# ผลลัพธ์ระยะยาวการฝึกอบรมการวางแผนดูแลล่วงหน้าของบุคลากรสุขภาพด้านประคับประคองและโรคไตในประเทศไทย

## Long-term Outcome of Advance Care Plan Training Among Palliative and Renal Healthcare Professionals in Thailand

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**บทคัดย่อ**

**ภูมิหลังและเหตุผล**: การวางแผนการดูแลล่วงหน้า (Advanced Care Planning: ACP) เป็นองค์ประกอบสำคัญของการดูแลแบบประคับประคอง ในประเทศไทยการบูรณาการ ACP ยังเผชิญกับความท้าทาย โดยเฉพาะความรู้ ทัศนคติ และการปฏิบัติ (Knowledge, Attitude, and Practice: KAP) ของบุคลากรสุขภาพซึ่งมีบทบาทสำคัญต่อประสิทธิภาพของการสื่อสาร ACP

**วัตถุประสงค์**: เพื่อประเมินประสิทธิผลของการฝึกอบรม ACP โดยใช้ modified Serious Illness Conversation Guide (mSICG) ต่อ KAP ในกลุ่มบุคลากรด้านประคับประคอง (Palliative Care: PC) และโรคไตเรื้อรัง (Chronic Kidney Disease: CKD) ใน 12 เขตสุขภาพของประเทศไทย

**วิธีการศึกษา**: การวิจัยแบบกึ่งทดลอง ระหว่าง 16 ตุลาคม 2566–31 มีนาคม 2567 โดยจัดอบรม mSICG ประกอบด้วยการบรรยาย วิดีทัศน์ และการทำบทบาทสมมติ ประเมิน KAP 3 ครั้ง ได้แก่ ก่อนอบรม (T0) หลังอบรมทันที (T1) และ 3 เดือนหลังอบรม (T2) ใช้สถิติเชิงพรรณนาและการวิเคราะห์แบบวัดซ้ำ โดยอาศัยแบบจำลองเชิงเส้นทั่วไป (general linear model) และ Bonferroni สำหรับการเปรียบเทียบแบบเป็นคู่

**ผลการศึกษา**: มีผู้ที่ทำแบบประเมินครบทั้งสามช่วงเวลา 167 คน จาก 779 คน ในด้านความรู้คะแนนเฉลี่ยลดลงที่ T2 (7.89±1.13, 7.90±1.01 และ 7.33±1.00; p<0.001) ด้านทัศนคติคะแนนเฉลี่ยเพิ่มขึ้นใน T1 และลดลงที่ T2 (3.69±0.48, 3.85±0.58, 3.52±0.42; p<0.001) ด้านการปฏิบัติคะแนนเฉลี่ยเพิ่มขึ้นอย่างต่อเนื่องในทุกช่วงเวลา (3.32±1.34, 3.36±1.43, 3.61±1.17; p=0.005) โดยเฉพาะในกลุ่มบุคลากรสุขภาพที่ดูแลผู้ป่วย CKD (2.11±1.42, 2.45±1.43, 2.83±1.31; p=0.005)

**สรุปผลและข้อเสนอแนะ**: การอบรม mSICG-ACP ช่วยเพิ่มความรู้และทัศนคติในระยะสั้น แต่ผลดังกล่าวลดลงในระยะยาว ในขณะที่การปฏิบัติ ACP มีแนวโน้มดีขึ้น ควรจัดกิจกรรมทบทวนความรู้และทักษะอย่างต่อเนื่องเพื่อคงผลลัพธ์ในระยะยาว

**คำสำคัญ**: การวางแผนการดูแลล่วงหน้า, ความรู้, ทัศนคติ, การปฏิบัติ

ABSTRACT

**Background and rationale**: Advance care planning (ACP) is crucial for palliative care (PC) patients. Nonetheless, integrating ACP into clinical practice remains challenging in Thailand. Adequate knowledge, attitude, and practice (KAP) among healthcare professionals (HCP) are essential for effective ACP communication.

**Objective**: To evaluate the effectiveness of the modified Serious Illness Conversation Guide (mSICG) training on KAP for HCP to deliver ACP for PC and chronic kidney disease (CKD) across Thailand's 12 health regions.

**Methods**: A quasi-experimental study was conducted between 16 October 2023 to 31 March 2024. The mSICG-ACP workshops included interactive lectures, video feedback, and role-play sessions. Participants completed KAP assessments at pre-training (T0), immediately post-training (T1), and three months post-training (T2). Descriptive statistics and repeated-measures analysis were conducted using a general linear model, with Bonferroni adjustments performed for pairwise comparisons.

**Results**: Of 779 participants, 167 completed all three KAP assessments. In the knowledge domain, mean scores declined over time ($7.89\pm1.13$, $7.90\pm1.01$, and $7.33\pm1.00$; $p<0.001$). In the attitude domain, the overall mean score increased at T1 and decreased at T2 ($3.69\pm0.48$, $3.85\pm0.58$, $3.52\pm0.42$, $p<0.001$). For practice, the overall mean score showed an increasing trend through T1 and T2 ($3.32\pm1.34$, $3.36\pm1.43$, $3.61\pm1.17$, $p=0.005$), especially in CKD HCP ($2.11\pm1.42$, $2.45\pm1.43$, $2.83\pm1.31$, $p=0.005$).

**Conclusions and recommendation**: The mSICG-ACP workshop enhanced participants' knowledge and attitudes in the short term, but these effects decreased over time, whereas ACP practices showed a positive long-term trend. These findings support expanding mSICG-ACP training to other chronic disease HCP and reinforcement to sustain KAP.

**Keywords**: Advance care planning, knowledge, attitude, practice

## Background and rationale

Palliative care (PC) is a crucial part of integrated, people-centred health services at all levels of care and aims to relieve suffering, whether it is caused by cancer, frailty due to old age, major organ failure, or end-stage chronic illness such as end-stage renal disease (ESRD).[1] Discussions regarding end-of-life care require medical information and recommendations from professionals such as oncologists and nephrologists.[2]

Advance care planning (ACP) is a process that enables individuals to state their preferences for future medical care, especially when they cannot make decisions by themselves. ACP needs to be integrated into palliative care, since it guides treatment decisions and ensures that care aligns with the patient's expressed wishes, especially in situations where they may be unable to make decisions by themselves.[3]

In Thailand, the prevalence and implementation of ACP in communities remain low. One previous study found that only 10.76% of dementia patients had an ACP prior to consultation with the PC team,[4] and only 3.0% of patients at a family medicine clinic had completed an advance directive.[5] The cultural avoidance of death and dying, traditionally viewed as a taboo subject within the Thai context, presents a significant barrier to the widespread adoption of ACP, as both individuals and families demonstrate pronounced reluctance to engage directly with end-of-life care issues. These findings highlight the limited consumption of ACP in Thai communities.[6,7]

Many studies in Thailand and internationally have examined knowledge, attitudes, and practices (KAP) related to ACP, revealing a variety of KAP levels due to cultural and social contexts.[6–8] Thai healthcare professionals' (HCP) limited knowledge of advance directives and the available resources for advance care planning demonstrates notable gaps in both training and information provision.[11]

Overall, ACP knowledge in Thailand is suboptimal, attitudes are influenced by cultural factors, and practice faces multiple challenges. Comparative evidence emphasises the importance of policy support, provider education, and continuous public awareness to enhance ACP adoption and effectiveness. Meanwhile, Western countries such as the United States and Australia have demonstrated increased levels of ACP knowledge due to continuous promotion and information dissemination,[12] appropriate policy support, and training programmes which have enhanced ACP capabilities among HCP and the general population.[13]

Additionally, healthcare providers often lack the training and confidence to initiate ACP discussions with patients, compounded by insufficient institutional support and clear guidelines. The modified Serious Illness Conversation Guide (mSICG) is a structured framework that assists healthcare providers in delivering prognostic details, understanding patient preferences and values, and offering care recommendations aligned with individual treatment goals.[14]

The mSICG has been shown to strengthen healthcare providers' competencies in conducting serious illness conversations and to improve their familiarity with the checklists, thereby supporting adherence to evidence-based communication practices.[15,16] Furthermore, the guide comprises adaptable validated open-ended questions, derived from patient-tested language and established best practices in palliative care,

designed to broaden the scope of dialogue beyond end-of-life care procedures.[17] Nonetheless, communication about ACP using the mSICG approach is a new concept in Thailand.

Concurrently, the rising prevalence of chronic kidney disease (CKD) in Thailand highlights an increasing need for multidisciplinary support to guide patients in choosing between renal replacement therapy and conservative palliative care. Greater awareness and integration of ACP for patients with CKD are essential to improve access to appropriate services and ensure high-quality, goal-concordant care.[18] In response, several organisations have collaborated to conduct ACP training with PC and CKD professionals in Thailand.[19]

ACP is important for the end-of-life care, by the way KAP of healthcare professionals are crucial for ACP initiation and discussion. This is the first mSICG-workshop which was conducted for both PC and CKD professionals in Thailand. The authors aim to evaluate the long-term KAP of both disciplines after conducting the mSICG-workshop.

## Methods

### Study design and participants

A quasi-experimental study was conducted between 16 October 2023 to 31 March 2024 with doctors and nurses who routinely provided PC or CKD from across all 12 health regions in Thailand. The Thailand National Health Commission Office (NHCO) promotes ACP to both HCP and the public and offers financial support to provide ACP workshops in each health region with 60 HCPs per region. The study participants included doctors and nurses who directly provided palliative or renal care, regularly worked in that unit, had relevant work experience, and attended this workshop. Administrative staff were excluded. Ethical approval was obtained from the Ethics Committee of Khon Kaen University (HE661425).

### Measurement

The KAP questionnaire of ACP for medical personnel was adapted from Alethea Yee's questionnaire developed by Raksasataya A.[20,21] The tool was validated by three experts and demonstrated a content validity index (CVI) of 0.92, indicating excellent content validity. The self-administered paper-based questionnaire consisted of four parts to collect data on the basic demographics of the professionals and knowledge, attitude, and practice of ACP. The first part included the demographics of the participants as age, gender, level of working in the hospital, the role of medical professionals (PC doctors, PC nurses [PCN], CKD doctors, CKD nurses, and others), and duration of working experience. The section to gather data on the participants' knowledge contained nine items on a 2-point scale (0: No, 1: Yes). The scores for each item were summed, with higher scores indicating higher knowledge (score range 0-9). The third part collected data on the participants' attitudes and consisted of 16 items using a 5-point Likert scale (1: strongly disagree, 2: disagree, 3: no comment, 4: agree, 5: strongly agree), with higher scores indicating a good attitude. The scores from all negative questions in the attitude domain were converted to positive scores and 15 items were summarised as attitude scores, except for the item

1, "I would like to conduct ACP discussions more than advance directive (AD)" (attitude score range 1-5). The final part as practiced in the ACP discussion contained eight items. The first five items summarised the practice score, while the remaining three items addressed the identity of the initiator to start an ACP conversation, ACP training, and factors that improved confidence in the ACP discussions (practice score range 0-5).

### Programme implementation and evaluation

This study implemented a single-day, six-hour intensive training workshop designed to enhance provider competency in ACP through mSICG. The workshop was facilitated by 6 ACP trainers from Karunruk Palliative Care Center (KPC). The intervention consisted of 3 parts:

- A 2-hour interactive lecture which covered shared decision-making, ACP, and the mSICG.
- A video which highlighted the role of palliative care in translating medical information and facilitating shared decision-making—especially when patient capacity is limited—foregrounding the ethical, communicational, and emotional challenges of aligning prognostic realities with patient values, often through conversations about goals of care and the withdrawal or withholding of life-sustaining treatments. A central theme was autonomy and its limits, reflecting clinician moral distress and the emotional burden on families. Participants reflected and shared what they learned with the other participants, which took 1 hour.
- The core of the training involved extensive experiential learning through 3-hour role-play, which contained structured small-group role-playing based on two distinct case scenarios, followed by facilitated feedback sessions.

KAP assessments were administered to measure at three time points: pre-training (T0), immediately post-training (T1), and 3 months after training (T2).

### Statistical analysis

Descriptive data was analysed and presented using frequency and percentage. KAP comparisons were conducted for each time point, and scores were analysed with general linear model analysis, with Bonferroni adjustments performed for pairwise comparisons. A p-value of less than 0.05 was considered statistically significant. All analyses were performed with STATA version 15 (Stata Corp, College Station, TX).

## Results

Of 779 participants, 167 completed all three time point KAP questionnaires. From the data, 94.6% of participants were female and most participants were employed in community hospitals (50.3%). Regarding professional roles, over half were PC nurses (65.9%) followed by chronic kidney disease (CKD) nurses (24.6%), PC physicians (8.4%), and CKD physicians (1.2%). One-third of the participants (37.7%) reported 6 - 10 years of PC work experience and 13.8% had PC work experience less than 1 year of PC work experience (Table 1).

**Table 1** Baseline characteristics (n=167)

| Characteristic | Number (%) |
|---|---|
| **Sex** | |
| Male | 9 (5.4) |
| Female | 158 (94.6) |
| **Level of hospital** | |
| Tertiary Hospital | 19 (11.4) |
| General Hospital | 63 (37.7) |
| Community Hospital | 84 (50.3) |
| Others | 1 (0.6) |
| **Professional** | |
| PC physicians | 14 (8.4) |
| CKD physicians | 2 (1.2) |
| PC nurses | 110 (65.9) |
| CKD nurses | 41 (24.6) |
| **PC work experience** | |
| Less than 1 year | 23 (13.8) |
| 1 – 3 years | 38 (22.8) |
| 3 – 5 years | 26 (15.6) |
| 6 - 10 years | 63 (37.7) |
| 11- 15 years | 10 (6.0) |
| 16 – 20 years | 3 (1.8) |
| More than 20 years | 4 (2.4) |

Among the 167 participants, the mean knowledge score did not differ significantly between T0 and T2 (7.89±1.13 vs. 7.90±1.01, p=0.954). However, a significant decline was observed at T2 (7.33±1.00, p<0.001). In detail, the PC group's mean score slightly decreased immediately post-training (8.08 ± 1.10 vs. 8.00 ± 0.92, p = 0.496) and continued to decrease significantly at T2 (7.52 ± 0.67, p<0.001). In the CKD group, a small non-significant increase was found between T0 and T1 (7.35 ± 1.04 vs. 7.60 ± 1.20, p= 0.226), followed by a significant decrease at T2 (6.79 ± 1.50, p=0.034). Overall, the knowledge scores decreased over time across all groups, indicating a waning effect for training retention (Table 2).

**Table 2** Comparison of knowledge scores on Advance Care Planning pre-training, immediately post-training and 3 months after training

| Professional | T0 | T1 | T2 | $p$-value[a] | T0 vs T1 | | T0 vs T2 | | T1 vs T2 | |
| | Mean±SD | Mean±SD | Mean±SD | | Mean different[b] | $p$-value[b] | Mean different[b] | $p$-value[b] | Mean different[b] | $p$-value[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| All (n=167) | 7.89±1.13 | 7.90±1.01 | 7.33±1.00 | <0.001* | 0.01 | 0.954 | -0.56 | <0.001* | -0.57 | <0.001* |
| PC (n=124) | 8.08±1.10 | 8.00±0.92 | 7.52±0.67 | <0.001* | -0.08 | 0.496 | -0.56 | <0.001* | -0.48 | <0.001* |
| CKD (n=43) | 7.35±1.04 | 7.60±1.20 | 6.79±1.50 | 0.002* | 0.26 | 0.226 | -0.56 | 0.034* | -0.81 | 0.004* |

a: General lineal model analysis, b: Bonferroni adjustments, * Statistically significant p-value < 0.05

Among all participants, the mean attitude score significantly increased immediately after training compared with pre-training (3.69 ± 0.48 vs. 3.85 ± 0.58, p=0.002). However, a significant decrease was observed at T2 (3.52 ± 0.42, p < 0.001). In the PC group, the mean attitude score also showed a significant improvement at T1 (3.79 ± 0.49 vs. 3.95 ± 0.50, p=0.007), followed by a significant reduction at T2 (3.59 ± 0.42, p<0.001). In contrast, the CKD group demonstrated a non-significant change immediately after training (3.41 ± 0.31 vs. 3.56 ± 0.68, p = 0.117) and a non-significant decrease at T2 (3.32 ± 0.37, p=0.214). Overall, while immediate post-training scores improved, they tended to decline over time, with statistical significance observed for all participants (Table 3).

**Table 3** Comparison of attitude scores pre-training, immediately post-training and 3 months after training

| Professional | T0 | T1 | T2 | $p$-value[a] | T0 vs T1 | | T0 vs T2 | | T1 vs T2 | |
| | Mean±SD | Mean±SD | Mean±SD | | Mean different[b] | $p$-value[b] | Mean different[b] | $p$-value[b] | Mean different[b] | $p$-value[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| All (n=167) | 3.69±0.48 | 3.85±0.58 | 3.52±0.42 | <0.001* | 0.16 | 0.002* | -0.17 | <0.001* | -0.33 | <0.001* |
| PC (n=124) | 3.79±0.49 | 3.95±0.50 | 3.59±0.42 | <0.001* | 0.16 | 0.007* | -0.20 | <0.001* | -0.36 | <0.001* |
| CKD (n=43) | 3.41±0.31 | 3.56±0.68 | 3.32±0.37 | 0.024* | 0.16 | 0.117 | -0.08 | 0.214 | -0.23 | 0.017* |

a: General lineal model analysis, b: Bonferroni adjustments, * Statistically significant p-value < 0.05

Among all participants, the mean practice score significantly increased from T0 to T2 (3.32 ± 1.34 vs. 3.61 ± 1.17, p=0.007). In the PC group, the mean practice score between T0 and T2 improved, but not statistically significantly. Meanwhile, the CKD group demonstrated a large significant change at T0, T1, and T2 (2.11 ± 1.42, 2.45 ± 1.45 and 2.83 ± 1.31, p = 0.005, respectively) (Table 4).

**Table 4** Comparison of practice scores pre-training, immediately post-training and 3 months after training

| Professional | T0 | T1 | T2 | $p$-value[a] | T0 vs T1 | | T0 vs T2 | | T1 vs T2 | |
| | Mean±SD | Mean±SD | Mean±SD | | Mean different[b] | $p$-value[b] | Mean different[b] | $p$-value[b] | Mean different[b] | $p$-value[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| All (n=167) | 3.32±1.34 | 3.36±1.43 | 3.61±1.17 | 0.005* | 0.05 | 1.000 | 0.29 | 0.007* | 0.25 | 0.030* |
| PC (n=124) | 3.72±1.04 | 3.68±1.28 | 3.88±1.01 | 0.111 | -0.04 | 1.000 | 0.17 | 0.318 | 0.20 | 0.147 |
| CKD (n=43) | 2.11±1.42 | 2.45±1.43 | 2.83±1.31 | 0.005* | 0.32 | 0.433 | 0.71 | 0.004* | 0.39 | 0.217 |

a: General lineal model analysis, b: Bonferroni adjustments, * Statistically significant p-value < 0.05

The proportion of participants who reported having completed ACP or AD for themselves increased after the training. Overall, the rate rose from 52.4% at T0 to 62.3% at T2. In the PC group, the proportion increased slightly from 59.5% to 62.9%. A more notable increase was observed in the CKD group, rising from 31.0% before increasing to 60.5% three months later (Figure 1).
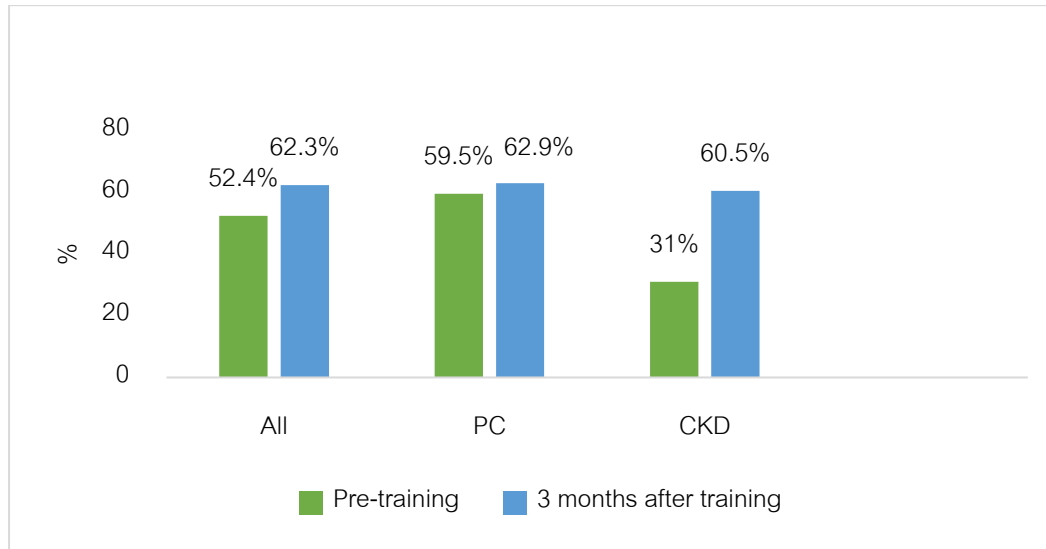


**Figure 1** Participants reported having completed ACP or AD for themselves at pre-training and 3 months after training
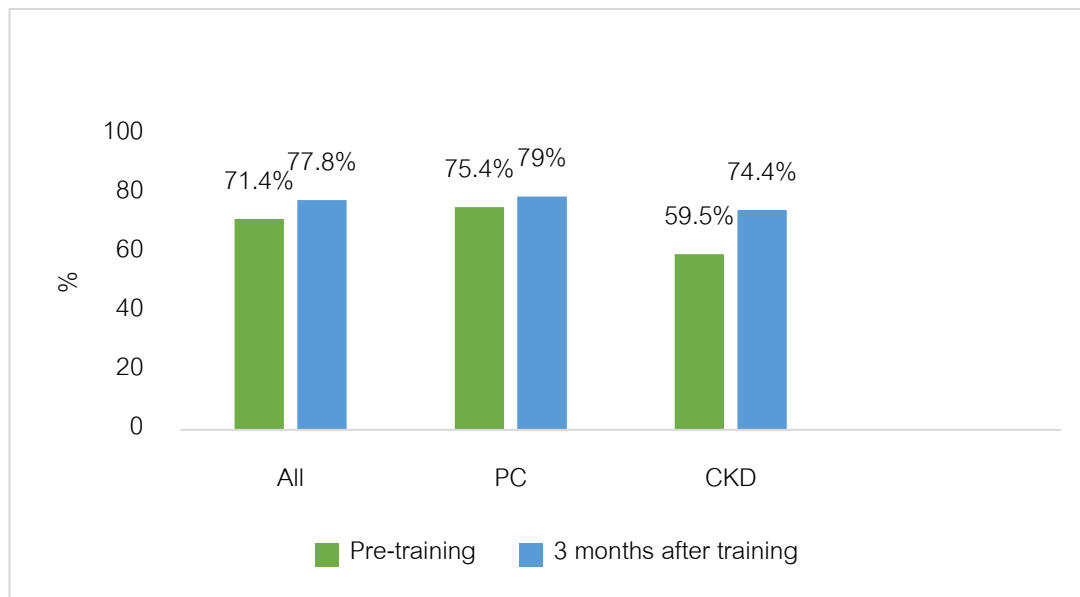


**Figure 2** Initiation of ACP or AD discussions with patients, categorized by participants professional groups at pre-training and 3 months after training

The number of participants who reported initiating ACP or AD discussions with patients increased after the training. Overall, the rate increased from 71.4% at T0 to 77.8% at T2. In the PC group, the proportion

increased slightly from 75.4% to 79.0%. In the CKD group, the rate increased more noticeably from 59.5% before training to 74.4% at T2 (Figure 2).

Discussion

Of the 779 participants, 167 completed all three time point KAP questionnaires. The mean knowledge and attitude levels improved in T1 but decreased after 3 months at T2. The mean practice score of all participants had an increasing trend, especially in the CKD group.

Previous studies confirming that mSICG improves communication practices and integrating those conversations into routine outpatient practice resulted in broad access to more, earlier, and better serious illness conversations for patients and enhances clinician skills and confidence.[22] Similarly, Chan et. al. (2019) demonstrated that training for HCP in ACP had positive effects on knowledge, attitudes, and skills.[23]

The design of the multi-modal training programme, which incorporated diverse formats such as interactive lectures, video film reflection, role-playing exercises, active reflection, and feedback was intended to support the varied learning styles of the participants in order to enhance knowledge retention and application.[24-25] Moreover, performing role play constitutes an assessment at the "shows how" level of Miller's pyramid,[26] since it allows participants to demonstrate their understanding of the mSICG in an authentic simulation setting. Previous studies, both role-play and video feedback method produced better effects on awareness, attitude, performance, and communication skills.[27,28,23]

Two-thirds of the participants from both disciplines had at least 3 years of palliative care experience, which explained their good knowledge and attitudes toward ACP, similar to the Duerden et. al. study.[29] Regarding experience with ACP discussions, palliative care was the discipline that most frequently initiated ACP, while the CKD team rarely initiated ACP independently. In the present study, a ceiling effect was demonstrated in the short-term outcomes of the palliative care group, which was already familiar with these conversations.

The aim of this study was to assess long-term effects on the retention of knowledge, attitudes, and practices. A key finding is the observed decline in knowledge and attitude scores at the three-month follow-up, a common phenomenon of skill decay when learning is not consistently reinforced. Hermann Ebbinghaus demonstrated this through the Forgetting Curve, which shows that forgetting occurs most rapidly within the first nine hours after learning, as memory traces gradually fade over time if they are not used or reinforced.[30] Following completion of the training, participants were not provided with dedicated opportunities to reflect on the value of conducting ACP, engage in self-reflection, or receive peer support. The absence of these supportive structures may have contributed to the observed decline in attitude scores over time.[30]

Decay is evident in both psychomotor and cognitive domains of the skills.[31] Consistent with the findings of Okada et al., knowledge scores increased significantly immediately post-training and, while showing a slight decrease at the 6-month follow-up, this change was not statistically significant. While the study by Leah S.

Millstein et. al. reported immediate post-training improvements in participants' ACP knowledge, it did not include a measure to evaluate the sustained retention of that knowledge over time.[32]

At the T0 time point, only 59.5% of CKD professionals-initiated ACP/AD conversations with patients, significantly lower than the 74.6% rate observed among PC professionals. Consistent with previous studies, our findings show there is a low prevalence of CKD professionals routinely engaging in ACP discussions with their patients.[33] One study showed that 73% of nephrology fellows reported a lack of training in how to communicate with dying patients and 72% reported insufficient preparation to provide end-of-life care to patients ending dialysis treatment.[34] However, at the T2 time point, the mean practice score improved and the percentage of all participants who initiated ACP/AD conversations with patients grew from 67.9% to 77.0%. Similarly, Okada et al. found that the number of ACP discussions and completions increased significantly 6 months after training.[35]

This result strongly supports expanding this training beyond PC professionals to other specialists who care for patients with serious illnesses. The mSICG-ACP workshop is a valuable catalyst for implementing ACP, especially among other specialists. However, to ensure long-term impact, educational efforts must be coupled with sustained organisational support and integration into routine clinical workflows. [37] From our study, we recommended that ACP must be integrated as a standard of patient-centred care for all patients with serious illness.

## Limitations

Only 167 of 779 participants completed all three time points, which may have introduced selection bias, as those who remained were likely more motivated or engaged in ACP than those who stopped participating. Future studies should validate self-reported practices using objective measures such as chart audits or direct observations. Finally, patient-level outcomes, such as goal-concordant care and satisfaction, were not assessed. Future research should include these key endpoints to provide a more comprehensive evaluation of training impact.

## Conclusions

The mSICG-ACP workshop enhanced participants' knowledge and attitudes outcomes immediately after training, but these effects decreased over time, whereas ACP practices showed a positive long-term trend. The CKD group improved their practice within 3 months after training. These findings support the expansion of mSICG-ACP training to other specialist providers while highlighting the need for ongoing reinforcement to maintain knowledge, attitudes, and skills.

## Recommendation

The mSICG-ACP workshop effectively enhanced HCP's competence in ACP. However, declining knowledge and attitudes over time highlight the need for post-training reinforcement. Integrating mSICG-based ACP education into regular professional development and expanding it to other chronic disease teams could

strengthen communication skills, sustain positive attitudes, and promote patient-centred palliative care across healthcare settings.

**Body of knowledge**

This study contributes new evidence on the impact of structured communication training using the modified Serious Illness Conversation Guide (mSICG) on HCP knowledge, attitudes, and practices toward Advance Care Planning (ACP). The findings highlight that interactive, skills-based training can effectively enhance ACP competence across multidisciplinary teams, especially those managing chronic diseases. However, the observed decline in knowledge and attitudes over time emphasises the importance of continuous education and reinforcement. These insights provide a foundation for developing sustainable ACP training models within Thailand's healthcare system.

**Acknowledgments**

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