and skills of HCPs at all levels of the health care system, and train local health care specialists how to set up clinical services at their hospital. Establishment of MDPCs was the first step towards improving access to pain treatment; however, educating health care professionals and the public about pain management was a key step towards raising awareness about the need for and the importance of training pain specialists.

In Indonesia, the Medical Faculty of Hasanuddin University in Makassar, Sulawesi, developed a pain management consultant program that is now in its seventh year. Aimed at anesthesiologists who want to subspecialize in pain medicine, the program includes input from other specialists, such as rehabilitation medicine specialists, neurologists, surgeons, orthopedists, and psychologists. So far, 62 fellows from all over Indonesia have graduated from this program.

In the Philippines, a fellowship training program was initiated by St. Luke's Medical Center to increase the number of trained pain practitioners. The fellowship is based on the IASP pain curriculum, which was modified to adapt to the local conditions and resources in the Philippines. To date, 44 pain fellows have graduated from the program. Pain medicine fellowship programs were also started at the University of the Philippines General Hospital in 1995, and the Manila Doctors' Hospital and Medical Center in 2008.

In 2005, the Pain Society of the Philippines sponsored a board resolution that created the Specialty Board in Pain Medicine. The aim was to professionalize and regulate the practice of Pain Medicine in the country. This professional medical organization was registered with the local Securities and Exchange Commission to make it a legal entity. The Philippine Board of Pain Medicine was initially headed by its founding chairman, Dr Francis O. Javier. He was succeeded by Dr Henry Lu followed by Dr Ma. Lourdes Josefina Koh Cabaluna (see philpainboard.org). Written examinations are conducted biennially.

In 2014, the UST-FMS Center for Pain Medicine collaborated with the Australian and New Zealand College of Anesthetists and the Pain Society of the Philippines (PSP) to introduce the Essential Pain Management (EPM) Program in the Philippines. Two years later, EPM Lite was incorporated into the medical curriculum of fourth-year medical students at UST. The EPM workshop, including the train-the-trainer course, continues to be offered regularly by UST and the PSP to increase pain awareness and improve pain-related knowledge among health-related disciplines all across the Philippines. EPM and EPM Lite, which focus on educating nonpain specialists about pain management based on a biopsychosocial understanding, have also been introduced to many other ASEAN countries.

In Malaysia, the MOH has a 3-year subspecialty training program in pain medicine for anesthesiologists. Trainees rotate between accredited MOH hospitals with MPDCs for 1 to 2 years, and they also spend 9 to 12 months overseas at MPDCs in Australia, Singapore, Thailand, India, Korea, or Taiwan. Established in 2006, the program has trained more than 30 pain specialists who now run pain clinics in different MOH hospitals throughout the country.

In Thailand, the first fellowship training program in pain management was established at the pain clinic, Siriraj Hospital, in 2006. The main purpose was to train local health care specialists in the biopsychosocial approach to pain management, to be competent in the management of chronic pain, and to be able to set up a clinical pain service in their respective hospitals. The clinical training program was launched with the help and guidance of 3 medical specialties: anesthesiology, physical and rehabilitation medicine, and psychiatry. A major component of the clinical activities of fellows is direct patient care, including comprehensive pain evaluation, problem-based bio–psycho–social care, and hands-on pain interventions under the supervision of mentors. Twenty-five local pain fellows from government hospitals have completed the one-year fellowship training course at the MDPC at Siriraj Hospital, and 3 of them are rehabilitation medicine physicians.

In 2012, Pain Medicine became recognized as a subspecialty of Anesthesia by the Royal College of Anesthesiologists of Thailand. A 2-year training program in pain management run by anesthesiologists at 3 teaching hospitals in Bangkok, including Ramathibodhi Hospital, Siriraj Hospital, and King Chulalongkorn Memorial Hospital, was approved by the Medical Council of Thailand.

In Singapore, local training in pain medicine starts during anesthesia residency. After completion of residency, many doctors do a one-year local pain fellowship, followed by overseas HMDP training. The one-year fellowship training program in pain at SGH is under the purview of the Faculty of Pain Medicine of the Australian and New Zealand College of Anesthetists, and the FFPMANZCA is a recognized fellowship. Since 2007, 3 doctors have completed this fellowship through this route. To date, SGH Pain Management Centre had trained a total of 27 pain physicians from Asian countries. Most have returned to their home countries to head and develop pain management services and educate more clinicians.

In 2019, the Chapter of Pain Medicine Physicians was formed under the Academy of Medicine, Singapore. The founding of this multidisciplinary chapter is another important milestone towards the recognition of Pain Medicine as a subspecialty. It also helps to formalize standards of training and the practice of Pain Medicine, and it assists the MOH Singapore in various areas related to pain management, including the drafting of national guidelines for opioid use. Interventional pain procedures have also been reviewed for their applications based on evidence-based medicine.

4. Education and training initiatives in Association of Southeast Asian Pain Societies countries and Beyond

Initiatives in pain education instrumental to the establishment of MDPCs in this region are the University of Santo Tomas Faculty of Medicine and Surgery (UST-FMS) Long-Distance Certificate in Pain Management, the IASP Pain Management Camp, the Siriraj International Fellowship Training Program and, most recently, the IASP Multidisciplinary Pain Center Toolkit project.

The Long-Distance Postgraduate Degree Program in Pain Management, the first distance-education program in Southeast Asia for graduate studies in Pain Medicine, was introduced in 2008 by Professor Dr Jocelyn Que under the UST-FMS Center for Pain Medicine. The establishment of this degree program was supported by an IASP Grant for Pain Education in Developing Countries. This innovative program is offered to all physicians in Southeast Asia, India, and Pakistan through a collaborative partnership between UST and the University of Sydney. In 2015, the program was also opened to nonphysician health care professionals. To date, a total of 42 HCPs have enrolled, and 25 have completed the program. The majority (79%) of graduates were from the Philippines, and the rest (21%) were from Malaysia, Indonesia, Thailand, and India.

The International Fellowship Training Program in Pain Management was founded at the pain clinic, Siriraj Hospital, in 2005, when an anesthesiologist from the University Sains Malaysia undertook his fellowship training for 6 months. International fellows from Indonesia, Vietnam, Mongolia, Malaysia, and Myanmar later undertook pain training, supported by an IASP Grant for Pain Education in Developing Countries (2007 and 2008). Initiated in 2010 under the leadership of Professor Dr Michael Bond (IASP) and Professor Dr Angela Enright (World Federation Societies of Anesthesiology [WFSA]), there are now 2 pain fellowship positions for non-Thai fellows available at Siriraj Hospital every year that are jointly funded by IASP and WFSA.

To date, 66 physicians have completed the training. Of those, 16 were funded by IASP and WFSA, and 39 were local Thai physicians. **Table 2** summarizes the training program and funding sources in ASEAN and non-ASEAN countries in the region.

The IASP Southeast Asian Pain Management Camp that piloted in Thailand in 2011 was partly modeled after the successful European Pain Summer School in Sienna. The concept was to provide basic intensive interactive clinical pain education to a multidisciplinary group of health care professionals from the low-to-middle income countries (LMICs) of the region. A 5-day residential course linked to the biennial ASEAPS Congress was designed. The focus of this pain camp was a multidisciplinary approach based on a biopsychosocial understanding of pain. Participants also had a chance to learn and network among participants from different countries. The details of this initiative and its outcome can be found in the report by Goh and Lee.[4]

The first IASP Southeast Asian Pain Camp was held in Bangkok just before the fourth ASEAPS Congress. Since then, 4 more pain camps were held in Singapore, the Philippines, Myanmar, and Malaysia. The sixth pain camp will be in Jogjakarta, Indonesia, in 2021. A total of 145 participants from ASEAN and other LMICs in Asia, including Sri Lanka, Bangladesh, Nepal, Bhutan, and Mongolia, have attended these pain camps (**Table 3**).

Table 2

Clinical fellowship program trainees from 2005 to 2019.

Country	Total	Training program duration			Source of funding		
		1 year	2 years	3 months	IASP-WFSA	IASP	Others
ASEAN countries							
Myanmar	6	4	—	2	4	2	
Laos	4	3	—	1	2	1	1 Thai Government
Vietnam	3	2	—	1	2	1	
Malaysia	2	1	—	1*	1	—	1* University of San Malaysia
Indonesia	2	1	—	1	1	1	
Cambodia	1	1	—	—	1	—	
Thailand	39	25	14	—	—	—	MOH, University of Thailand
Non-ASEAN countries							
Nepal	4	4	—	—	4	—	
Mongolia	2	1	—	1	1	1	
Bhutan	1	1	—	—	—	—	1
China	1	1	—	—	—	—	1
Iran	1	—	—	1	—	—	1 WFSA
Total	66	44	14	8	16	6	

* Six-month program.
ASEAN, Association of Southeast Asian Nations; IASP, International Association for the Study of Pain; MOH, Ministry of Health; WFSA, World Federation of Societies of Anesthesiologists.

The Multidisciplinary Pain Center Toolkit project, initiated in 2017, aims to develop a template and related training materials that would encourage and enable HCPs in Southeast Asia to develop multidisciplinary pain centers to better assess and manage patients with chronic pain. Due to current challenges facing HCP in providing multidisciplinary management for these patients, this project focuses largely on training psychological and self-management approaches to all the different HCP involved in running pain clinics.

The success of these initiatives is due to strong collaboration among ASEAPS members, and strong support from the IASP and WFSA, especially the IASP presidents, the ASEAPS liaisons, and volunteer IASP speakers. The incredible passion, spirit of volunteerism, and teamwork demonstrated by IASP officers and ASEAPS leaders have led to the great success of these pain education projects in Southeast Asia.

5. The confederation of Association of Southeast Asian Pain Societies

In the early 2000s, there were only 5 pain societies in ASEAN that were IASP chapters, including the Pain Societies of Indonesia, Malaysia, the Philippines, Singapore, and Thailand. Under the leadership of Professor Dr Michael Bond,

Table 3

ASEAN pain camp participants from 2011 to 2019.

Country	Total	Physician*	Nurse	Pharmacist	PT/OT	Dentist	Clinical psychologist
Bangladesh	6	6	—	—	—	—	—
Bhutan	2	1	1	—	—	—	—
Cambodia	9	5	1	—	3	—	—
Fiji	2	2	—	—	—	—	—
Indonesia	12	12	—	—	—	—	—
Laos	7	7	—	—	—	—	—
Malaysia	16	10	1	2	—	—	3
Mongolia	2	2	—	—	—	—	—
Myanmar	19	19	—	—	—	—	—
Nepal	8	6	—	—	1	1	—
Philippines	18	16	2	—	—	—	—
Singapore	18	10	4	—	2	—	2
Sri Lanka	1	1	—	—	—	—	—
Thailand	13	10	1	1	—	—	1
Timor-Leste	4	4	—	—	—	—	—
Vietnam	8	8	—	—	—	—	—
Total	145	119	10	3	6	1	6

* Physicians included anesthesiologists, physical and rehabilitation physicians, neurologists, neurosurgeons, orthopedists, pediatricians, oncologists, endocrinologists, and gastroenterologists.
ASEAN, Association of Southeast Asian Nations; OT, occupational therapist; PT, physical therapist.

a confederation of these pain societies was formed, and the ASEAPS was founded in 2004. The primary aims were to foster links and cooperation among health care professional pioneers in pain management in ASEAN countries for improvement in pain services and pain education and research. Professor Dr Cynthia Ruth Goh, a senior palliative care medicine specialist from Singapore, took an active role in its formation, and she was the first president of ASEAPS.

The first ASEAPS Congress was held in Manila, the Philippines, in 2006, and the second was held in Kuala Lumpur, Malaysia, in 2007. The ASEAPS Congress then became a biennial event with each ASEAPS member hosting the Congress in turn. With the encouragement and support of 2 past presidents of the IASP—Professor Dr Sir Michael Bond and Professor Troels Staehelin Jensen—pain education initiatives, such as the IASP Southeast Asian Pain Management Camp and the International Pain Fellowship Program on Pain Management at Siriraj Hospital, were established and a strong relationship among leaders in pain management from the ASEAPS member countries was developed.

ASEAPS also played a role in the establishment and development of pain services and the training of pain specialists and pain "champions," which led to the establishment of pain societies in other countries in the region. In 2015, the Myanmar Society for the Study of Pain became a member of ASEAPS, and the Nepal Pain Society became an IASP chapter in 2018. Apart from these 2 countries, ASEAPS also targeted Vietnam, Cambodia, and Laos, by including participants from these countries in the IASP Pain Camps and Pain Fellowship training at Siriraj Hospital, as well as providing support in the form of pain training (eg, Essential Pain Management workshops) and speakers at relevant conferences. Individual IASP and ASEAPS leaders have also encouraged the local pain clinicians in these countries to form a Pain Society, which can later become an IASP chapter and be incorporated into ASEAPS.

6. Common challenges, strengths, and limitations

There were many common challenges in all the ASEAN countries developing their pain services with regard to establishing MDPCs based on the biopsychosocial understanding of pain, some of which have been mentioned in the sections describing each country's development. First, all the clinicians who set up pain management services did so in addition to their "core" responsibilities in their specialty. The commitment of these pioneers was critical to success. Support from colleagues in ASEAPS and IASP was an important factor that helped sustain them in their endeavor.

Second, the biopsychosocial understanding of pain was not taught in undergraduate education for medical and other HCP, thus pain clinicians had to continuously educate not just patients but also colleagues on the biopsychosocial understanding of pain and the concept of chronic pain as a disease. Efforts are being made to lobby tertiary educational institutions in several Southeast Asian countries to include pain education in their undergraduate curriculum, by promoting the adoption of a 4-hour module based on the Essential Pain Management program. The adoption of *ICD-11* with the inclusion of the diagnosis of "Chronic Primary Pain" will also potentially lead to better recognition of chronic pain as a disease.

Other challenges include the attraction of interventional pain procedures—both to patients and clinicians—with its short-term benefits and remuneration rewards. This together with the nonrecognition of Pain Medicine as a specialty in most ASEAN countries has led to a proliferation of pain interventions being done by nonpain specialists as well as pain specialists outside the context of a holistic, biopsychosocial approach for patients with chronic non cancer pain. The biomedical approach aimed at short-term pain relief is still more popular than the biopsychosocial and self-management approach. One of the contributing factors to this is the limited number of clinical psychologists in ASEAN countries, thus many Pain clinics are unable to obtain psychologists' expertise in the management of patients with chronic non cancer pain. Another limitation may be the perception of patients regarding psychological treatments—a study from Singapore showed that "patients could not understand how psychological treatment was related to pain treatment" and queried why they were "paying just to talk."[10]; however, the same study also pointed out that patients who did undergo psychological assessment and treatment reported positive experiences. Thus, education about the role of and need for psychological approaches in the management of chronic pain is necessary, both for patients and HCPs. The IASP Multidisciplinary Pain Toolkit project is an attempt to address these issues and has been elaborated upon in a previous section.

In all 6 ASEAN countries, one common strength that enabled the successful establishment of MDPCs was the enthusiastic and dedicated clinicians who had been exposed to the MDPC model at centers in developed countries, and who were committed to emulate these in their own country. Ongoing training and support from clinicians from established MDPCs was also important. Unique to this region was that many of the pioneers in pain management in these countries already knew each other, mainly through the network of the Confederation of Societies of Anaesthesiologists of ASEAN. As they were setting up services during the same period, these clinicians, who were also friends, provided support for each other by exchanging experiences and expertise, speaking at each others' conferences and training workshops, and providing training positions for colleagues from neighboring countries. This was formalized with the formation of ASEAPS, which led to the strengthening and broadening of the collaboration, particularly with regard to training of younger clinicians.

With the support of the IASP in the form of educational grants, visiting professors and speakers at the ASEAPS congresses, and the establishment of the International Pain Fellowship in Bangkok in 2010 as well as the IASP Southeast Asia Pain Camp in 2011, pain services in the region continued to develop and grow from strength to strength. Further support from IASP is still needed especially in countries without established MPDCs. The Pain Toolkit Project should be expanded to include countries such as Laos and Cambodia. The growing popularity of the International Pain Fellowship in Bangkok points to the need to set up similar funded fellowships in centers with established MPDCs in other Southeast Asian countries such as Malaysia and the Philippines, to enable the training of more young pain clinicians, including those from countries outside of Southeast Asia. Other initiatives focusing on web-based education and mentoring programs could also encourage and accelerate the understanding and adoption of more holistic pain management practices. The IASP could also encourage and support the adoption of national pain strategies (eg, the Malaysian "Pain Free Program")[6] in Southeast Asia and other developing countries by showcasing successful programs as

well as providing guidance and resources to members in developing countries.

7. In summary

The establishment of an MDPC as an integrated interdisciplinary service may not be necessary for every hospital setting, but it has been shown to be a cost-effective approach for the management of patients with chronic pain. Although there has not been any specific study to show cost-effectiveness of MDPCs in this region, the economic benefits of self management programs, the Malaysian experience showed positive trends in terms of return to work and reduction in dependence on the medical system.[3] The development of MDPCs in the ASEAN region has shown this service to be an important step in improving pain management in developing countries because MDPCs provide not only top-quality pain management services, but also pain education and training for clinicians, including primary care physicians, secondary and tertiary care physicians, and pain medicine specialists.

Conflict of interest statement

The authors have no conflicts of interest to declare.

Acknowledgments

The authors gratefully acknowledge the International Association for the Study of Pain for its continued support of The Developing Countries Project: Initiative for Improving Pain Education Grants towards a year of clinical training in pain management for a fellow from ASEAN and the IASP Southeast Asia Pain Management Camp since 2011. The authors thank IASP presidents Professor Dr Michael M. Bond and Professor Dr Troels S. Jensen, and IASP ASEAPS liaison officer Professor Andrew Rice for their vision, guidance, and support. Finally, the authors also thank the World Federation of Societies of Anesthesiologists (WFSA) for jointly funding the Bangkok Fellowship Program with the IASP.

Article history:
Received 30 January 2020
Received in revised form 28 February 2020
Accepted 11 March 2020

References

[1] ASEAN Secretariat. ASEAN key figures 2019 Jakarta. 2019. Available at: https://www.aseanstats.org/category/asean-key-figures. Accessed November 20, 2019.
[2] Cardosa MS, Gurpreet R, Tee HGT. Chronic pain. In: The Third National Health and Morbidity Survey 2006. Kuala Lumpur: Institute for Public Health, Ministry of Health, 2008.
[3] Cardosa M, Osman ZJ, Nicholas M, Tonkin L, Williams A, Abd Aziz K, Mohd Ali R, Dahari NM. Self-management of chronic pain in Malaysian patients: effectiveness trial with 1-year follow-up. Transl Behav Med 2012;2:30–7.
[4] Goh CR, Lee SY. Education in pain and palliative care in the low- and middle-income countries of the Asia Pacific region. Pain 2018;159(suppl 1):S74–80.
[5] IASP. Pain Treatment Services 2009. 2009. Available at: https://www.iasp-pain.org/Education/Content.aspx?ItemNumber=1381. Accessed October 24, 2019.
[6] Malaysia's pain free program (editorial). Lancet 2019;393:1912.
[7] Perry KN, Nicholas MK, Middleton JW. Comparison of a pain management program with usual care in a pain management center for people with spinal cord injury-related chronic pain. Clin J Pain 2010;26:206–16.
[8] Tan EPG, Tan ESL, Ng BY. Efficacy of cognitive-behavioral therapy for patients with chronic pain in Singapore. Ann Acad Med Singapore 2009;38:952–9.
[9] Vijayan R, Delilkan AE. First year's experience with an acute pain service—University Hospital Kuala Lumpur. Med J Malaysia 1994;49:385–400.
[10] Yang SY, Bogosian A, Moss-Morris R, McCracken LM. Mixed experiences and perceptions of psychological treatment for chronic pain in Singapore: skepticism, ambivalence, satisfaction and potential. Pain Med 2015;16:1290–300.
[11] Yang SS. Public versus private on medical care: Borneo Post Online. 2010. Available at: https://www.theborneopost.com/2010/12/12/public-versus-private-on-medical-care. Accessed September 19, 2019.

Establishment of multidisciplinary pain management clinics and training programs in the developing world: experiences from Southeast Asia

ORIGINALITY REPORT

14%	12%	9%	5%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Vanderbilt University Student Paper	2%
2	mymedr.afpm.org.my Internet Source	2%
3	Cynthia Ruth Goh, Sze-Yi Lee. "Education in pain and palliative care in the low- and middle-income countries of the Asia Pacific region", PAIN, 2018 Publication	1%
4	www.researchgate.net Internet Source	1%
5	Submitted to University of Glamorgan Student Paper	1%
6	zenodo.org Internet Source	<1%
7	www.pubfacts.com Internet Source	<1%

8	docplayer.net Internet Source	<1 %
9	link.springer.com Internet Source	<1 %
10	kclpure.kcl.ac.uk Internet Source	<1 %
11	pure.rug.nl Internet Source	<1 %
12	Submitted to University of Edinburgh Student Paper	<1 %
13	fpm.ac.uk Internet Source	<1 %
14	Submitted to Xavier School Student Paper	<1 %
15	isiarticles.com Internet Source	<1 %
16	cris.maastrichtuniversity.nl Internet Source	<1 %
17	publicatio.bibl.u-szeged.hu Internet Source	<1 %
18	www.painaustralia.org.au Internet Source	<1 %
19	files.medelement.com Internet Source	<1 %

20	Charlton, M.. "Nonalcoholic fatty liver disease: A review of current understanding and future impact", Clinical Gastroenterology and Hepatology, 200412 Publication	<1 %
21	www.thaiscience.info Internet Source	<1 %
22	"Pain Management for Clinicians", Springer Science and Business Media LLC, 2020 Publication	<1 %
23	Submitted to La Trobe University Student Paper	<1 %
24	digitalcommons.usu.edu Internet Source	<1 %
25	eprints.usm.my Internet Source	<1 %
26	www.ust.edu.ph Internet Source	<1 %
27	deepblue.lib.umich.edu Internet Source	<1 %
28	painsa.org.za Internet Source	<1 %
29	espace.library.uq.edu.au Internet Source	<1 %
30	so03.tci-thaijo.org	

	Internet Source	<1%
31	www.anesthai.org Internet Source	<1%
32	www.mdpi.com Internet Source	<1%
33	www.metas.ch Internet Source	<1%
34	www.philstar.com Internet Source	<1%
35	www2.si.mahidol.ac.th Internet Source	<1%
36	docshare.tips Internet Source	<1%
37	en.unionpedia.org Internet Source	<1%
38	iasp.files.staging.cms-plus.com Internet Source	<1%
39	m.amedeo.com Internet Source	<1%
40	www.eapcnet.eu Internet Source	<1%
41	www.sld.cu Internet Source	<1%

42	Counsell, David, Pamela Macintyre, and Harald Breivik. "Organization and role of acute pain services", Clinical Pain Management Second Edition Practice and Procedures, 2008. Publication	<1%
43	Douglas W. Reader, Dimitrios G. Spigos, William F. Bennett, Charles F. Mueller, Kuldeep K. Vaswani. "The graveyard shift: experience with a night float system", Emergency Radiology, 2014 Publication	<1%
44	Gwyn N. Lewis, Debbie Bean, Rebecca Mowat. "How Have Chronic Pain Management Programs Progressed? A Mapping Review", Pain Practice, 2019 Publication	<1%
45	Michael K. Nicholas, Ali Asghari, Fiona M. Blyth, Bradley M. Wood et al. "Self-management intervention for chronic pain in older adults: A randomised controlled trial", Pain, 2013 Publication	<1%
46	Raghu Dharmapuri Tirumala, Piyush Tiwari. "Importance of Land in SDG Policy Instruments: A Study of ASEAN Developing Countries", Land, 2022 Publication	<1%

47 K. Ledermann, Mayron Piccolo, R. Recabarren, J. Blanc, Ch. Martin-Soelch, H. Sprott. "Interactions between self-reported pain intensity and affects in daily life: a pilot study comparing individuals with chronic pain with primary and secondary pain disorders", Research Square Platform LLC, 2023 <1%
Publication

Exclude quotes	On	Exclude matches	< 5 words
Exclude bibliography	On		