Nexus of Thai Health Sciences
Vol. 1 No.6 November – December 2026

RESEARCH ARTICLE

Development of a Post-Discharge Care Model for Patients with Substance Use Disorders after the Detoxification Phase to Prevent Relapse, Soi Phisai Hospital, Bueng Kan Province

Phatcharaporn Chanlun[1*]

[1]Senior Professional Level Physician, Soi Phisai Hospital, Soi Phisai District, Bueng Kan Province

*Corresponding author

Received: 15 October 2026 **Revised:** 17 October 2026 **Accepted:** 10 November 2026

Citation: Chanlun P. Development of a post-discharge care model for patients with substance use disorders after the detoxification phase to prevent relapse, Soi Phisai Hospital, Bueng Kan Province. Nexus of Thai Health Sciences. 2026;1(6):1-14.

Abstract

This research and development study aimed to examine the situation and problems, develop a model, and evaluate the outcomes of post-discharge care for patients with substance use disorders after the detoxification phase to prevent relapse at Soi Phisai Hospital, Bueng Kan Province, from January to September 2026. The study had four phases: situation analysis, model development, implementation, and evaluation. Purposively selected participants were 30 discharged patients, 30 family caregivers, and 15 multidisciplinary team and community network members. Instruments were a semi-structured interview guide, a relapse prevention self-efficacy questionnaire, a follow-up record with urine drug test results, and a satisfaction questionnaire. Data were analyzed using descriptive statistics, paired t-test, Fisher's exact test, and content analysis.

Main problems were missed appointments, no hospital-to-community follow-up system, limited family supervision, and return to high-risk environments. The developed "Soi Phisai Seamless Care Model" had five components: individualized discharge planning and relapse risk assessment, family preparation, technology-assisted follow-up, community home visits, and warning-sign management with re-entry into treatment. After implementation, the 3-month relapse rate decreased from 43.33% to 16.67% (p-value = 0.047), and retention increased from 63.33% to 86.67% (p-value = 0.072). Self-efficacy increased significantly (mean±S.D. 2.85±0.52 to 4.12±0.41; p-value <0.001), and satisfaction was at the highest level (4.46±0.48). Seamless hospital-to-community care with family participation and technology-assisted follow-up was associated with reduced relapse. The model should be adopted as standard practice in the drug clinic, and further studies with larger samples and concurrent comparison groups are recommended.

Keywords: Substance use disorders, Detoxification, Relapse prevention, Seamless care

Introduction

Drug problems remain a global challenge with wide-ranging effects on society, the economy, and public health. An estimated 296 million people worldwide, or 5.8% of the population aged 15-64 years, used drugs at least once in 2021, with cannabis the most commonly used substance, followed by opioids and amphetamine-type stimulants.[1] A major concern is relapse after treatment, which occurs in 40-60% of patients within the first year.[2] Factors associated with relapse include personal factors, co-occurring psychiatric disorders, stress, having a social network that uses drugs, and the lack of an effective post-treatment follow-up system.[3]

In Thailand, drug problems continue to spread, particularly in provincial areas.[4] In 2023, 116,850 people received treatment nationwide, an increase of 7.3% over the previous year. Methamphetamine (yaba) was the most commonly used substance (84.6%), and the most affected age group was 20-29 years, which is the working age.[4] The relapse rate among those who completed treatment is 30-40% within 1 year,[5] and the treatment retention rate is 65%, below the 80% target.[6] Factors that cause patients to be lost to follow-up and to relapse include a lack of motivation to stop using drugs, a lack of family support, and living in an environment that facilitates drug use.[6] The Ministry of Public Health therefore established the Service Plan for substance use disorders, 2023-2027, which emphasizes seamless care and increased treatment retention,[7] and which requires integrated cooperation among families, communities, and related agencies.[8]

Bueng Kan is a border province adjacent to the Lao People's Democratic Republic and is therefore at risk of drug smuggling. A total of 1,564 people received treatment, or 326.4 per 100,000 population, higher than the national average, and yaba was the most commonly found substance (92.4%).[9] Soi Phisai District is a transit route connecting to other districts and provinces and is therefore used for transporting and storing drugs. In addition, the growth of rubber-processing factories has drawn in migrant workers. The numbers of patients receiving rehabilitation at Soi Phisai Hospital, under both the voluntary and compulsory treatment systems, in fiscal years 2021-2023 were 438, 155, and 233, respectively; the number in fiscal year 2023 was 50.3% higher than in fiscal year 2022 (Soi Phisai Hospital, 2025). The most common age group was 25-29 years, and the most common occupation was agriculture.

Soi Phisai Hospital currently uses the "Naka Lom Rak Model" for treatment during the detoxification (Detox) phase, which lasts 10-14 days, and plans discharge along three

pathways: 1) referral to intermediate care (Intermediate Care: IMC) at Mini-Thanyarak Seka; 2) referral to long-term care (Long Term Care: LTC) at Thanyarak Udon Thani Hospital or the Khon Di Khuen Sangkhom Camp in Soi Phisai District; and 3) discharge to the community. All groups are scheduled for follow-up at the drug clinic. However, problems remain: patients attend appointments but still test positive for drugs; patients miss treatment or medication appointments and are prosecuted again; the dropout rate has increased; families lack time for supervision; behavioral and psychiatric problems have increased; and treatment facilities remain inadequate. These findings are consistent with a study reporting that missed appointments and the absence of an effective follow-up system are major causes of relapse.[10] Meanwhile, developing a seamless follow-up system, using technology, and involving families and communities can increase treatment retention and reduce relapse.[11-13]

The researcher therefore developed a post-discharge care model for patients with substance use disorders after the detoxification phase to prevent relapse at Soi Phisai Hospital, so that patients receive continuous care from the hospital to the community, relapse rates are reduced, and the quality of life of patients and their families is improved. The results are expected to guide continuous post-discharge care for patients with substance use disorders at the hospital and at service units in nearby areas with similar contexts.

Research Objectives

1. To examine the situation and problems of post-discharge care for patients with substance use disorders after the detoxification phase at Soi Phisai Hospital, Bueng Kan Province
2. To develop a post-discharge care model for patients with substance use disorders after the detoxification phase to prevent relapse
3. To evaluate the outcomes of the developed model, namely the relapse rate, the treatment retention rate, self-efficacy in relapse prevention, and patient satisfaction

Research Methods

This was a research and development study conducted at the drug clinic and inpatient ward of Soi Phisai Hospital, Bueng Kan Province, from January to September 2026, a total of 9 months. The development framework drew on the Department of Medical Services' guideline for treating patients with substance use disorders in the detoxification phase,[1 4] the concept of seamless care,[7] and family and community participation.[11] The work was divided into 4

phases: Phase 1, situation and problem analysis (January-February 2026); Phase 2, model development (March 2026); Phase 3, model implementation (April-August 2026); and Phase 4, evaluation and model refinement (September 2026).

Population

The population comprised patients with substance use disorders who completed detoxification and were discharged from Soi Phisai Hospital, primary family caregivers, and the multidisciplinary team and network partners in Soi Phisai District, totaling 126 people, and 45 network partner personnel.

Sample

The sample was selected by purposive sampling and comprised 3 groups: 1) 30 patients with substance use disorders who completed detoxification and were discharged, with the sample size calculated using G*Power; 2) 30 primary family caregivers; and 3) 15 members of the multidisciplinary team and network partners, namely physicians, professional nurses, psychologists, pharmacists, staff of sub-district health promoting hospitals (SHPHs), village health volunteers (VHVs), and community leaders. Participants were selected according to the inclusion criteria during the study period.

For outcome comparison, retrospective data were drawn from the medical records of 30 similar patients discharged after detoxification in fiscal year 2025, to serve as a pre-development comparison group.

Inclusion Criteria

Aged 18 years or older, diagnosed with a substance use disorder and having completed detoxification as planned, able to communicate in Thai, having a contactable telephone number, residing in Soi Phisai District, and giving consent to participate in the research.

Exclusion Criteria

Severe psychiatric symptoms requiring specialist referral, relocation outside the area, or withdrawal from the research.

Research Instruments

The instruments comprised 1) a general information and treatment record form; 2) a semi-structured interview guide for patients, caregivers, and the multidisciplinary team on the situation, problems, and needs for post-discharge care; 3) a 20-item self-efficacy questionnaire on relapse prevention using a 5-point rating scale; 4) a post-discharge follow-up record covering appointment attendance, urine drug test results, relapse, emergency department visits or readmissions, and return to work or study; and 5) a 10-item patient satisfaction questionnaire on the care model. Mean scores for the assessment and questionnaire were interpreted at 5 levels: 1.00-1.80 lowest, 1.81-2.60 low, 2.61-3.40

moderate, 3.41-4.20 high, and 4.21-5.00 highest, according to Best's criteria.

The instruments were checked for content validity by 3 experts, namely a psychiatrist, a professional nurse specializing in substance use treatment, and a nursing instructor in mental health and psychiatry. The item-level Index of Item-Objective Congruence (IOC) ranged from 0.67 to 1.00, with an overall value of 0.84. The self-efficacy questionnaire and the satisfaction questionnaire were tried out with 10 patients similar to the sample, yielding Cronbach's alpha coefficients of 0.87 and 0.89, respectively.

Data Collection

Phase 1: The researcher reviewed medical records and retrospective treatment statistics, conducted in-depth interviews with patients, caregivers, and the multidisciplinary team (approximately 30-45 minutes each), and held 2 focus groups.

Phase 2: The data obtained were used to draft the model together with the multidisciplinary team and network partners through 2 workshops, and experts reviewed its appropriateness.

Phase 3: Personnel and network partners were trained before the model was implemented with patients discharged after detoxification. Self-efficacy was assessed before discharge, and each patient was followed for 3 months.

Phase 4: Outcomes were evaluated against the indicators, satisfaction was surveyed, and a lessons-learned meeting was held to refine the model.

Data Analysis

General data were analyzed using descriptive statistics, namely frequency, percentage, mean ($\bar{x}$), and standard deviation (S.D.). Mean self-efficacy scores before and after implementation were compared using the paired t-test, with the normality of the score differences checked by the Shapiro-Wilk test, and the mean difference was reported with its 95% confidence interval (CI). Proportions of outcomes between the pre- and post-development groups were compared using Fisher's exact test because some indicators had few events (expected count <5). The level of statistical significance was set at 0.05. Qualitative data were analyzed by content analysis, and trustworthiness was verified by data triangulation.

Nexus of Thai Health Sciences
Vol. 1 No.6 November – December 2026

Research Ethics

The researcher explained the objectives, procedures, benefits, and possible risks. Participants had the right to refuse or withdraw at any time without any effect on the services they received, and signed an informed consent form before participating. All data were kept confidential, codes were used instead of real names, results were presented in aggregate, and the data will be destroyed within 5 years after the research ends.

Results

1. Situation and problems of post-discharge care for patients with substance use disorders after the detoxification phase

1.1 General characteristics of the patient sample Most of the patient sample were male (86.67%), with a mean age of $\bar{x}$±S.D. 27.17±2.13 years (min = 20, max = 40). Most were aged 25-29 years (36.67%), worked in agriculture (40.00%), used yaba as the main substance (90.00%), entered treatment under the voluntary system (70.00%), and were discharged to the community (60.00%), as shown in Table 1.

Table 1 General characteristics of the patient sample (n = 30)

General characteristics	Number (persons)	Percentage
Sex		
Male	26	86.67
Female	4	13.33
Age (years)		
18-24	8	26.67
25-29	11	36.67
30-39	6	20.00
40 years and over	5	16.67
Occupation		
Agriculture	12	40.00
Hired labor/laborer	9	30.00
Unemployed	6	20.00

General characteristics	Number (persons)	Percentage
Student	3	10.00
Main substance		
Methamphetamine (yaba)	27	90.00
Crystal methamphetamine (ice)	2	6.67
Cannabis	1	3.33
Treatment system		
Voluntary treatment	21	70.00
Compulsory treatment	9	30.00
Discharge pathway		
Discharged to the community	18	60.00
Referred to intermediate-care rehabilitation (IMC)	8	26.67
Referred to long-term rehabilitation (LTC)	4	13.33

1.2 Problems found in post-discharge care A review of retrospective medical records, in-depth interviews, and focus groups identified **4** key problem areas: **1)** Patients: lack of motivation and of skills for managing triggers, with some patients attending appointments but still testing positive for drugs; **2)** Families: most caregivers had to work outside the home, had no time for supervision, and did not recognize the warning signs of relapse; **3)** Service system: follow-up appointments depended mainly on patients coming to the hospital, information was not passed on to sub-district health promoting hospitals and the community, and treatment facilities were inadequate; and **4)** Community: patients returned to their former environment where friends used drugs, and they still faced social stigma from community members.

2. Post-discharge care model for patients with substance use disorders after the detoxification phase to prevent relapse

The problem analysis and the workshops with the multidisciplinary team and network partners yielded the "Soi Phisai Seamless Care Model," which builds on the existing "Naka Lom Rak Model" by connecting care from before discharge through to the community. It has 5 components and was reviewed by 3 experts using an appraisal covering knowledge, skills, and cooperation; its appropriateness was rated at the highest level ($\bar{x}$±S.D. = 4.60±0.42 points).

Table 2 Components and key activities of the post-discharge care model for patients with substance use disorders after the detoxification phase

Component	Key activities	Responsible persons/timing
1. Individualized discharge planning and relapse risk assessment	Assess relapse risk and triggers; provide motivational interviewing; jointly develop an individualized relapse prevention plan	Nurse/psychologist, 3 days before discharge
2. Preparing the family to be the primary caregiver	Educate on addiction as a brain disease, warning signs of relapse, positive communication, and supervising appointment attendance	Nurse/primary caregiver, once before discharge
3. Seamless follow-up through technology	Follow up via LINE Official Account and telephone; assess symptoms and cravings and provide encouragement	Drug clinic nurse, weeks 1, 2, 4, 8, and 12
4. Home visits by community networks	Pass information to SHPHs and VHVs for home visits; coordinate with community leaders to support livelihoods and reduce stigma	SHPHs/VHVs/community leaders, once a month
5. Warning-sign management and re-entry into treatment	When warning signs or a positive urine test are found, reassess and return the patient to treatment without judgment within 72 hours	Multidisciplinary team, throughout the 3 months after discharge

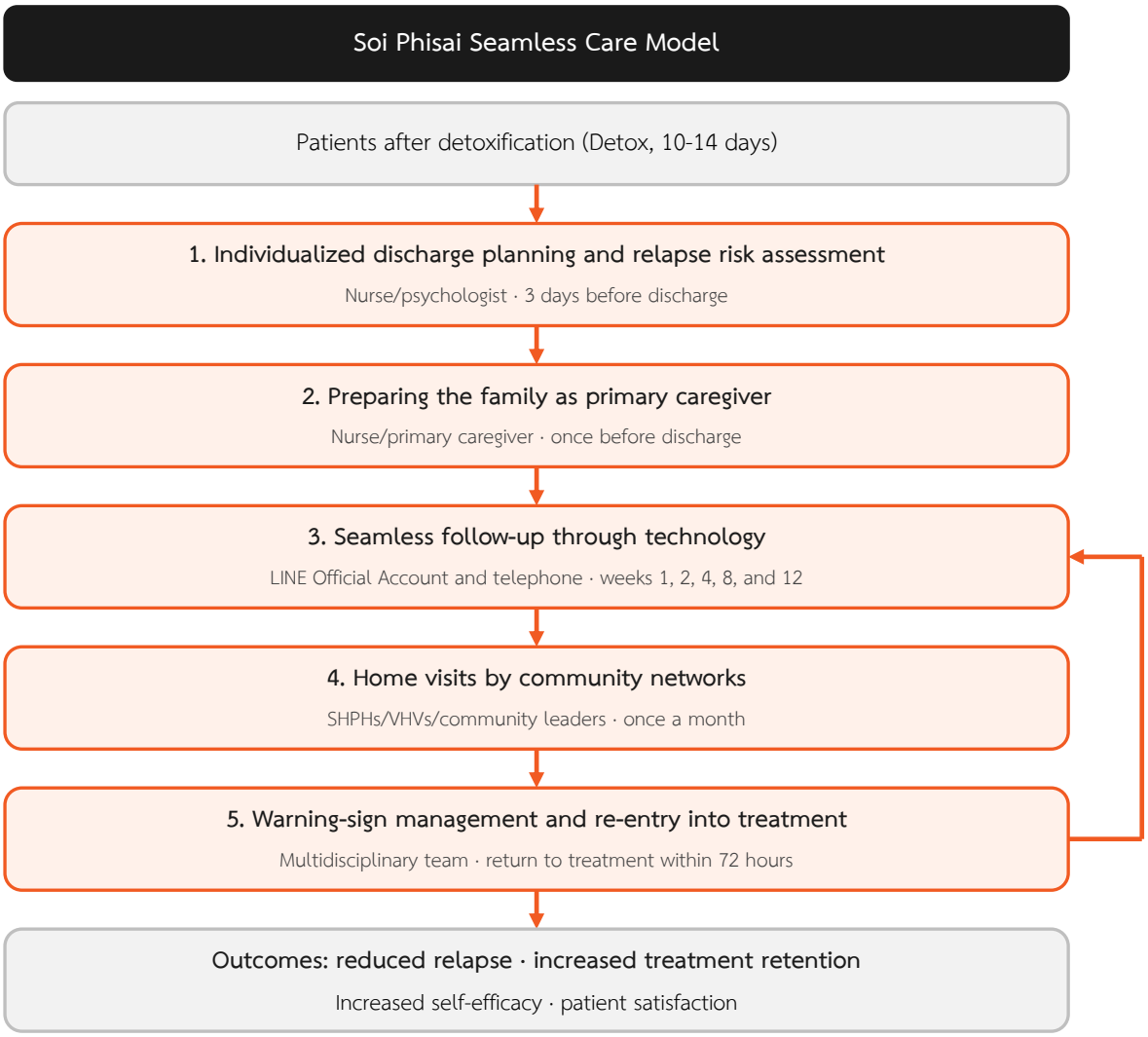

Figure 1 Post-discharge care model for patients with substance use disorders after the detoxification phase to prevent relapse

3. Outcomes of the post-discharge care model for patients with substance use disorders after the detoxification phase

3.1 Relapse rate and other indicators

After implementing the model and following patients for 3 months, the relapse rate decreased from 43.33% to 16.67%, a statistically significant difference (Fisher's exact test, p-value = 0.047). This reduction of 26.67 percentage points exceeded the 15% target. The treatment retention rate increased from 63.33% to 86.67% (p-value = 0.072), consistent with the missed-appointment rate that fell from 36.67% to 13.33%, but the difference was not statistically significant. The proportion of patients returning to work or study increased from 50.00% to 76.67% (p-value = 0.060), which was likewise not statistically significant. Emergency department visits or readmissions for substance withdrawal fell from 13.33% to 3.33%, which met the set

Nexus of Thai Health Sciences
Vol. 1 No.6 November – December 2026

criterion (not more than 10%); however, the difference was not statistically significant (p-value = 0.353), as shown in Table 3.

Table 3 Comparison of outcomes by indicator before and after implementing the care model

Indicator	Target	Before development (n = 30) Number (%)	After development (n = 30) Number (%)	p-value
Relapse within 3 months	15% reduction	13 (43.33)	5 (16.67)	0.047*
Treatment retention	≥ 80%	19 (63.33)	26 (86.67)	0.072
Emergency department visits or readmissions for substance withdrawal	≤ 10%	4 (13.33)	1 (3.33)	0.353
Return to work or study	≥ 75%	15 (50.00)	23 (76.67)	0.060

*Statistically significant, p-value <.05

3.2 Self-efficacy in relapse prevention The mean self-efficacy score for relapse prevention after implementing the model ($\bar{x}$±S.D. = 4.12±0.41 points) was significantly higher than before (2.85±0.52 points) (mean difference = 1.27, 95% CI = 1.04-1.50, t = 11.24, df = 29, p-value <0.001), as shown in Table 4.

Table 4 Comparison of mean self-efficacy scores for relapse prevention before and after implementing the model (n = 30)

Self-efficacy	Before ($\bar{x}$±S.D.)	After ($\bar{x}$±S.D.)	t	p-value
Managing triggers and cravings	2.71±0.58	4.05±0.47	10.12	<0.001*
Refusing when persuaded	2.78±0.61	4.18±0.45	9.87	<0.001*
Managing emotions and stress	2.92±0.55	4.09±0.44	9.35	<0.001*
Attending appointments and seeking help	2.99±0.57	4.16±0.42	9.02	<0.001*

Self-efficacy	Before ($\bar{x}$±S.D.)	After ($\bar{x}$±S.D.)	t	p-value
Overall	2.85±0.52	4.12±0.41	11.24	<0.001*

*Statistically significant, p-value <.05

3.3 Patient satisfaction with the care model Patients' overall satisfaction with the care model was at the highest level ($\bar{x}$±S.D. = 4.46±0.48 points), with 86.67% reporting high to highest satisfaction, exceeding the 80% target.

Discussion

The situation analysis showed that relapse among patients discharged after detoxification is not caused by patient factors alone but by gaps in the service system, where care is interrupted once patients leave the hospital, by families that are not ready to provide supervision, and by patients returning to their former environment. This is consistent with studies reporting that lack of motivation, lack of family support, and an environment that facilitates drug use are important factors in loss to follow-up and relapse,[6] and with a study in community hospitals in northeastern Thailand reporting that missed appointments and the lack of an effective follow-up system are the main obstacles to post-treatment care.[10] The detoxification phase, which lasts only 10-14 days, should therefore be seen as the beginning of continuing care rather than the end of treatment.[14]

After implementing the model, the relapse rate decreased significantly (p-value = 0.047), and the treatment retention rate tended to increase but not significantly. This may be related to 3 main points. First, discharge planning and an individualized relapse prevention plan before discharge, together with motivational interviewing, helped patients recognize their own triggers and develop coping skills, as reflected in self-efficacy scores that increased in every domain; this is consistent with the holistic approach to substance use care that emphasizes empowering patients to manage themselves.[15] Second, preparing the family to be the primary caregiver and passing information to community networks gave patients a support system around them after returning home. This is consistent with studies reporting that follow-up with family and community participation increases treatment retention and reduces relapse,[11,13] and that integrating multisector cooperation is a key condition for success.[8]

Third, follow-up through LINE Official Account and telephone at set intervals enabled the care team to detect warning signs early and return patients to treatment before

a lapse turned into a return to dependence, which may explain the decrease in missed appointments. This is consistent with studies reporting that follow-up through a mobile application combined with home visits reduces missed appointments and relapse,[12] and that technology increases continuity of care without adding to patients' travel burden.[16,17] In addition, non-judgmental management of warning signs encouraged patients to disclose cravings or episodes of renewed use, so that patients remained in the system even when relapse occurred, which is at the heart of seamless care under the Service Plan for substance use disorders.[7,18]

However, emergency department visits or readmissions decreased but not significantly, possibly because there were few events (5 cases) and the sample was small, giving low statistical power; the same applies to retention in treatment and return to work or study, which increased but not significantly. The increase in return to work or study may reflect the role of community leaders in supporting livelihoods and reducing stigma, which is consistent with the concept of sustainable rehabilitation that requires restoring patients' social roles.[19]

Limitations of the study: 1) the sample was small and purposively selected; 2) the comparison group was retrospective data from medical records, which may differ in context and completeness of recording, there was no randomization, and confounders were not controlled, so causal relationships cannot be concluded; 3) the follow-up period was only 3 months after discharge, so long-term results cannot be concluded; 4) multiple indicators were tested without adjusting the significance level; and 5) the assessment of relapse relied partly on reports from patients and caregivers together with urine tests at appointments, so the relapse rate may be underestimated.

Recommendations

1. Recommendations for applying the results

1.1 The hospital should adopt the post-discharge care model for patients with substance use disorders after the detoxification phase as the standard practice of the drug clinic, starting discharge planning and relapse risk assessment before discharge.

1.2 A system for linking information among the hospital, sub-district health promoting hospitals, and community networks should be developed so that follow-up and return to treatment are seamless.

1.3 The capacity of families, VHVs, and community leaders should be developed to recognize warning signs of relapse, communicate positively, and reduce stigma, together with coordinating livelihood support for patients.

1.4 Suitable venues and treatment rooms for the program should be arranged, and personnel should be assigned to carry out technology-based follow-up continuously.

2. Recommendations for future research

2.1 Future research should study a larger sample, use a concurrent comparison group, and follow up for at least 1 year to confirm the effectiveness of the model.

Acknowledgments

We thank the director of Soi Phisai Hospital for permitting the research; the multidisciplinary team of the drug clinic and inpatient ward; the staff of sub-district health promoting hospitals, village health volunteers, and community leaders in Soi Phisai District; the experts who reviewed the instruments and the model; and the patients and families who cooperated in this research.

References

1. United Nations Office on Drugs and Crime. World drug report 2023. Vienna: UNODC; 2023.
2. The International Society of Addiction Medicine. Global report on addiction treatment and relapse prevention. ISAM Annual Report; 2023.
3. Saunders EC, Moore SK, Walsh O, Metcalf SA, Budney AJ, Cavazos-Rehg P, et al. Addressing the opioid and overdose crisis: the role of safe supply. Int J Drug Policy. 2022;107:103787.
4. Office of the Narcotics Control Board. Report on drug prevention and control operations, fiscal year 2023. Bangkok: Office of the Narcotics Control Board; 2023 (in Thai).
5. Princess Mother National Institute on Drug Abuse Treatment. Situation report on drug abuse treatment and rehabilitation in Thailand, 2022. Bangkok: Department of Medical Services, Ministry of Public Health; 2022 (in Thai).
6. Sirirattanarekha T, Hannarong P, Pipatchotitham W. Factors affecting loss to follow-up and relapse among drug users: a study in Thanyarak Hospital. J Ment Health Thai. 2022;30(3):195-207 (in Thai).
7. Ministry of Public Health. Service plan for substance use disorders, 2023-2027. Nonthaburi: Ministry of Public Health; 2023 (in Thai).
8. Ketkan K, Suksawang S, Suwan P. Development of an integrated follow-up care model for drug users after treatment. J Nurs Sci Health. 2021;44(1):102-14 (in Thai).
9. Bueng Kan Provincial Public Health Office. Drug situation report of Bueng Kan Province, 2023. Bueng Kan: Bueng Kan Provincial Public Health Office; 2023 (in Thai).

Nexus of Thai Health Sciences
Vol. 1 No.6 November – December 2026

10. Lakhonwong N, Thanawatthanakul O, Narin S. Problems and obstacles in post-treatment follow-up care of drug users: a case study of community hospitals in Northeastern Thailand. J Public Health Nurs. 2022;36(2):81-95 (in Thai).

11. Wasikasin W, Wetchayachai A, Watchanawongpanya P. Development of a post-treatment follow-up care model for drug users with family and community participation. J Soc Sci Humanit. 2021;47(1):121-38 (in Thai).

12. Thammakul T, Srikosai S, Rueangprayoon W. Effects of a follow-up program for drug users via mobile application combined with home visits. J R Thai Army Nurses. 2019;20(2):235-44 (in Thai).

13. Kenyabut P, Nimnuan S, Limtrakul K. Development of a post-discharge care system for drug users with family and community participation. J Public Health Acad. 2023;32(1):156-67 (in Thai).

14. Department of Medical Services. Guideline for treatment of substance use disorders in the detoxification phase. Bangkok: Ministry of Public Health; 2021 (in Thai).

15. Kumwong J. Innovation in holistic care for persons with substance use disorders. J Public Health Acad. 2020;29(4):67-80 (in Thai).

16. Maneeprasat S. Technology and innovation in the care of persons with substance use disorders. J Public Health Acad. 2022;31(4):78-92 (in Thai).

17. Thanachaikhan N. Technology and follow-up of persons with substance use disorders. Bangkok: Chulalongkorn University Printing House; 2022 (in Thai).

18. Chaemsuwanwong A. Follow-up care of patients after substance use treatment. J Nurs Health. 2021;35(2):12-25 (in Thai).

19. Ungpinitpong W. The process of sustainable rehabilitation of persons with substance use disorders. J Ment Health Thai. 2021;29(2):45-59 (in Thai).