

# ผลของโปรแกรมกลุ่มบำบัดแบบเสริมสร้างแรงจูงใจต่อความตั้งใจในการเลิกสารเสพติด ในเยาวชนไทยที่ใช้สารแอมเฟตามีน

## Effectiveness of a Motivational Enhancement Group Therapy Program on Drug Abstinence Intention Among Thai Amphetamine-Abusing Youths

นิพนธ์ต้นฉบับ

Original Article

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### บทคัดย่อ

**วัตถุประสงค์:** เพื่อศึกษาผลของกลุ่มบำบัดแบบเสริมสร้างแรงจูงใจต่อความตั้งใจในการเลิกสารเสพติดในเยาวชนไทยที่ใช้สารแอมเฟตามีน **วิธีการศึกษา:** การวิจัยกึ่งทดลองนี้คัดเลือกเยาวชนกลุ่มตัวอย่าง จากสถานบำบัดผู้ติดยาเสพติดแห่งหนึ่งที่มีคุณสมบัติตามเกณฑ์ที่กำหนดจำนวน 48 คน แล้วสุ่มเข้ากลุ่มทดลองและกลุ่มควบคุม ทั้งสองกลุ่มได้รับจิตสังคัมบำบัดจากสถานบำบัด ส่วนกลุ่มทดลองได้รับกลุ่มบำบัดแบบเสริมสร้างแรงจูงใจจำนวน 6 ครั้งนาน 6 สัปดาห์ ประเมินความตั้งใจในการเลิกสารเสพติดก่อนการทดลอง หลังการทดลอง และระยะติดตามผล 1 เดือน วิเคราะห์ข้อมูลด้วยสถิติเชิงพรรณนาและการวิเคราะห์ความแปรปรวนสองทางแบบวัดซ้ำ **ผลการศึกษา:** กลุ่มทดลองมีคะแนนความตั้งใจในการเลิกสารเสพติดเพิ่มขึ้นในระยะหลังการทดลองเสร็จสิ้นและระยะติดตามผล อย่างมีนัยสำคัญทางสถิติ ( $P$ -value < 0.001) ในขณะที่กลุ่มควบคุมไม่มีความแตกต่างของคะแนนทั้งระยะหลังการทดลองและติดตามผล **สรุป:** กลุ่มบำบัดแบบเสริมสร้างแรงจูงใจทำให้คะแนนความตั้งใจในการเลิกสารเพิ่มขึ้น พยาบาลและบุคลากรทางสุขภาพสามารถประยุกต์ใช้โปรแกรมบำบัดเพื่อเพิ่มความตั้งใจในการเลิกสารเสพติดในเยาวชนที่ใช้สารเสพติด

**คำสำคัญ:** กลุ่มบำบัดแบบเสริมสร้างแรงจูงใจ, ความตั้งใจในการเลิกสารเสพติด, เยาวชนไทย, สารแอมเฟตามีน

### Abstract

**Objective:** To examine the effect of Motivational Enhancement Group Therapy (MET) on drug abstinence intention among Thai amphetamine-abusing youths. **Method:** This quasi-experimental study recruited 48 youths who met inclusion criteria from a rehabilitation center and randomly assigned them into experimental and control groups of equal size. Both groups attended the conventional psychosocial rehabilitation program. The experimental group also received the MET program weekly for six weeks, for a total of 6 sessions. Drug abstinence intention was assessed before and after treatment, and four weeks after the treatment ended. Descriptive statistics and two-way repeated measurement ANOVA were used for data analysis. **Results:** Drug abstinence intention scores for the experimental group significantly improved from pre-test to post-test and remained significantly improved at the four-week follow up ( $P$ -value < 0.001). Such improvement was not seen in the control group. **Conclusion:** MET could improve drug abstinence intention scores. Nurses and other drug treatment health care professionals could apply the program to raise drug abstinence intention among substance-abusing youth.

**Keywords:** Motivational Enhancement Group Therapy, drug abstinence intention, Thai youth, amphetamine

#### Editorial note

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## Introduction

Narcotic drugs cause problems for the security and health of users, their families and society. A 2014 report indicated that the 2012 - 2014 period saw the greatest number of drug addicts admitted for treatment in Thailand. Around 50% of addicts in the compulsory drug dependence treatment program were teenagers and young adults aged 15 – 24 years. Teenagers around the age of 15 comprised about one-fifth of the treatment population (20.56% in 2012, 21.58% in 2013, and 21.58% in 2014).<sup>1</sup> These numbers implied that younger people are more prone to using and becoming addicted to narcotics which have negative impacts on their

physical and mental health at a level requiring formal treatment. There is empirical evidence that narcotic substances cause brain malfunction and addiction. When used continuously, such drugs negatively affect the user's health.<sup>2</sup> In terms of social recognition, young adult addicts feel hated and ignored, leading to isolation and discouraging them from combatting their addiction and refocusing their lives. Many drug addicts relapse.<sup>3</sup> As a result, enhancing addicts' motivation and intention to abstain and helping them to set positive life goals are important aspects of treatment.

Intention is a systematic process of conscious thought and is expressed through behavior.<sup>4</sup> It indicates the degree of determination and devotion to attaining a particular result. For drug users, drug abstinence intention is important because it reflects their ability in systematically applying logical thought and/or knowledge to develop of self-esteem and confidence in problem solving. Self-esteem and problem-solving confidence lead to enthusiasm for change and self-development. This process allows individuals to anticipate and expect the consequence of their actions. To drug users, this clarifies the outcomes of using, for example, amphetamines and narcotics, and provides motivation to cease.

Examples abound. Students with high intention to stop smoking manifest greater preventive behavior than those with low intention.<sup>5</sup> It was also found that cognitive behavioral changes that increase intention to abstain from narcotics promotes relapse prevention and successful treatment outcome, i.e., drug abstinence.<sup>6</sup> Another study found motivation to be the most important element in drug addict rehabilitation.<sup>7</sup> It thus seems that a therapeutic procedure that enhances motivation and increases intention to abstain from drug use can be used to promote drug abstinence in young adults.

Motivation Enhancement Therapy (MET) is a patient-centered therapy that uses interviews to build patients' motivation through self-investigation. Patients learn why they hesitate to change negative behaviors and try to remove these obstacles to self-improvement. Patient motivation is gradually built throughout the process and should result in positive behavioral change.<sup>8</sup> This semi-directive patient-centered therapy could be effective because most drug addicts lacked motivation and were wary of or anxious about changing their behavior.<sup>9</sup> There was the study used MET in an examination of motivation to abstain from alcohol, cigarettes and marijuana in London youth. Their results showed that, even after a 3-month follow-up period, 87% of the sample reduced alcohol, cigarette and marijuana use.<sup>10</sup> In addition, the motivational interviewing (MI) in a study examining drug use in female youth, found that this method, together with standard therapy, helped remove hesitation and build motivation. The therapeutic outcome was that subjects were able to set a goal of abstaining from drug use.<sup>11</sup>

Moral and psychological supports are required in the treatment of drug addicts. Identifying value in life and developing motivation to start a new life leads to more

concrete life goal establishment and thus should be emphasized.<sup>3</sup> As mental health and psychiatry professionals who provide psychotherapy to drug addicts, the researchers realize the importance of developing socio-psychotherapy for young drug addicts, especially in developing a therapy which is more effective and more appropriate for this particular population. Consequently, the current study aimed to examine the therapeutic outcomes of building motivation to abstain from amphetamine use in young adult users. Following theory of planned behavior of Ajzen and Fishbein, this motivation could lead to the intention to disengage from narcotics, establish concrete life goals, and develop confidence to achieve the goals.<sup>4</sup> Motivation is the core of biological, cognitive, and social regulation. The intrinsic motivation is described as assimilation, mastery, spontaneous interest, and exploration that is so important to cognitive and social development. Thus, motivation makes people concerned with direction, persistence, and equifinality which promote intention.<sup>12</sup> These considerations underlay the development of an innovative method that could improve upon current therapy for young adult drug users. This study aimed to assess MET's ability to build motivation drug-abstinence intention in amphetamine-abusing youth. Specifically, we hypothesized that the mean drug-abstinence intention scores at pre-test, post-test, and follow-up phases in the experimental group were different. In addition, the mean drug-abstinence intention scores at the post-test and follow-up phases between the experimental and control groups were different.

## Methods

This quasi-experimental study used a two-group pretest-posttest and follow-up design. The sample was 48 young adult addicts receiving drug abuse therapy. The data were collected from May to July 2017. To be eligible, the prospective participants had to be 18 – 25 years old, be literate in Thai, have no hearing disorder, show no withdrawal symptoms (e.g., headaches, fidgeting, and attention deficit) that could interfere with receiving therapy, and be able to participate in at least 5 of the 6 MET sessions.

The sample size relied upon power analysis in which the power was set at 0.90, with reliability of 0.05 and effect size of 0.2 (small) due to very few comparable studies.<sup>13</sup> The resulting sample size was 46. To reduce the odds of invalid or insufficient data, the sample size was set at 48. Participants

were randomly divided into two groups of 24. To make group therapy more effective, 8 - 12 members are preferred.<sup>14</sup> Thus the experimental group was divided into two groups of 12 by drawing numbers (odd or even) from a box. Those two experimental groups were given MET intervention by the principal investigator and assistant researchers. Both principle investigator and assistant researchers were trained in the Motivational Interviewing treatment program.

### Research instruments

Instruments in this study consisted of data collection and experimental tools. The data collecting instruments were two sets of questionnaires, one gathering personal/background data, another assessing drug abstinence intention. Drug abstinence intention questionnaire was used to measure the readiness and willingness of the youths with substance abuse in order to plan and avoid using drug. Such psychological states include sidestepping in activities that lead to drug and steering their mind set not to use drugs. It contains 13 items with 4-point Likert-type scale ranging from 4- absolutely, to 3- quite true, 2-not really true, and 1-not true at all. This questionnaire was developed by Amnarjkitikom<sup>15</sup> based on Ajzen and Fishbein's Theory of Reasoned Action.<sup>4</sup> From this study, this questionnaire had an acceptable internal consistency reliability with a Cronbach's alpha coefficient of 0.85. The experimental instrument was the Motivational Enhancement Therapy program intended to increase drug abstinence intention. It was created by the researcher based on Motivational interviewing by Miller and Rollnick.<sup>8</sup> There were three phases which included building motivation for change, strengthen commitment, and follow through strategy. Validity was tested by three specialists: a psychiatrist, a lecturer in psychiatric mental health, and a lecturer in sociology and health whose specialty was narcotic drug use. The result was concensused acceptable with minor comments. The program was detailed in the following experimental and data collection procedure.

### Experiment and data collection procedure

Once the research protocol was approved by the Burapha University Ethics Board (Hu 012/2560), the research was then conducted as follows. In Phase 1 or pre-test, drug abstinence intention was measured both in experimental and control groups prior to standard treatment (for both groups) and MET (for the experimental group). In Phase 2 or

Treatment/Intervention phase, 24 participants each in the experimental and control groups subjects received conventional therapy (psychosocial group therapy) from May to July 2017. The psychosocial group consisted of morning meeting which allowed youths to review regulations, their offense and how to improve behaviors. Several classes encouraged them to know about health knowledge, impacts of using drug and how to avoid, brain addiction from drugs, social etiquette, religion, ethics, and social skills. Occupational activities such as agriculture, cement casting, and garden decoration were supported for the future career build-up. These learning activities were scheduled every day except weekend for 4 months.

In addition, the experimental group received MET. All members in the experimental group were required to participate in MET therapy once per week (on Saturday or Sunday). Each of the six sessions took 60 - 90 minutes. At the end of the 6 weeks, drug abstinence intention was again measured. Four weeks later, a follow-up measure of drug abstinence intention was administered.

The MET program was divided into three stages. Stage 1 aimed to build motivation for change with two activities. Activity 1, called "We are friends," emphasized "ice-breaking" to build trust between participants and researchers. Level of motivation for abstinence was also covered. Activity 2, called "Stand up for your life," focused on retrospection regarding participants' experiences, grief origins, errors (poor choices), ability to confront grief, and investigation of potential growth.

Stage 2 of MET aimed to strengthen commitment, and included three activities. Activity 3, called "Life is like a coin with two sides," had participants review the advantages and disadvantages of amphetamine use. This activity also covered benefits of amphetamine abstinence, and enabled subjects to point out factors causing ambivalence. Activity 4, called "Life is making choices," reminded participants of their responsibility for their choices, the significance of making choices, and the consequences of decision-making. Activity 5, called "Pave your path and follow it," allowed each participant to set a concrete, achievable goal, realize self-esteem, create a motto, and declare intention to change.

In Stage 3 of MET, activity 6, called "Tree of knowledge," was a strategic follow-up intended to track and assess the level of motivation for change. Its purposes were to wrap up what participants had learned from their therapy and to prevent relapse.

In Phase 3, or Post-Test and Follow-Up, drug abstinence intention in the experimental and control groups was assessed immediately at the end of the therapy, and again as a follow-up measure four weeks later. All three phases including the one-month follow-up were carried out at a public treatment facility in Chonburi province.

### Statistical analysis

Prior to analysis, the data were examined for accuracy and completion. Demographic characteristics were presented as descriptive statistics including mean with standard deviation and frequency with percentage. Differences of these characteristics between the two groups were tested using Chi-square test or Fisher's exact test, as appropriate for categorical variables and t-test or Mann-Whitney U test as appropriate for continuous variables.

Mean scores of drug-abstinence intention at each time-point between the two groups were compared using two-way repeated measurement ANOVA. Post hoc pairwise comparisons between each timepoint within each group were conducted using Bonferroni's adjustment. Significance level for all statistical tests was set at a type I error of 5% or *P*-value < 0.05. All statistical analyses were conducted using SPSS version 26.

## Results

Participants in the experimental and control groups had comparable mean ages ( $22.46 \pm 1.68$  and  $22.54 \pm 1.86$  years, respectively) (Table 1). There were fewer self-described employers among participants in the experimental group (41.67%) than those in the control group (54.10%). On the other hand, more self-employed individuals were found in the experimental group (29.16%) than in the control group (25.00%). Most of participants both in experimental and control groups were single/separated/divorced (95.8% and 91.7%, respectively). In both groups, the majority were from the northeast region where higher proportion was found in the experimental group (70.83%) than the control group (41.67%). Majority of them had a monthly income of less than 20,000 Baht (83.33% and 62.5%, respectively). Slightly more than one-third of participants in the experimental group (37.5%) reported that this was their second time in therapy while 29.16% reported their first time. On the other hand, more than three-quarters in the control group (79.17%) reported that this

was their first time in the treatment facility with 12.5% reporting their second time. Each of the characteristics between the two groups was not statistically different (Table 1).

**Table 1** Demographic characteristics of the participants (N = 48).

Characteristics	Experimental group (N = 24)		Control group (N = 24)		Test	P-value
	N	%	N	%		
<b>Age</b>	M = 22.46 ± 1.67		M = 22.54 ± 1.81		1.821*	0.075
<b>Occupations</b>						
Self employed	14	58.3	11	45.8	0.751†	0.386
Farmer/ employee	10	41.7	13	54.2		
<b>Family status</b>						
Married	1	4.2	2	8.3	0.356†	0.551
Single/separated/divorced	23	95.8	22	91.7		
<b>Region of hometown</b>						
Northeast	17	70.8	14	58.3	0.820†	0.365
Central/North/East	7	29.2	10	41.7		
<b>Income</b>						
< 10000	10	41.7	15	62.5	2.087†	0.149
≥ 10000	14	58.3	9	37.5		
<b>Time for treatment</b>						
First time	7	29.2	10	41.6	0.846†	0.655
Second time	9	37.5	7	29.2		
> Second time	8	33.3	7	29.2		

\* independent t test; † chi-square test.

For the drug abstinence intention, mean scores increased from  $2.53 \pm 0.51$  points at pre-test, to  $3.29 \pm 0.36$  points at post-test, and  $3.20 \pm 0.38$  points at the one-month follow-up (Table 2). On the other hand, mean scores in the control group seemed to be stable over time ( $2.73 \pm 0.51$ ,  $2.87 \pm 0.49$ , and  $2.69 \pm 0.92$  points, at pre-test, post-test, and the one-month follow-up, respectively). At pre-test, mean scores of drug abstinence intention between the two groups was not statistically significant ( $t_{46} = -1.15$ , *P*-value = 0.85) (Table 2).

When all three measurements of the drug abstinence intention without concern on the measuring timepoint were compared, mean score in the experimental group was significantly different from that of the control group ( $F_{1,45} = 5.90$ , *P*-value = 0.02) (Table 2). Overall, the drug abstinence intention mean scores in the experimental group increased from pre-test while those in the control group were relatively unchanged. This relatively different changes of mean scores over time in the two groups was confirmed by a significant test on the Time effect ( $F_{1,5,68} = 8.41$ , *P*-value < 0.001). The increase in mean scores over time in the experimental group and a relatively stable mean scores over time in the control group was confirmed by the Time x Group effect ( $F_{1,6,68} = 5.74$ , *P*-value = 0.01) (Table 2).

**Table 2** Drug abstinence intention mean scores at each phase (N = 48).

Phase	Drug abstinence intention scores (points)				Statistical test
	Experimental group (n = 24)		Control group (n = 24)		
	Mean	SD	Mean	SD	
Pre-test	2.53	0.51	2.73	0.51	$t_{46} = -1.15$ , $P\text{-value} = 0.85$
Post-test	3.29	0.36	2.87	0.49	
One-month follow-up	3.20	0.38	2.69	0.92	
<b>Statistical test</b>	<b>Two-way repeated measure ANOVA</b>				
	<ul style="list-style-type: none"> <li>• <b>Between-group difference:</b> <math>F_{1,45} = 5.90</math>, <math>P\text{-value} = 0.02</math>.</li> <li>• <b>Within-group difference:</b> <ul style="list-style-type: none"> <li>Time effect: <math>F_{1,5,88} = 8.41</math>, <math>P\text{-value} &lt; 0.001</math>.</li> <li>Time x Group effect: <math>F_{1,8,88} = 5.74</math>, <math>P\text{-value} = 0.01</math>.</li> </ul> </li> </ul>				

For pair-wise comparisons, in the experimental group, it was found that the mean scores of drug abstinence intention at post-test and one-month follow-up were both significantly higher than the mean score at pre-test ( $P\text{-value} < 0.001$  for both) (Table 3). This indicated that not only the drug abstinence intention was improved by the MET over the course of the treatment, but the effect remained significant even four weeks after the treatment ended. On the other hand, no such significant pair-wise differences were found in the control group (Table 3).

**Table 3** Post hoc comparisons of drug abstinence intention mean scores at each phase within the experimental and control groups (N = 48).

Phase	Mean	Phase		
		Pre-test	Post-test	One-month follow-up
<b>Experimental group (n = 24)</b>				
Pre-test	2.53	-	0.76*	0.67*
Post-test	3.29	-	-	-0.09
One-month follow-up	3.20	-	-	-
<b>Control group (n = 24)</b>				
Pre-test	2.72	-	0.15	-0.03
Post-test	2.87	-	-	-0.18
One-month follow-up	2.69	-	-	-

\*  $P\text{-value} < 0.05$  after adjusted by Bonferroni's method.

## Discussions and Conclusion

The results showed that when MET was added to the traditional therapy there was a significant, positive increase in drug abstinence intention scores among young amphetamine users. The increase was greater than any changes among young amphetamine users who receive only traditional therapy. This can be explained by the person-centered concept if the MET group therapy. MET emphasizes collaboration that helps participants assess their level of

readiness for change. Participants in our study could explore and learn to manage their ambivalence. They could focus on defining and finding meaning in their lives, and on set life goals. They could realize the benefits of pursuing life goals, and confront the effects of amphetamines on their lives and goals. As a result, they were able to replace hopelessness with hope, construct a concrete path to reach their goals, improve their commitment to abstain from amphetamine use, and finally enhance abstinence intention scores. Moreover, the strategic follow-up phase allowed youths to assess their level of motivation for change and wrap up what participants had learned from the experiences of the participation. This process would promote the abstinence intention scores even more.

This was consistent with intrinsic motivation theory where an individual motivated to complete a task tends to improve him/herself in order to achieve it.<sup>12,8</sup> Our finding also reflects Miller and Rollnick's argument that collaborative therapy focusing on therapist-receiver participation empowers the receivers and stimulates positive thought and change for a better future.<sup>16</sup> Our finding also conforms the findings of 54 studies related to drug abuse rehabilitation efficiency that indicated that MET is the most effective method to reduce drug abuse relapse.<sup>8</sup> Macgowan and Engle stated that MET is suitable for teenagers and young adults, whether actively seeking treatment or not.<sup>17</sup> Jensen et al. found that motivational interviewing (MI) helped change teenagers' drug use in a positive direction of which questioning and activation of appropriate thought processes helped develop appropriate behavior and motivation.<sup>18</sup> There has been research studying the relationship of group-based Motivational Enhancement Therapy (MET) and abstinence behavior based on the concept that behavior could certainly be a consequence of a cognitive learning process that led to intention. However, there has been no research examining the relationship between group-based MET and abstinence intention. The results of our study clearly show the benefits of group-based MET for developing abstinence intention.

Regarding the treatment underpinning a humanistic, client-centered, psychosocial, and directive therapy, MET was developed to help clients to explore and resolve ambivalence and eliciting behavior change. The clinical and research applications of MET have received increased attention in recent years and it has been designed to a wide range of clinical problems. However, MET has been shown to be

effective as a relative brief intervention.<sup>14</sup> This study was designed to hold only 6 sessions since the development of brief intervention based on motivational interviewing was recognized. The more sessions might increase the intrinsic motivation, but it could be more time-consuming and costly as well. Even though the intervention was planned to be short, the frames, structures, and contents were guaranteed to follow MET protocol. Also, six sessions were determined to be suitable for three phases of MET.

Participants in control group received conventional therapy. This consisted of morning community treatment, morning group meetings, a seminar on cohabitation problems, family regulation (reviewing norms of living together and dealing with misbehavior), "Hot Chair" (examining oneself when he/she broke a rule/regulation), health education focusing on the effects of drugs on the brain, social etiquette, religion and ethics, life skills, and recreational activities such as farming, casting, making garden decoration accessories, and exercising.<sup>19</sup> These activities allowed the members to learn social skills, acquire drug knowledge, realize their responsibilities, and design and control their use of their free time. However, there were no activities aiming at developing intrinsic motivation for change, or activities aiming to build self-confidence, hope, and anticipation of future benefit due to change. Yet the value of such activities was clear based on the higher drug abstinence intention scores of the experimental group compared with the control group.

The control group subjects received ordinary therapy. This consisted of morning community treatment, morning group meetings, a seminar on cohabitation problems, family regulation (reviewing norms of living together and dealing with misbehavior), "Hot Chair" (examining oneself when he/she broke a rule/regulation), health education focusing on the effects of drugs on the brain, social etiquette, religion and ethics, life skills, and recreational activities such as farming, casting, making garden decoration accessories, and exercising.<sup>19</sup> These activities allowed the members to learn social skills, acquire drug knowledge, realize their responsibilities, and design and control their use of their free time. However, there were no activities aimed at developing intrinsic motivation for change, nor were there activities aiming to build self-confidence, hope, and anticipation of future benefit due to change. Yet the value of such activities is clear from the higher drug abstinence intention scores of the experimental group compared to the control group.

In the experimental group, drug abstinence intention mean score slightly decreased from post-test to the one-month follow-up with no statistical significance (3.29 to 3.20 points). This was to be expected when immersion in treatment ceases. However, this one-month follow-up drug abstinence intention score (3.20 points) was still statistically higher than the pre-test one (2.53 points). Another study in Thailand found that drug abstinence promoted relapse prevention and other successful treatment outcomes.<sup>20</sup> Our current study showed how this link may be mediated by intention; participants realized the negative impacts of drug use but were not sure how to access and harness intrinsic motivation. To the extent this is true, including knowledge and skills about intention in drug treatment protocols will bridge the gap between knowledge and behavior, and lead to lower relapse rates and greater long-term abstinence.

This study had certain limitations. This research was conducted in closed drug treatment facility that the participants must be under laws and regulation authorized by the Ministry of Justice. The environments they lived in could be different from the real-life situation. Therefore, the research results cannot be referenced to drug treatment program that clients are still living with families and communities, for example, the treatments in outpatient department of the hospitals.

In terms of implications, nurses, health care providers, and those working with youths with substance abuse could apply this program in order to strengthen the drug abstinence intention. This motivational group therapy can be modified for teaching and learning activities in health or nursing education institutions. Also, other researchers may expand the results of this study to develop a form of therapy that is suitable for addicts or other addicts in other groups, such as, drug treatment program in open system, game addiction, or even internet addiction. The further study should collect and compare the personal data such as the duration of drug used, number of admissions and number of MET experiences.

In conclusion, this quasi-experimental research aiming to examine the effect of Motivational Enhancement Group Therapy on drug abstinence intention among Thai amphetamine-abusing youths. Forty-eight youths who met inclusion criteria were recruited from a rehabilitation center and randomly assigned into experimental and control groups of equal size. The results revealed that drug abstinence intention scores for the experimental (MET) group significantly were improved from pre-test to post-test and the four-week

follow up. The scores in the control group did not improve from pre-test to post-test, or at follow up.

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