EFFECTS OF PHRAMONGKUTKLAO MODEL ON ALCOHOL-DEPENDENT PATIENTS:

STUDY OUTCOMES TO EXPLORE A MODEL FOR OUTPATIENT

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Dissertation Submitted in Partial Fulfillment of the Requirements

for the Degree of Doctor of Philosophy Program in Public Health Sciences

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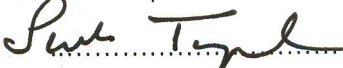
ผลของรูปแบบโรงพยาบาลพระมงกุฎเกล้าสำหรับผู้ป่วยในที่ติดแอลกอฮอล์

: ศึกษาผลลัพธ์เพื่อสร้างรูปแบบสำหรับผู้ป่วยนอก

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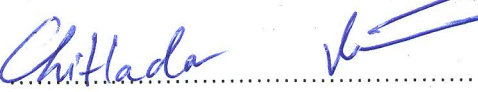
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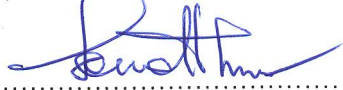
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ลัดดาวัลย์ แดงเถิน : ผลของรูปแบบโรงพยาบาลพระมงกุฎเกล้าสำหรับผู้ป่วยในที่ติด แอลกอฮอล์: ศึกษาผลลัพธ์เพื่อสร้างรูปแบบสำหรับผู้ป่วย. (EFFECTS OF PHRAMONGKUTKLAO MODEL ON ALCOHOL-DEPENDENT PATIENTS: STUDY OUTCOMES TO EXPLORE A MODEL FOR OUTPATIENT) อ. ที่ปรึกษา วิทยานิพนธ์หลัก : ดร.อุษณีย์ พึ่งปาน, อ. ที่ปรึกษาวิทยานิพนธ์ร่วม : พ.อ.นพ.พิชัย แสงชาญชัย, 171 หน้า.

การศึกษาครั้งนี้มีวัตถุประสงค์เพื่อวัดประสิทธิภาพของรูปแบบโรงพยาบาลพระมงกุฎเกล้าในการ ฟื้นฟูผู้ป่วยที่ติดสุรา ว่ามีการลด หรือเลิกดื่มสุราและคุณภาพชีวิตดีขึ้น โดยใช้วิธีการทดลองโดยการสุ่ม ประชากรอย่างง่ายเข้ากลุ่มทดลอง 61 คน และกลุ่มควบคุม 63 คน ที่ได้รับการวินิจฉัยว่าติดสุราโดยใช้ เกณฑ์การวินิจฉัยของ สมาคมจิตแพทย์อเมริกา และมีคะแนนการคัดกรองมากกว่า 19 คะแนน สมัครใจ เซ็นต์ยินยอมเข้าร่วมงานวิจัย กลุ่มทดลองจะได้รับรูปแบบโรงพยาบาลพระมงกุฎเกล้า หลังถอนพิษสุรา โดยการเข้าร่วมกิจกรรมกลุ่มตามวันเวลาที่กำหนดไว้ 28 วัน และกลุ่มควบคุมจะได้รับการบำบัดตาม มาตรฐานเดิม แบบสอบถามที่ใช้ในการประเมินมีทั้งหมด 5 ชุด คือ แบบสอบถามเกี่ยวกับข้อมูลทั่วไป พฤติกรรมการดื่มสุรา แบบสอบถามการรับรู้ความสามารถของตนเอง แบบวัดความพร้อมในการ เปลี่ยนแปลงพฤติกรรมในการเลิกดื่มสุราและแบบวัดคุณภาพชีวิตฉบับย่อ โดยมีการติดตามเก็บรวบรวม ข้อมูล ที่ 1, 3 , 6 เดือน ผลการศึกษาพบว่าผู้ป่วยที่เข้ากลุ่มทดลองสามารถลดหรือหยุดดื่มดีกว่ากลุ่ม ควบคุม อย่างมีนัยสำคัญในเดือนที่ 3 และเดือนที่ 6 ที่ p-value < .05 และจากติดตามที่ 6 เดือน กลุ่ม ทดลองมีคุณภาพชีวิตดีขึ้น รวมทั้งการรับรู้ความสามารถของตนเองพร้อมที่จะเปลี่ยนแปลงพฤติกรรมการ ดื่มสุรา จากนั้นนำผลลัพธ์มาวิเคราะห์จุดแข็ง จุดอ่อน นำไปพัฒนาเป็นรูปแบบที่ใช้ในบริการแบบผู้ป่วย นอก คือ รูปแบบการบำบัดฟื้นฟูสมรรถภาพสำหรับผู้ป่วยที่ติดสุราแบบผู้ป่วยนอก มีผู้ทรงคุณวุฒิ 3 ท่าน ตรวจสอบเนื้อหา และนำไปทดลองใช้ในโรงพยาบาลแม่สอด จังหวัดตาก ดำเนินกลุ่ม 12 ครั้ง 12 กิจกรรม (สัปดาห์ละครั้ง) จากการนำคู่มือใหม่ไปทดลอง พบว่าผู้ป่วยที่ได้เข้ากลุ่มทดลอง สามารถลดหรือหยุดดื่ม สุราได้ดีกว่ากลุ่มที่ไม่ได้เข้านอกจากนี้ยังพบว่าผู้ป่วยมีแรงจูงใจพร้อมที่จะปรับเปลี่ยนพฤติกรรมและการ รับรู้ความสามารถของตนเองได้ดีกว่ากลุ่มควบคุม โดยสรุปแล้วรูปแบบโรงพยาบาลพระมงกุฎเกล้าทั้งแบบ ผู้ป่วยในละผู้ป่วยนอกเป็นทางเลือกหนึ่งในการช่วยลดปัญหาของผู้ป่วยที่ติดสุราสามารถนำใช้ในหน่วยงาน สาธารณสุขอื่นๆได้โดยปรับให้เหมาะสมเข้ากับลักษณะของกลุ่มประชากรและสถานที่ให้บริการ

สาขาวิชา วิทยาศาสตร์สาธารณสุข   ลายมือชื่อนิสิต ....

ปีการศึกษา 2555   ลายมือชื่อ อ.ที่ปรึกษาวิทยานิพนธ์หลัก ....

ลายมือชื่อ อ.ที่ปรึกษาวิทยานิพนธ์ร่วม ....

5279407553 : MAJOR PUBLIC HEALTH SCIENCES

KEYWORDS : ALCOHOL DEPENDENCE / PHARMONGKUTKLAO MODEL/ TREATMENT/ REHABILITATION / RANDOMIZED CONTROLLED TRIAL

LADDAWAN DAENGTHOEN: EFFECTS OF PHRAMONGKUTKLAO MODEL ON ALCOHOL-DEPENDENT PATIENTS: STUDY OUTCOMES TO EXPLORE A MODEL FOR OUTPATIENT ADVISOR: USANEYA PERNGPARN, Ph.D., CO-ADVISOR : COL. PICHAI SAENGCHARNCHAI, M.D., 171 pp.

This study investigated the effects of the Pharmongkutklao (PMK) model to reduce or abstain from alcohol consumption and improve quality of life among patient with alcohol dependence. A randomized trial, assigned into the PMK model (n=61) or usual care (n=63) group. The patient with alcohol dependence were assessed by using the 4th Diagnostic and Statistic manual of Mental Disorder (DSM-IV) to diagnose alcohol dependence and screened by the Alcohol Use Disorder Identification Test (AUDIT) with the score greater than 19. After attending the program, the patients were evaluated or assessed in terms of the extent of their addiction, readiness to change their drinking behavior, perception of their own ability to quit drinking, and quality of life. The data relating to alcohol consumption from the questionnaires were collected before, during, and after the program. The follow-up periods were at 1, 3, and 6 months. It was found that the patients joining the PMK program recovered significantly better than those in the usual care program at months and 6 ($p <$ .05). In addition, at 6-month, the treatment group had a moderately better quality of life compared with the control group. The results of the study were later being used to analyze the strengths and weaknesses of the PMK Model by reapplying to the outpatients. The contents of the new program for outpatients were validated by 3 experts and trialed at Mae Sot Hospital, Tak Province. The program was carried out once per week for 12 weeks. The findings indicated that the patients in the alcohol dependence outpatient rehabilitation program could reduce or stop drinking to a greater extent than those in the control group. Furthermore, the former were found to be more strongly motivated to change their drinking behavior and have better perception about their ability to do so. In conclusion, the PMK Model can be considered as an effective alternative method in the treatment and rehabilitation of alcohol addiction. The new model can be adapted in other public health agencies.

Field of Study : Public Health Sciences   Student's Signature _____

Academic Year : 2012   Advisor's Signature Usaneya Perngparn

                                                  Co-advisor's Signature _____

ACKNOWLEDGEMENTS

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LIST OF ABBREVIATIONS

WHO	=	World Health Organization
ICD-10	=	The 10th Revision of the International Statistical Classification of Diseases and Related Health Problem
AUDIT	=	Alcohol Use Disorder Identification Test
DSM-IV	=	The 4th Diagnostic and Statistic manual of Mental Health Disorders
PMK model	=	Phranongkutklao intensive inpatient rehabilitation program
New model	=	Alcohol outpatient rehabilitation program
MI	=	Motivational Interviewing
MET	=	Motivational Enhancement Therapy
CBT	=	Cognitive Behavioral Therapy
SCT	=	Social Cognitive Theory
AA	=	Alcoholics Anonymous
n	=	number of sample
SD	=	Standard Deviation
df	=	Degree of freedom
F	=	Variance Ratio
t	=	t-test statistic
95%CI	=	95% confidence interval
Mo	=	Month
gm	=	Grams
ml	=	Milliliter
Cont.	=	Continuous

CHAPTER I
INTRODUCTION

1.1 BACKGROUND

Alcohol consumption is an important public health concern because it is a major cause of preventable morbidity and mortality from various cancers, heart diseases, liver cirrhosis, and accidents. According to 1.5% and 3.2% of global mortality, 6.0% of total global life years lost has been attributed to alcohol consumption (Rehm et al., 2003 and WHO, 2004). Moreover, a dose response association has been documented between increasing amount of daily alcohol consumption and the risk of rising diseases which includes: liver, major depression, coronary heart disease, stroke, and liver cirrhosis (Rehm et al., 2003). Furthermore, alcohol dependence is a large burden on patients, their families and society. The epidemiological studies shows that alcohol dependence will affect many individuals at some time in their lives; with men being affected more frequently than women. Because of the alcohol-dependent, patients often show a lack of social skills and suffer from interpersonal problems.

A survey by the National Center on Addiction and Substance Abuse at Columbia University found that 80% of people in prison were involved with alcohol and other drugs at the time they committed crimes. A Canadian study conducted in 26 communities across Canada showed that more than half of the people arrested for criminal offenses were under the influence of alcohol (Garlick, 2000). In 2001, according to a random survey of 2,000 National Association of Social Work (NASW) members, 71% of social workers had taken one or more actions with clients with substance abuse disorders in the past year. Social work practices with alcoholics and other addicts take place in a wide range of social work settings. For example, hospital social workers encounter both the early and last stage effects of heavy drinking in patients. It is estimated that one in every four hospital beds has a patient whose illness is alcohol related. Overall, alcohol abuse is the third leading cause of death after heart disease and cancer. (Ketherine and Diane, 2008).

According to the Centers for Disease Control and Prevention (CDC, 2004), approximately 4.0% of individuals in the U.S. were reported for heavy drinking and 15.4% reported for binge drinking in 2006. Heavy and binge drinking is associated with diverse health and psychological problems including liver cirrhosis, pancreatitis, cancer, accidental injuries, violent behavior, alcohol abuse, and alcohol dependence (CDC, 2004). Consequently, nearly 80,000 deaths were annually attributed to heavy drinking in the U.S. from 2001-2005. Likewise in Thailand, deaths from liver disease and chronic cirrhosis due to heavy drinking have increase rapidly. In 1979, the number of deaths was 4.3 per 100,000 people and in 2006 were 13.2 per 100,000 people (Ministry of Public Health, 1999 and Suwit, 2007). In addition, long-term alcohol consumption has a vital impact on emotional and mental health causing anxiety, depression, and suicidal attempts. According to a public health regional representative survey in Thailand on mental health prevalence rate of alcohol addiction, results shows that approximately 51.2% of alcoholics had mental health problems with serious feelings of anxiety, 48.6% suffered from depression and 11.3% had aggressiveness towards other people (Silapakit et al., 1999).

From the survey of about 2.79 million people, 22.7% of the people could be classified by the Alcohol Use Disorder Identification Test (AUDIT) as hazardous drinkers, 0.39 million (3.1%) as harmful drinkers and 0.23 million (1.9%) as alcohol dependents (The Administration Committee for Substance Abuse Research Network (ACSAN) of the Office of Narcotics Control Board (ONCB), Ministry of Justice, 2007). The prevalence of alcohol use disorders was about three times higher in men than women. The highest prevalence was in the age groups of 25-44 years (32%) and 12-24 years (31%). Moreover, men had higher rates of alcohol-related problems than women. The most common alcohol-related cause in Thai people was guilt and depression after drinking, and economic and health problems, while the least were loss of employment and legal problems (ACSAN/ONCB, 2007).

Alcohol do not only impact on an individual level but also causes major effects on society, which the government has developed many strategies to control the problems. Legal strategies include the prohibition on drunk driving, age restrictions on alcohol consumption, restrictions of selling alcohol in certain public areas, and bans on alcohol beverage advertisement. Specific campaigns have included such as

the "No drunken driving project" and "No drinking during Buddhist Lent period". The government expects that these strategies could help tackle the on-going social problems because the behavior of alcohol consumption is difficult to change in light of its complexity and being related to many factors such as social norms, economics, law, and health behaviors (Thai Health Promotion Foundation, 2005).

There has been an increase in public awareness about alcohol consumption by health care authorities since this unhealthy lifestyle needs to be more addressed in the health care sector. To stop heavy drinking related problems, abstinent drinking efforts are crucially needed before addiction and physical consequences becomes more severe (Alfredsson, 2006). However, three main factors that drinkers' fail when trying to abstinence from alcohol stems from social influences, chemical dependency, and lack of motivation and cognition to change behavior. Firstly, learning social skills such as how to avoid or cope with alcohol consumption is one of the most important paths to succeed in abstinence. Secondly, over half of alcohol drinkers trying to abstain reported withdrawal symptoms (Katherine and Diane, 2008). Therefore, it is important to provide information or treatment to heavy drinkers on how to cope with such symptoms, and give strategies of abstinence that minimize them. Third, heavy drinkers need to consider motivation and cognition effects to change behavior for abstinence. This may be placed in a framework of discrepancies between one's current behavior and one's life goals (Cox and Klinger, 2004). This study examines these three reasons and uses them as a theoretical framework for designing an alcohol abstinence program.

There are a variety of theories on health education programs to help individuals reduce or abstain from alcohol consumption such as motivation theory, stage of change theory, and health belief theory. Programs based on these theories involve teaching demonstration groups about how to decrease alcohol consumption. However, success was limited because of the short duration of the programs and the lack of understanding of those involved. Plus, no single treatment has been shown to be effective for all individuals diagnosed with alcohol dependence (Margaret and Mattson, 1999). Additionally, some individuals participating in these programs were not able to abstain fully or were able to do so for only a short period of time before becoming addicted again (Margaret and Mattson, 1999).

In Thailand, various strategies have been used to decrease alcohol dependence such as the twelve steps self-help group, cognitive behavior therapy, and motivation enhancement therapy. For example, Darunee Phukao, (2006), integrated Buddhist-Thai culture and Motivation Interviewing-Cognitive Behavior Therapy (BUMICBT) together, which showed that there was significant reduction in overall alcohol consumption among participants receiving BUMICBT in addition to standard care. This improvement remained relatively consistent and did not decline significantly over the six month follow up period. In another process, Sairat Noknoi et al., (2004), randomized controlled trial of effectiveness of Motivational Enhancement Therapy (MET) by nurses for hazardous drinkers in a primary care unit in Thailand. Results showed that self-reported drinks per drinking day, frequency of hazardous drinking, and binge drinking sessions were reduced in the intervention group more than in the controlled group ($p < 0.05$). Furthermore, Chanchai Thongphanit, (2007) conducted a study by using case management in alcohol dependence treatment with 99 patients at the average age of 41.6 years old. He explained that about 52 % of patients were in contemplation, 26% in pre-contemplation, and 18% in determination stage. After three and six months follow-up, the remission rate was 52.2 % and 41.1 %, while the relapse rate was 15.2 % and 7.1 %, respectively. Loss during the follow up was 32.3 % in three months and 78.8 % in six months after the program completed. These results demonstrated successful outcomes in either preventing or decreasing alcohol dependence even if these processes were not used countrywide.

In 2003, the model of intensive inpatient rehabilitation for alcohol and substance dependence emerged. Phramongkutklao model (PMK model) was devised by integrating with the Minnesota model or known as the '28 days program', which was developed at the Minnesota State Hospital in 1952. The strength of the model is a combination of professional, non-professional, and recovering staff (Saengcharnchai, 2003). The twelve steps of Alcoholics Anonymous principal for dependence recovery were based on using spirituality and self-help for the addicts. The Phramongkutklao model has been running since June 2003. The outcomes were collected from June 2007 to May 2008. 92 alcohol patients were followed-up at the addiction clinic via telephone, by confirmation of close relatives, and home visits. The outcomes were as

follows: 33 cases (45.8%) were abstinent, 16 cases (21.9%) relapsed, and 1 year survival rate was 78.1%.

However, no empirical research study has been conducted to examine the effectiveness of the Phramongkutklao model for preventing and reducing alcohol consumption among Thai patients with alcohol dependence. Subsequently, the aims of this study are also to examine the effectiveness of the Phramongkutklao model and develop a new model for reducing alcohol consumption and improving quality of life of patients with alcohol dependence in outpatient.

1.2 RESEARCH QUESTION

The research questions of the present study were as follows:

1. Do the participants in the Phramongkutklao model have better reduction and abstinence from of alcohol consumption?

2. Do the participants in the Phramongkutklao model have better quality of life, readiness to change their drinking behavior, and self-efficacy to stop drinking than that of the usual care group of alcohol-dependent inpatients?

3. Do the participants in the new model have better reduction and abstinence from alcohol consumption?

4. Do the participants in the new model have better quality of life, readiness to change their drinking behavior, and self-efficacy to stop drinking than that of the control group of alcohol-dependent outpatients?

1.3 HYPOTHESIS

The present study hypothesizes that alcohol-dependent patient who were randomized to participate in the experimental group would have more behavioral change than those patients who received regular care since as follows:

1. The Phramongkutklao model can help alcohol-dependent inpatients to reduce and abstain from alcohol consumption.

2. The Phramongkutklao model can help alcohol-dependent inpatients have better a quality of life, readiness to change, and self-efficacy.

3. The new model can help alcohol-dependent outpatients to reduce and abstain from alcohol consumption.

4. The new model can help alcohol-dependent outpatients have better a quality of life readiness to change, and self-efficacy.

1.4 OBJECTIVES

The objectives of the study were to examine the Phramongkutklao model in helping alcohol-dependent patients to reduce or abstain from alcohol consumption and improve quality of life. After that the outcomes were analyzed to develop a new model based on Phramongkutklao model as suitable for outpatient.

General Objective:

1. To evaluate the effects of Pharmongkutklao model in helping alcohol-dependent patients to reduce or abstain from alcohol consumption.

2. To develop and explore a new model that suitable for outpatient.

Specific Objective:

1. To evaluate the effects of Pharmongkutklao model to reduce or abstain from alcohol consumption.

2. To compare (at baseline, 1-month, 3-month, and 6-month) between alcohol-dependent patients who participate and those do not participate in Pharmongkutklao model for enhancing behavioral change as the following parameters:

2.1 Reduce or abstinence from alcohol consumption.

2.2 Modifying readiness to change and self-efficacy to stop drinking.

2.3 Having quality of life of alcohol-dependent patients.

3. To explore the new model for alcohol-drinking outpatients based on the outcomes of Pharmongkutklao model.

1.5 EXPECTED BENEFITS

1. The study will provide insights into the danger of alcohol consumption.

2. The interventions will be useful for alcohol-dependent patients, their family member, health worker, and community.

3. The research will improve alcohol-dependent patients' quality of life and help maintain their abstinence from alcohol consumption.

4. The study is beneficial for the health worker team in obtaining research experience.

5. There is a new model as appropriate for alcohol-dependent patient in community.

1.6 OPERATION DEFINITIONS

Alcohol beverage is defined as every liquor or solid containing alcohol, spirits, wine, and beer that contains one-half of 1% or more of alcohol by volume. Alcohol beverages are consumed either alone or when diluted, mixed, or combined with other substances.

Ethanol is defined as the amount of alcohol consumed calculated in gram of absolute ethanol that is the volume (ml) x concentration (%) x specific gravity of alcohol equal to 0.79 for each type of drink. For example, one bottle of beer (330 ml.) has 4 to 5% ethanol, a glass of wine (120 ml.) contains 12.5% ethanol and a glass of spirit (30-40 ml.) contains 40% percent ethanol.

Standard drink, defined as a unit of measurement, is any drink containing 10 grams of alcohol.

Alcohol dependence is defined as a cluster of physiological, behavioral, and cognitive phenomena in which the use of alcohol takes on a much higher priority for a given individual than other behaviors that previously had greater value (WHO, 1993). Alcohol dependence will be diagnosed by psychiatrist base on The 4th Diagnostic and Statistical manual of Mental Disease (DSM-IV), and the criteria of The 10th Revision of the International Statistical Classification of Diseases and Related Health Problem (ICD-10).

Col. Pichai Seangcharnchai developed the Phramongkutklao model in 2003 in order to reduce or stop alcohol consumption behaviors at Phramongkutklao Hospital, Thailand.

Twelve steps is defined as a twelve steps principle in alcohol anonymous to help alcoholism, a progressive illness that affects the body, mind, and spirit, for which the only effective remedy is abstinence from the use of alcohol (Kinney, 2006).

Alcoholics Anonymous is defined as fellowships of men and women who share their experience, strength and hope with each other that may solve their

common problems and help others to recover from alcoholism. The only requirement belonging to the group is a desire to stop drinking (Saengcharnchai, 2003).

Higher power is defined as a higher power of Buddhism consisting of the Three Jewels (Tiratana): Buddha, the Dhamma, and Sangha (Pra Pharyutto, 1999).

Buddha or Enlightened is a knower and awakener who discovered and proclaimed to the world the law of deliverance-known to the west as Buddhism.

The Dhamma is the teaching of deliverance in its entirety, which was discovered and proclaimed by the Buddha.

The Sangha is the order of bhikkhus or medicant monks who devote their life entirely to the realization of the highest goal of deliverance.

Quality of life is defined as alcohol-dependent patients' perceptions of their positions in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standard, and concerns (WHO, 1996). The current health status of alcohol-dependent patients consists of four components: physical health, psychological well-being, social relationships and environment, which was assess by using WHOQOL-BREF-THAI 26 items.

Readiness to change is defined as an alcohol-dependent patient's readiness to change following the stage of change from Prochaska & DiClemente's theory.

Stage of change: Pre-contemplation stage is when a person has no intention of changing their behavior for the predictable future. They are not thinking about changing their behavior, and may not see the behavior as a problem when asked.

Stage of change: Contemplation stage is when the person is aware that a problem exists and seriously considers taking action, but not yet made a commitment to an action.

Stage of change: Preparation stage is when people intend to take action soon and often report some steps in that direction. Thus, this stage is a combination of behavioral actions and intentions.

Stage of change: Action is when the person is aware a problem exists and actively modifies their behavior, experiences and environment in order to overcome the problem. Commitment is clear and great deal of effort is expended towards making changes.

Stage of change: Maintenance is when the person has made a sustained change wherein a new pattern of behavior has replaced the old one. Behavior is firmly established and threat of relapse becomes less intense.

Self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercises influence over events that affect their lives.

CHAPTER II
LITERATURE REVIEWS

In this study, the author has reviewed relevant concepts, theories, and research on the following topics:

1. Alcohol

2. Social cognitive theory

3. Motivational interviewing

4. Stage of change

5. Phramongkutklao model (PMK model)

6. Related literature review

2.1 ALCOHOL

Alcohol is a substance. The kind that people drink is ethyl alcohol, or ethanol (C_2H_5OH), popularly shortened as ETOH. Ethyl alcohol is a colorless, flammable, volatile liquid with a burning taste (Royce and Scatchley, 1996)

Alcohol is widely used as a solvent in industry, where it is denatured by adding a toxin to make it unpleasant (Benshoff and Janikowski, 2000). The kind of alcohol we drink produced by the fermentation of substances such as fruits containing sugar, and by enzymes that are produced by a microorganism and yeast (Kinney, 2006). Through the process of distillation, the solution containing the alcohol is heated and the vapors are collected and condensed into liquid form again.

Whatever form of alcohol is consumed, when taken to excess, different levels of intoxications are likely to be observed with different individuals and at different time point. Early in the drinking period, as the DMS-IV-TR (American Psychiatric Association[APA], 2000) indicates, when blood alcohol levels are rising, symptoms often include talkativeness, a sensation of well-being, and a bright expansive mood. Later, when blood alcohol levels are falling, the individual is likely to become

depressed, less rational, and withdraw. At the highest level, a non-tolerant individual is likely to become sleepy.

Pharmacology

Alcohol rapidly absorbs from the stomach and small intestine, which usually occurs within 20 minutes to an hour after ingestion. The liver metabolizes over 90% of alcohol ingested. It directly affects the central nervous system (CNS), and acts as a depressant, which was used as an anesthetic in the nineteenth century. The exact mechanism is unknown, but alcohol apparently disrupts the nervous system functioning via brain neurotransmitter system and the gamma-aminobutyric acid (GABA) receptor complex. When consumption is high, the dissolution of ethanol in the lipid membranes between cells produces the effects towards alcohol consumption (Hanson and Venturelli, 1995)**.** The effects of alcohol are a function of the concentration of alcohol and individual receptiveness to the drug. Alcohol is absorbed slowly in the existence of water or food, particularly protein. Faster absorption of alcohol occurs in the presence of carbon dioxide. Therefore, the effects of carbonated beverages such as champagne or sparkling wine will generally be felt sooner. (Austine, 1978)

Signs and Symptoms

In general, behavior expression of alcohol ingestion increases as the blood alcohol level (BAL) or blood alcohol concentration (BAC) increases. However, dependent drinker develops tolerance to ethanol and may not show symptoms even when drinking heavily. Typical signs and symptoms of drinking that may occur are nausea, vomiting, lack of coordination, slurred speech, staggering, disorientation, irritability, short attention span, loud and frequent talking, decreased judgment, decreased inhibitions, interference with memory, unsteady gait, nystagmus, and facial flushing. A dependent drinker may also have blackouts (Carolyn and Aranzo, 2000).

Side effects

Individuals who abuse alcohol are prone to numerous physical, social, and psychological problems. Physical complaints include gastrointestinal bleeding, gastritis, pancreatitis, malnutrition, cirrhosis, alcoholic hepatitis, and increased rates

of cancers of the esophagus and colon. Social problems include violence, high divorce rates, car accidents, and loss of employment. Psychological and mental health problems include suicide, blackout (loss of short-term memory for up to several days), Korsakoff's syndrome (dementia with loss of short-term memory) and Wernicke's encephalopathy (cranial nerve dysfunction and delirium) (Carolyn and Avanzo, 2000).

Effects of Human Body

Brain Impairment

Alcohol contributes to brain damage both directly and indirectly. Levin, (1995) provides a threefold classification of damage to the nervous system through alcohol misuse: (a) damage of the form of reducing of the brain from the toxic effects of the alcohol itself, (b) poisoning of brain cells by toxin circulating in the blood as a result of the failure of a diseased liver to metabolize them, and (c) damage to the nervous system because of nutritional deficits associated with alcoholism. Wernicke's syndrome and Korsakoff's psychosis are thought to derive from a lack of thiamine, or vitamin B_1 (National Institute on Alcohol Abuse and Alcoholism (NIAAA), 2004: 63). According to Osher (2000) this syndrome is one part of the brain. Approximately 80% to 90% of alcoholics with Wernicke's encephalopathy also develop Kosakoff's sometimes called Wernicke-Korsakoff's syndrome, which is a long-term result of brain damage (NIAAA, 2004).

Liver Damage

Because the liver metabolizes alcohol ahead of anything else, the toll to the body through alcohol abuse is enormous. Chronic exposure to alcohol may result in liver damage, with some individuals more highly susceptible than others. The first manifestation of alcohol-related liver problems is the development of a fatty liver. Although the symptoms are not obvious, this condition can easily be detected through blood tests (Doweiko, 2002; Saengcharnchai and Hirunwiwatanakul, 2006). About one in three heavy drinkers eventually develops scars in the liver associated with cirrhosis-a disease in which liver cells are destroyed and the organ no longer is able to process nutrients in food (Benshoff and Janikowski, 2000).

Heart Disease

Although moderate drinking generally decreases the risk for cardiovascular disease, but heavy drinking over long periods will likely have the opposite effect (WHO, 2004). Chronic alcohol use result in the suppression of normal red blood cell formation and can harm the cardiovascular system. Paulo (2007) said that the relationship between alcohol consumption and blood pressure is complex in the relationship between drinking and cardiovascular disease in general. Heavy alcohol consumption is an established risk for hypertension. Such heavy drinking can also cause the heart to become enlarged and lose some of its ability to contract (Medical Consequences, 2000). Damage to heart muscle tissues also commonly occurs over long periods of time.

Genitourinary Tract

In both gender, urination problems may result from excessive alcohol use. Indirect interference in the filtration and elimination process of the waste produce by the kidney seems to be the matter (Kinney, 2006). According to Osher (2000), when kidney failure occurs, the trouble is not in the kidneys themselves but in a circulating toxic factor resulting from the associated liver disease. The Tenth Special Report to the U.S. Congress: Alcohol and Health (U.S. Department of Health and Human Service, 2000) found in their clinical studies that alcoholic women suggested that ovulation and menstrual difficulties are caused by alcohol-induced hormonal imbalance. In men, the effects of impotence, low testosterone level, low sperm count, and testicular atrophy are widely reported. The frequency of heavy drinking by mothers is also associated with a range of preventable mental and physical birth defects collectively known as Fetal Alcohol Spectrum Disorders (FASD) (British Medical Association, 2007).

Effects of Alcohol Consumption

Alcohol abuse can lead to many harmful consequences for individual drinkers, their family and friends. In terms of the individual, alcohol abuse can be associated with many negative consequences including illicit drug use, injuries, malnutrition,

memory loss, impairment of cognitive abilities, self-harm, various cancers, and suicide (Plant and Plant, 2006).

Alcohol abuse can also significantly impact on family life. Marriages where there are alcohol problems are twice as likely to end in divorce (WHO, 2004). In 2004, it was estimated that between 780,000 and 1.3 million children were affected by parent alcohol problems in England (Plant and Plant, 2006). Research has found that alcohol significantly contributes in domestic violence incidents and that the risk of suffering domestic abuse rise with increasing levels of drinking for both male and female victims (WHO, 2006).

In the workplace, alcohol abuse is associated with lower productivity through sickness-related absence and poor performance, which results in shorter working lives (WHO, 2004).

Critical social harms that can be related to drinking include burden disease (physical and mental health), family and other interpersonal problems, other crimes, and social marginalization. An individual's pattern of drinking can have adverse effects on his/her own life, disrupting their marriage and family life, causing loss of job and unemployment, triggering commission of a crime resulting in arrest, precipitating homelessness, marginalization or other stigmatization.

The National Household Survey for Substance and Alcohol Use (NHSSA, 2007) episodically explored Thai people ages from 12 to 66 years. The most common alcohol-related consequence in Thai people was feeling guilty or remorse after drinking, and economic and health problem, while the least were loss of employment and legal problems.

Alcohol Consumption Behavior

In terms of health, The World Health Organization (WHO) classifies alcohol consumption behavior by the intensity of health risk. It is classifies into four types (WHO, 2001; Babor et al., 2001).

1. Low-risk drinking refers to alcohol consumption behavior which drinkers consumes not more than three standard drinks per day or 21 standard drinks per week by males, and not more than two standard drinks per day or 14 standard drinks per

week by females. In addition, there must be two days per week of no alcohol consumption.

2. Hazardous drinking is a pattern of alcohol consumption that increases damages. Hazardous drinking also refers to alcohol consumption behavior which drinkers consumes three to seven standard drinks per day or 22-49 standard drinks per week by male, and two to five standard drinks per day or 15-35 standard drinks per week by female.

3. Harmful drinking refers to alcohol consumption behavior which drinkers consumes more than seven standard drinks per day or more than 49 standard drinks per week by male, and more than five standard drinks per day or more than 35 standard drinks per week by female. In addition, it also refers to alcohol consumption that results in damages to physical and mental health (WHO, 1993).

4. Alcohol dependence is a cluster of behavioral, cognitive, and physiological phenomena that may develop after repeated alcohol consumption (WHO, 1993). These phenomena include a strong desire to consume alcohol, impaired control over its suitable volume, a higher priority given to drinking than to other activities, increase alcohol tolerance, and a physical withdrawal reaction when alcohol use is discontinued.

A standard drink is 10 grams of pure ethanol. For example, one bottle of beer (330 ml.) contains 4 to 5% ethanol, a glass of wine (120 ml.) contains 12.5% ethanol and a glass of spirit (30-40 ml.) contains 40% ethanol, which each is one standard drink (Saengcharnchai et al., 2006).

Causes of Alcohol Consumption

From a survey of the Thai Health Promotion Foundation, most drinkers began drinking around 13-21 years of age. The causes of alcohol drinking are as follows:

1. Alcohol drinking in social and business gatherings. This is to use alcohol for commercial or social events, and business rewards.

2. Alcohol drinking for health reasons. This is to use alcohol as a medicine to treat various diseases and to nourish health.

3. Alcohol drinking in various ceremonies and festivals such as marriage, new year festival, and Songkran festival.

4. Alcohol drinking for oneself. This is to use alcohol as a symbol to show social and economic position, to provide enjoyment, and to feel liberated from various suffering and stresses.

In conclusion, some patients may drink in large quantities on particular occasions, but might not drink more than recommended amounts regularly on a weekly basis. Drinking to the level of intoxication causes a severe risk involving injuries, violence, and loss of control affecting others as well as themselves. Other patients may drink excessively on a regular basis, producing an increased tolerance for alcohol, which may not express marked impairment at high blood alcohol level. Chronic excessive consumption also causes risk of long-term medical conditions such as liver damage, and psychological disorder (Babor et al., 2001).

Research that Relevant the Impacts of Alcohol Consumption as Follows:

Rehm et al., (2003) research on alcohol-related morbidity and mortality has been taken into account for the varying effects of overall alcohol consumption and drinking patterns. The results from this epidemiological research indicate that alcohol consumption increases the risk for many chronic health consequence (e.g., liver cirrhosis, depression) and acute consequence (e.g., traffic crashes). For the chronic consequences of alcohol consumption, the results gives an overview of the risk for major chronic diseases related to varying levels of alcohol consumption, which are based on the results of observational data from cohort and case control study. In the results, relative risk estimates were shown to quantify the effect size of the risk relationships. Females who drink on average up to 20 grams of pure alcohol per day have a relative risk of 1.14 of developing breast cancer compared to female abstainers. For females drinking more than 40 grams of pure alcohol per day, the relative risk was 1.59, or about one and one-half times as large as for female abstainers, and corresponds to a 59% risk increase. In addition, alcohol consumption has been associated with serious increasing risk of injury in a wide variety of situations including motor vehicle crashes, falls, fires, and interpersonal violence.

According to Boffetta and Hashibe (2006) review1 about alcohol and cancer, a causal association has been established between alcohol consumption and cancers of the oral cavity, pharynx, larynx, esophagus, liver, colon, rectum, and breast especially in women. Cancers of the pancreas and lung are also suspected. Evidence suggests that the effect of alcohol is modulated by polymorphisms in genes encoding enzymes for ethanol metabolism, folate metabolism, and DNA repair. The mechanisms by which alcohol consumption exert its carcinogenic effect have not been fully defined, although plausible event includes a genotoxic effect of acetaldehyde, the main metabolite of ethanol, increased oestrogen concentration, which is important for breast carcinogenesis; a role as solvent for tobacco carcinogens; production of reactive oxygen species and nitrogen species; and changes in folate metabolism.

Rehm and colleagues (2009) series 1 described that alcohol consumption has been identified as an important risk factor for chronic disease and injury. They appraised alcohol exposure and prevalence of alcohol-use disorders on the basis of reviews of other published work. After identification of other major disease categories causally connected with alcohol, they estimated attributable fractions by sex, age, and WHO region. Additionally, they compared social costs of alcohol in selected countries. The outcomes revealed that alcohol consumption on health is detrimental with an estimated 3.8% of all global burden and 4.6% of global disability-adjusted life-years attributed to alcohol. Disease burden is closely related to average volume of alcohol consumption, and for every unit of exposure, is strongest in poor people and in those who are marginalized from society. The cost associated with alcohol amount to more than 1% of the gross national product in high-income and middle-income countries, with the costs of social harm constituting a major proportion in addition to health costs. Overall, they concluded that alcohol consumption is one of the major avoidable risk factors, and that action to reduce burden and costs associated with alcohol should be urgently increased.

Loeber et al, (2009) studied 'Impairment of cognitive abilities and decision making after chronic use of alcohol: the impact of multiple detoxifications.' This study was examining the effect of previous detoxifications on prefrontal function and decision-making in alcohol-dependent patients. They administered a series of

cognitive performance sensitive to cognitive abilities related to frontal lobe function including performance in a gambling task, general cognitive ability, and memory function. Then they divided the patients into a group of patients with two or more previous detoxifications and a group of patients with fewer than two previous detoxifications, and compared performance of these two groups. They suggested that the evidence for cognitive impairment of patients with alcohol-dependent, with regard to tasks sensitive to frontal lobe function, underlines the importance of abstinence for these impairments to recover. They found only little evidence for the impairing effects of repeated withdrawal on prefrontal function and suggest that executive function is affected earlier in dependence.

Lahmek et al, (2009) investigated the improvement in quality of life of alcohol-dependent patients during a three-week inpatient withdrawal program. They suggest that there were significant improvements in all dimensions of quality of life of alcohol-dependent patients after the 20 days inpatient program for alcohol detoxification and short rehabilitation in an alcohol addiction centre. This study showed that the initial quality of life of the patients was associated with several factors stemming from the alcoholic disease itself, its consequences, and from somatic or psychiatric co-morbidities. They also demonstrated in the absence of dependence, the mode of alcohol consumption has a strong influence on quality of life, and heavy drinkers had poorer quality of life than other alcohol drinkers.

2.2 SOCIALCOGNITIVE THEORY

Social Cognitive Theory (SCT): the theory was developed by Albert Bandura during the 1970s. It is based on the concept of reciprocal determinism, which is the dynamic interplay among personal factors (knowledge, skills, experience, culture, etc.), the environmental, and behavior. (Bandura, 1977) The theory suggested that changing one of these factors would change them all (Joanna, 2009).

SCT was first known as social learning theory, as it was based on the operation of established principles of learning within the human social context. It was renamed Social Cognitive Theory when concepts from cognitive psychology were

integrated to accommodate the growing understanding of human information processing capacities and biases that influence learning from experience, observation, and symbolic communication (Bandura, 1986).

SCT emphasizes reciprocal determinism in the interaction between people and their environments. Most behavioral and social theories focus on individual, social, and environment factors that determine individual or group behavior. SCT posits that human behavior is the product of dynamic interplay of personal, behavioral, and environmental influences. Although it recognized how environments shape behavior, this theory focuses on people's potential abilities to alter and construct environments to suit themselves in addition to a person's individual capacity to interact with their environment. SCT emphasizes the human capacity for collective action. This enables individuals to work together in organizations and social systems to achieve environment changes that benefit the entire group (Bandura, 1986).

Triadic Reciprocal Determinism

Social cognitive theory favors a model of causation involving triadic reciprocal determinism. In this model of reciprocal causation, behavior, cognition and other personal factors, environmental influences all operate as interacting determinants that influence each other bidirectional. Reciprocal causation does not mean that the different sources of influence are equal strengths. Some may be stronger than others. Nor do the reciprocal influences all occur simultaneously. It takes time for a causal factor to apply its influence and activate reciprocal influences.
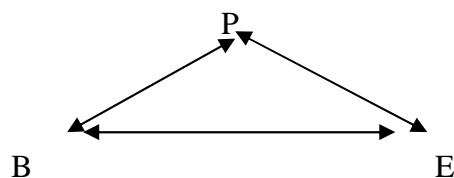
Figure 1 Schematic representation of three alternative conception of interaction: B = Behavior, P = Cognition and other person factors, and E = Environment (Bandura, 1978).

Let consider in brief the major international links between the difference subsystems of influence (Bandura, 1978).

The P ↔ B of reciprocal causation reflects the interaction between thought, affect and action. Expectations, beliefs, self- perceptions, goals and intentions give shape and direction to behavior. What people think, believe, and feel, affects how they behave (Bandura, 1986; Bower, 1975; Neisser, 1976). The natural and extrinsic effects of their actions, in turn, partly determines their thought patterns and emotional reactions.

The E ↔ P segment of reciprocal causation is concerned with the interactive relation between personal characteristics and environmental influences. Human expectations, beliefs, emotional bents and cognitive competencies are developed and modified by social influences that convey information, and activate emotional reactions through modeling, instruction and social persuasion (Bandura, 1986). People also evoke different reactions from their social environment by their physical characteristics such as their age, size, race, sex, and physical attractiveness- apart from what they say and do (Lerner, 1982).

The B ↔ E segment of reciprocal causation in the triadic system represents the two-way influence between behavior and the environment. In the transactions of everyday life, behavior alters environmental conditions and is, in turn, altered by the very conditions it creates. The environment is not a fixed entity that inevitably impinges upon individuals. When mobility is constrained, some aspects of the physical and social environment may influence on individuals whether they like it or not. But most aspects of the environment do not operate as an influence until they are activated by appropriate behavior.

Conceptualization of Social Cognitive Theory is emphasized 3 concepts

1. Observational Learning

2. Self-regulation

3. Self-efficacy

Observational Learning

Observational learning (or modeling) is learning by watching others and copying their behavior. As a result, the construct of observational learning can be very useful in explaining why people behave the way they do.

The strength of observational learning depends on how much attention is given to the person who is modeling the behavior. The degree of attention is influenced by a number of things, among them: the attractiveness of the model, the circumstances under which the model is being observed, what is motivating the person to learn the behavior, how important it is that the behavior be learned, and the complexity of the behavior (Bandura, 1977).

Bandura (1986) propose that a fundamental way humans acquire skills and behaviors is by observing the behaviors of others. Four constituent processes that govern observational learning or modeling are: attention, retention, production and motivation.

Self-Regulation

SCT emphasize the human capacity to ensure short-term negative outcomes in anticipation of important long-term positive outcomes, that is, to discount the immediate cost of behaviors that lead to a more distance goal. This is achieved through self-regulation (Karoly, 1993). According to SCT, self-control does not depend on a person's will power but instead on their acquisition of concrete skills for managing themselves. The basic idea is that we can influence our own behavior in many of the same way we would influence another person, which is through rewards and facilitating environment changes that we plan and organize for ourselves.

The three component processes involved in the self-regulation of behavior are through self-observation, judgmental process, and self-reaction.

Self-Efficacy

Self- efficacy is probably the single most important determinant of behavior (Joanna, 2009). Self-efficacy is the belief in one's own ability to successfully accomplish something. Self-efficacy tells us that people generally will only attempt

things they belief they can accomplish and would not attempt things they believe they will fail. However, people with a strong sense of efficacy believe they can accomplish difficult tasks. They see these as challenges to be mastered rather than threats to be avoided. Conversely, people who doubt their ability to accomplish difficult tasks see these tasks as threats. They avoid them based on their own personal weaknesses or on the obstacles preventing them from being successful (Bandura, 1977).

According to Bandura's social learning perspective, expectations of personal efficacy are based on four major sources of information: performance accomplishments (mastery experience), vicarious experience, verbal persuasion and emotional arousal.

SCT provides a comprehensive and well-supported conceptual framework for understanding the factors that influence human behavior and the processes through which learning occur-offering insight into a wide variety to health-related issues. But its greater significance has come from the application of SCT to the design of intervention to meet important practical challenges in medicine and public health.

SCT has been applied in community-level programs to prevent drunk driving and other harm related to alcohol consumption (Bandura, 1986). Concepts from the theory were applied to the reduction of alcohol abuse in the project 'Northland'. In this project, a major emphasis was placed on creating barriers to drinking for reducing access to alcohol (Perry, 2000).

In summary, social cognitive theory holds that behavior is determined by the interaction of personal, environmental and behavioral influences. It differs from behaviorist learning theories in that it includes a cognitive component, that is, individuals can do more than react to an environmental stimulus by forming mental representations and think about the stimulus and their behavior (Basen-Engquist et al., 1999).

2.3 MOTIVATIONAL INTERVIEWING

Motivational interviewing (MI) is a psychological rehabilitation approach used to motivate addicts to change their behavior according to their stage of change.

Originated by Miller and Rollnick, MI adapts Prochaska and DiClemente's Stage of Change Theory, which has effectively motivated individuals to change their behavior to solve several types of physical health problems such as alcohol or drug addiction, obesity, and exercise.

Characteristics of MI are as below:

1. Motivation to change is elicited from the client, and not imposed from without. Other motivational approaches have emphasized compulsion, advice, usefulness confrontation, and the use of external contingencies (e.g., the threatened loss of work or family). Such strategies may have their place in evoking change, but they are quite different in spirit from motivational interviewing, which relies upon identifying and mobilizing the client's intrinsic values and goals to stimulate behavior change.

2. It is the client's task, not the counselor's, to clear and resolve his or her ambivalence. Ambivalence takes the form of a conflict between two courses of action- each of which has perceived benefits and costs associated with it.

3. To have the opportunity of expressing the often confusing, contradictory and uniquely personal elements of this conflict. The counselor's task is to facilitate expression of both sides of the ambivalence impasse, and guide the client toward an acceptable resolution that triggers change.

4. Direct persuasion is not an effective method for resolving ambivalence. It is tempting to try to be "helpful" by persuading the client of the urgency of the problem and about the benefits of change (Miller, Benefield and Tonigan, 1993, Miller and Rollnick, 1991).

5. The counseling style is generally a quiet and eliciting one. Direct persuasion, aggressive confrontation, and argumentation are the conceptual opposite of motivational interviewing, and are explicitly proscribed in this approach. To a counselor accustomed to confronting and giving advice, motivational interviewing can appear to be a hopelessly slow and passive process. The proof is in the outcome. More aggressive strategies, sometimes guided by a desire to "confront client denial," easily slip into pushing clients to make changes for which they are not ready.

6. The counselor is directed in helping the client to examine and resolve ambivalence. Motivational interviewing involves no training of clients in behavioral coping skills, although the two approaches are not incompatible. The operational assumption in motivational interviewing is that ambivalence or lack of resolve is the principal obstacle to overcome in triggering change. Once that has been accomplished, there may or may not be a need for further intervention such as skill training. The specific strategies of motivational interviewing are designed to elicit, clarify, and resolve ambivalence in a client-centered and respectful counseling atmosphere.

7. Readiness to change is not a client feature, but a fluctuating product of interpersonal interaction. The therapist is therefore highly attentive and responsive to the client's motivational signs. Resistance and "denial" are seen not as client characters, but as feedback regarding therapist behavior. Client resistance is often a signal that the counselor is assuming greater readiness to change than is the case, and it is a cue that the therapist needs to modify motivational strategies.

8. The therapeutic relationship is more like a partnership or companionship than expert roles. The therapist respects the client's autonomy and freedom of choice regarding his or her own behavior.

In sum, it is inappropriate to think of motivational interviewing as a technique or set of techniques that are applied to or (worse) "used on" people. It is rather an interpersonal style, which is not restricted to formal counseling settings. It is a subtle balance of directive and client-centered components, shaped by a guiding philosophy and understanding, of what triggers change. If it becomes a trick or a manipulative technique, its essence has been lost (Miller, 1996).

2.4 STAGE OF CHANGE

The Stages of Change was initially developed in the late 1970's and early 1980's by James Prochaska and Carlo DiClemente at the University of Rhode Island when they were studying how smokers were able to give up their habits or addiction. They reviewed the theories of behavior change in human, and then analyzed and

separated the factors believed to be the common psychotherapeutic factors of behavioral change (Prochaska and DiClimente, 1983)

The stages developed by Prochaska and DiClimente represent specific groups of attitudes, intentions, and behavior related to an individual's status in the cycle of change. They provide temporal dimensions since change is a phenomenon that unfolds over time. Each stage reflects not only a period of time but also a set of actions required for moving into the next stage. Although there is variation in the time an individual spends in each stage, the actions to be taken presumably do not vary. The following is a description of each stage and actions to be taken to move into the next stage (Prochaska and DiClimente, 1983).

- Pre-contemplation

The first stage of change is pre-contemplation. People are in this stage from six months prior to the point they begin thinking about making a change in their behavior to when they actually begin thinking about changing. People in this "pre-thinking stage" either don't recognize that their behavior needs change or are just not ready to change a behavior they know they should (Prochaska, DiClimente, and Norross, 1992). The goal is to take information and assist them in moving forward from not thinking about changing their behavior to contemplating, or thinking about changing.

- Contemplation

When people move from pre-contemplation to contemplation it means they recognize there is a problem and they start to think about changing. Numerous things can get people to start thinking about changing their behavior. For instance, newspaper, TV, news report, family, friends, health care professionals. In order to move out of the thinking mode, a decision has to be made to either proceed with the change or not. This is known as 'decisional balance', which is the process of weighing the perceived pros and cons or costs and benefits of the new behavior against the old (Prochaska, 1994). Because the weight or strength of the pros and cons is determined by individual assessment, the length of time needed to make a decision varies, and can be prolonged. Typically, once people start thinking about changing their behavior,

they usually make a decision and plan to make the change within the following six months (DiClemente, Schlundt and Gemmell, 2004).

- Preparation/Determination

The preparation stage begins once the decision to change the behavior is made. Preparation is a short stage, lasting only about one month, since once a person decides to change a behavior, they are often anxious to get started. This preparation time is used to make plans, obtain any tools needed, learn new skill, acquire resources of money or support, housing, and whatever else is necessary for the change to occur.

- Action/Willpower

In this stage, individuals modify their behavior, experiences and/ or environment in order to overcome their problems. Action involves the most overt behavioral changes and requires a considerable commitment of time and energy. Modifications of a problem made in the action stage tend to be most visible and receive the grated external recognition. People, including professional, often erroneously equate action with changes for action and the important efforts necessary to maintain the changes following action.

- Maintenance

In this stage, people have successfully made the break and have sustained the change for sufficient duration to feel that they no longer have a problem. This process may take time and it may be that the stage is only entered after some 6 to 12 months of sustainable change. Traditionally, maintenance has been viewed as a static stage. However, maintenance is continuation, not an absence, of change. For chronic problems, this stage extends from six months to an indeterminate period past the initial action. For some behavior, maintenance can be considered to last a lifetime.

- Relapse

The relapse stage is the rule rather than the exception with problems such as addiction. Many individuals will relapse. During relapse, individuals revert to an earlier stage. Some releasers might feel failure-embarrassment, ashamed, and guilty. These individuals become demoralized and resist thinking about behavior change. As

a result, they return to the pre-contemplation stage and can remain there for various periods of time (DiClemente et al., 1991).

2.5 PHRAMONGKUTKLAO MODEL

This model was developed by Colonel Pichai Saengcharnchai (2003). It is a model of intensive inpatient rehabilitation for alcohol and substance dependence. In setting up the Phramongkutklao model (PMK treatment) it based on the Minnesota model or 28-day program developed at the Minnesota State hospital in 1952. The strength of the model is a combination of professional and non-professional recovering staff. The twelve-step of Alcoholics Anonymous principle for addiction recovery uses spirituality and self-help as the main approaches for the addicts.

The author considers inpatient rehabilitation as an alternative type of addiction treatment in Thailand in contrast to the intensive outpatient program operating currently. The PMK model is a 28-day program. The patients receive group therapy for four hours a day, five days a week. There are eight to ten patients in each group. This program, based on social cognitive theory, will use behavior learning and group processes, which are the main strategies for group therapy.

The inclusion criteria for the patients are that they are completely alcohol and substance detoxified, and are able to attend the 28 days inpatient rehabilitation without having serious current physical and mental problems.

The primary aim of the PMK model is to develop an instrument that is able to encourage the alcohol-dependent patients to reduce alcohol drinking and abstain from it. In addition, the model also can encourage motivation to change their behavior from alcohol consumption and belief in the ability (self-efficacy) to improve their quality of life.

The important ingredients of the PMK model are as follows:

1. Twelve steps Self-help program of Alcoholics Anonymous

Alcoholics Anonymous (AA) is the best known and most successful self-help program. In 1935 in Ohio, an alcoholic now known as Bill Willson had a spiritual

experience that prompted him to stop drinking. After a year of abstinence from alcohol, rather than giving in to an urge to begin drinking again, he sought out another alcoholic for support. He remained sober, recognized the need for peer support, and began the AA organization. There were no dues and the only requirement for membership was a sincere desire for sobriety- a full life without the abuse of alcohol. Independent from religious, social or political organizations, AA members were alcoholics helping other alcoholics by means of meetings, peer support, sharing of stories, and reliance on a "higher power." Total abstinence was stressed. These components of spirituality, emotional and social engagement, and commitment to getting sober still remain central to the organization till today (Kinney, 2006).

Self-help is based in a philosophy that emphasizes the potential inner strength of the individual, the group, and the community. It means to help built around an inner core rather than help offered from outside. Group based on the twelve steps are utilized in all phases of treatment including in-patient treatment, aftercare, relapse prevention, and ongoing recovery.

Additional insight into the mechanism of AA effectiveness can be gained by examining various AA slogans. These include "One day at a time", "Easy does it",

"Letting go", "Grief", "HALT" (hungry, angry, lonely, and tried), "First things first".

Principle of twelve steps is as follows:

1. We admitted that we were powerless over alcohol- that our lives had become unmanageable.

2. Came to believe that a lower greater than ourselves could restore us to sanity.

3. Made a decision to turn our will and our lives over to the care of God as we understood Him.

4. Made a searching and fearless moral inventory to ourselves.

5. Admitted to god, to ourselves and another human being the exact nature for our wrongs.

6. We're entirely ready to have God remove all these defects of character.

7. Humbly asked Him to remove our short-comings.

8. Made a list of all persons we had harmed, and became willing to make amends to them all.

9. Made direct amends to such people wherever possible except when to do so would injure them or other.

10. Continue to take personal inventory and when we were wrong promptly admitted it.

11. Sought through prayer and meditation to improve our conscious contact with God, as we understood Him, praying only for knowledge of His will for us and the power to carry that out.

12. Having had a spiritual awakening as the result of these steps, we tried to carry this massage to alcoholics, and to practice these principles in all our affairs.

   2. Higher power of Buddhism (Phra. Payutto, 1999)

   The author integrated the higher power of Buddhist (Tiratana) with the twelve-step. The objectives are to improve the patients' intellectual ability as well as their ability to see things in a realistic way, to apply their capacity in harmony with nature, and ultimately to abstain from bad things.

   Higher power of Buddhism is the Three Jewels (Tiratana) that is the Buddha, the Dhamma, and Sangha.

   Buddha or Enlightened is a knower and awakener who discovered and proclaimed to the world the law of deliverance-known to the west as Buddhism.

   The Dhamma is the teaching of deliverance in its entirety, which was discovered and proclaimed by the Buddha.

   The Sangha is the order of bhikkhus or medicant monks who devote their life entirely to the realization of the highest goal of deliverance.

   The goal of Buddhism

   Buddhism provides specific practical strategies in the form of threefold training or the eightfold path. These strategies can be developed as a culturally suitable method of behavioral change for treating alcoholism. Strategies activate through three mediators: behavioral, mental, and cognitive. The threefold training

consists of three major categories of behavior, which are training in appropriate behavior to encourage a foundation for life development, training in mental development and training in thinking development or higher wisdom development for achieving of right visions. The right visions refer to reason and conditions that are engaged in the pattern of drinking and the skills required to control or terminate drinking.

The threefold training or the noble eightfold path were used to develop the wisdom which leads to the peace and natural realization. The factors of the noble eightfold path are as follows: right understanding, right though, right speech, right action, right livelihood, right effort, right mindfulness, and right concentration.

The Buddhist Twelve Steps

The details of the adapted Buddhist Twelve Steps are as the followings:

1. I admit my addictive craving over alcohol and drugs, and I cannot take care of myself and my family.

2. I trust and believe that wisdom can lead me to sanity.

3. I wish to have, as my supporter, the Nobel Eightfold Path which is the path to wisdom.

4. I try to understand the Noble Eightfold Path consisting of right view, right thought, right speech, right conduct, right livelihood, right effort, right mindfulness and right concentration.

5. I admit to myself and my beloved ones about my wrong bodily, verbal and mind actions.

6. I am entirely ready to practice the Noble Eightfold Path.

7. I practice the Noble Eightfold Path every day.

8. I make a list of all persons whom I had harmed and who had harmed me. I really mean to ask for and give forgiveness.

9. With the wisdom leading, I ask for and give forgiveness to such people where possible.

10. I continually practice the Noble Eightfold Path and when I act bad bodily, verbal, and mind actions I promptly admit it and amend it.

11. I try to practice right view, right thought, right speech, right conduct, right livelihood, right effort, right mindfulness and right concentration so as to obtain wisdom.

12. Having gained wisdom, knowledge and understanding and having quitted alcohol and drugs, I will share my knowledge, my understanding and the practice principles to other addicts.

Steps of Practicing the Buddhist Twelve Steps (Saengcharnchai, 2003)

Practicing the Buddhist Twelve Steps is like driving a car. Each step can be compared to the distance indicator that tells the driver where he is reaching and how far to go.

First Step: Members have to admit that they are sick with alcohol or drug addiction and admit that they are severely sick till they cannot take care of themselves and their families. If they have this concept, their will put attempt suitable to their problem severity. They will also have kindness which can destruct mental mechanisms usually found in sickness of the addicts. The mental defense mechanisms are denial, rationalization, projection and minimization.

Second Step: Members trust and believe in their mental viability that it can be developed and recovered and they can improve their mindfulness and wisdom which will lead them to the right way of lives.

Third Step: To obtain mindfulness and wisdom, members employ the Noble Eightfold Path, the Buddhist right way of lives, consisting of eight elements.

Fourth Step: Members, with attention, try to learn and understand each element of the Noble Eightfold Path and consider which one they have and which one they don't have.

Fifth Step: Members reconsider their lives during alcohol or drug use to see whether there were any inappropriate bodily, verbal and mind actions to themselves and to other beloved people so as to induce realization and admitting on their fault.

Their beloved people may include the group members having good will and friendship and therapists having good will for the group members. In practical, members can practice this step by telling their fault in the past to other members and showing true realizing and admitting the fault. The deep guilty feeling still remains inside the addicts' mind and is an obstacle to further self development. It also induces the members to use inappropriate mental mechanism so as to feel less guilty. Development in this step help the members face the guilty and realize and admit it. Finally, they can ignore the guilty feeling.

Sixth Step: When feeling guilty is declined the members feel better and have the Noble Eightfold Path as a life guidance. Thus their minds are ready to practice the Noble Eightfold Path.

Seventh Step: Members continually practice the Noble Eightfold Path as their ways of lives.

Eighth Step: Feeling guilty and malice are feelings that still remain inside their mind and make their mind not to be further developed. Mind action such as thought and feeling is a cause of verbal and bodily action. Forgiveness has to be employed to stop present actions so that their future will not be affected. Forgiveness begins within members' mind by reconsidering people who had harmed them and people whom they had harmed and being sincere to forgive. The more considering they had done the more chance to completely ask for forgiveness and to forgive they obtained.

Ninth Step: Members practice this step by directly ask for forgiveness from disputants and directly forgive them. The most effective asking for forgiveness and forgiving is sincerely asking in front of disputants while they are still alive. Members try doing the actions very chance they get. Asking for forgiveness and forgiving help stop present action and stop future effects. There is only retribution in the past existence still active at present but its concentration is declined because of no present action to support it. And their minds will be without feeling guilty and malice.

Tenth Step: Members continually practice the Noble Eightfold Path as their way of lives. Members continually reconsider themselves. When discovering their

fault, they admit and realize it and practice asking for forgiveness and forgiving in every chance they have.

Eleventh Step: Members attempt to increase practicing every elements of the Noble Eightfold Path which supports the members to have mindfulness and wisdom.

Twelfth Step: Members get success from practicing the previous steps and have learned, understood and realized the bad effects of alcohol and drugs and seen the benefit of having good ways of life. In practical, if the members totally quitted alcohol and drug for many years but they still live their lives according to the Noble Eightfold Path. The members have physical and mental strength. They can practice this step by helping the others who are having problems by sharing their experience and ways for problem solution. The help must not be done by forcing them or feeling higher than them. The members frankly transfer their past experience that how their mind was developed and at present how they get mind peacefulness and live their lives in the good way with modesty

3. Cognitive behavior therapy

Cognitive behavior therapy (CBT) is based on Social Learning Theory where alcohol abuse is seen as functionally related to other major problems in a patient's life. From this perspective, patients who abuse alcohol are perceived as not having the skills to cope with other problems. Emphasis is placed on overcoming skill deficits and increasing the ability to cope with difficult situations. Therefore, the main advantage of this approach is to provide patients with coping strategies and resources to fundamentally prevent relapse (Saengcharnchai et al., 2006).

4. Motivational interviewing

Motivational interviewing (MI) is a psychological rehabilitation approach used to motivate addicts to change their behavior according to their stage of change. Originated by Miller and Rollnick, MI adapts Prochaska and DiClemente's Stage of Change Theory, which has been shown to effectively motivate individuals to change their behavior to solve several types of physical health problems such as alcohol or drug addiction, obesity, and exercise. The use of motivational interviewing with alcohol abusers began with the observation of severe problems and relapse among

alcohol dependence. A substantial proportion of drinkers returned to abusive drinking within a few months after treatment; a pattern that still continues (Marllatt and Gordon, 1985).

In the effort to identify components necessary for an effective enduring treatment for alcohol dependence, it became clear that the motivation to reduce one's drinking occurs in the context of others encouragements in the drinker's life. And when those others encouragements gain sufficient value to complete successfully with alcohol use, drink consumption decreases (Cox and Klinger, 1990).

5. Stage of change

The Stages of Change from the transtheoretical theory was initially developed in the late 1970's and early 1980's by James Prochaska and Carlo DiClemente at the University of Rhode Island when they were studying how smokers were able to give up their habits or addiction. They reviewed the theories of behavioral change in humans by analyzing and separating the factors believed to be the common psychotherapeutic factors of behavior change. The PMK model used the stage of change to motivate change in behavior. Miller and Rollnick, (1991) identified how the stage of change was associated with motivation interviewing. The first stage of pre-contemplation is useful when trying to understand why unhealthy behaviors are not changed. The goal of MI is to get this information and assist them in moving forward from not thinking about changing their behavior to contemplation or thinking about changing. When the patients move to contemplation, guidance about the pros and corns should be given about the new behavior. Then, the preparation stage provides a menu with options to plan for change. The action stage is to give encouragement and support actions. If the patients can reach the stage of action, maintaining it by motivation and making adjustments are necessary. Finally, if the patients relapses, acknowledge relapse as a normal part of the process and revisit the contemplation stage to decide on alternative reasons for change.

The stages of change are:

- Pre-contemplation (Not yet acknowledging that there is a behavioral problem needed to be changed)

- Contemplation (Acknowledging that there is a problem but not ready or sure of wanting to make a change)

- Preparation/Determination (Getting ready to change)

- Action/Willpower (Changing behavior)

- Maintenance (Maintaining the behavior change) and

- Relapse (Returning to old behaviors and abandoning the new changes)

6. Health Education

Health education was given to the patients. Health education was provided twice a week for four weeks-eight sessions in total. The sessions included: 1) history and current situations of drug problems, 2) laws related to drugs, 3) drugs that are common in Thailand, 4) cigarettes and alcohol, 5) brain addiction to drugs, 6) the therapeutic approach of the PMK Model and networks, 7) feedback on health as well as physical, mental, and social conditions, and 8) balanced lifestyle.

7. Family Education

In this model, family (parents, spouse, relative, and friend) was invited to participate in the family sessions, which are primarily psycho-educational in structure and in purpose. They received the content about the family's role in preventing and solving addiction, family readjustment after cessation of alcohol consumption, and useful information about alcohol and drugs. This approach recognizes the importance of family and significant others in affecting the patient's decision to change drinking behavior. This emphasis is based upon recent findings from a variety of alcohol treatment studies. For instance, alcohol dependence and maintaining positive ties with family members fared better in relationship enhancement therapy than in an intervention focused primarily on the psychological functioning of the patient (Longabaugh et al., 1994). Involvement of family in the program offers several advantages. It provides the family an opportunity for firsthand understanding of the problem. It permits the family to provide input and feedback in the development and implementation of treatment goals. The patient and family can also work together on

issues and problems that might interfere with the attainment of treatment goals (Margarate et al.,1995).

        8.   The multidisciplinary team

        The PMK model is composed of a psychiatrist, a clinical psychologist, a social worker, psychiatric nurses and nursing aids. They provide a team meeting once a week. Every staff member has been trained in motivational interviewing and to have motivational enhancement therapy skills (Saengcharnchai, 2003).

2.6 RELATED STUDIES

        According to a review of research literature that has not yet been used in Phramongkutklao model. Therefore, the research literature used the research study that is similar to this model.

        Stinchfield and Owen (1998) studied the effect of Hazelden's treatment or Minnesota model. This model is a common approach for the treatment of alcoholism and drug abuse. Hazelden's treatment method is base on the philosophy of the twelve-step program of Alcoholics Anonymous (AA), including the therapeutic goal of abstinence. To present a description of the therapeutic orientation and of the outcome of Minnesota model as practiced at Hazelden, a private residential alcohol and drug abuse treatment center located in Center City, Minnesota was used. The study included 1,083 male and female clients admitted to Hazeilden for treatment of a psychoactive substance use disorder between 1989 and 1991. After a 1-year follow-up, 53% reported that they remained abstinent during the year following treatment and an additional 35% had reduced their alcohol and drug use. The Minnesota model has consistently yielded satisfactory outcome results.

        Tian, Oei and Tamara (2000) used 168 first-year psychology students to participate in the experiment for a course credit reported that alcohol expectancies (AEs) and moderate drinking refusal self-efficacy (DRSE) constructs were specifically related to quantity of alcohol consumption, but not to caffeine or nicotine intake. These results provided empirical evidence to confirm the theoretical and

practical utility of these two cognitive constructs to alcohol research, and also serve to strengthen the theoretical foundations of the alcohol expectancy theory.

Sairat Noknoy et al., (2004) had 117 eligible participants randomly controlled in an experimental trial using motivational enhancement therapy (MET) by nurses for hazardous drinkers in a primary care unit in Thailand. Results showed that self-reported drinks per drinking day, frequency of hazardous drinking, and binge drinking session were reduced in the intervention group more than in the control group (p < 0.05).

Britt et al., (2004) conducted a review in motivational interviewing (MI) in health setting. They suggested that there is evidence proving that the patient-centered approaches to health care consultations may have better outcomes than traditional advice giving, especially when lifestyle change is involved. MI is a patient-centered approach that is gaining interest in the health sector. MI appears to hold substantial promise for behavior change. It is more reliable with patient-centered approaches in health care in which the health practitioner-patient relationship is seen as a partnership rather than the expert-recipient formula. MI also provides health practitioners with a means of tailoring their interventions to suit the patient's degree of readiness for change. In particular, it provides practitioners with an effective means of working with who are ambivalent about or not ready for change.

Darunee Phukao (2006) used 45 patients to integrate Buddhist-Thai culture and motivation interviewing-cognitive behavior therapy (BUMICBT), which showed that there was a significant reduction in overall alcohol consumption in participants receiving BUMICBT in addition to standard care. This improvement remained relatively consistent and did not decline significantly over the six-month follow up period.

Grenback and Nielsen (2006) studied a randomized controlled trial of Minnesota day clinic treatment of alcoholics. To compare the Minnesota day clinic treatment with the traditional public psychosocial treatment, 148-alcohol dependence patient were included in a one-year clinical trial. The Minnesota day clinic offers private six to eight weeks mandatory attendance at Minnesota center for five days a week. The philosophy behind the treatment is base on the Twelve-step procedure of

Alcoholics Anonymous (AA). They summarize that a year after onset treatments, the Minnesota day clinic treatment dose doesn't differ in effect from the much cheaper standard public treatment. However, patients in Minnesota treatment were total abstainers throughout a long period.

Charnchai Thongphanit (2007) studied a case management with 99 patients (all males) completing the program. The average age was 41.6 years old. Results showed that about 52 % of patients were in contemplation stage, 18% in determination and 26% in pre-contemplation. After a three and six month follow-up, the remission rate was 52.2 % and 41.1 %. The relapse rate was 15.2 % and 7.1 % while loss to follow up was 32.3 % in three months and 78.8 % in six months after program completion. Consequently, case management can improve the effectiveness of in-patients based program for alcohol dependence patients.

Christine and Anna, (2007) studied a randomized controlled trial of intensive referral to 12-step self-help groups. One-year outcomes on substance use disorder (SUDs) outpatients' treatment at a Department of Veterans Affairs. 345 patients were randomly assigned to a standard referral or an intensive referral-to-self-help condition, and provided self-reports of 12-step group attendance and substance consumption during the baseline, six-month, and 12-month follow-up. The results found that the patients who received intensive referral were more likely to attend and be involved with 12-step group during both the six-month and one-year follow-up periods, and improved more on alcohol and drug use outcomes over the year. Specifically, during both follow-up periods, patients in intensive referral were more likely to attend at least one meting per week and had higher self-help group involvement and abstinent rates (51% versus 41%, p = 0.04). 12-steps involvement mediated the association between referral condition and alcohol and drug outcomes, and was associated with better outcomes.

Morgenstern et al., (2007) studied a randomized controlled trial of goal choice intervention for alcohol consumption disorders among men who have sex with men. They tested the efficacy of behavioral treatment for alcohol use disorders (AUD) compared to a stand-alone four session motivation interviewing (MI) intervention combined with a 12- session MI + cognitive-behavior therapy (CBT) intervention.

The results found that the participants were in early stages of readiness to change. In addition, few participants preferred abstinence as a treatment goal despite therapists' use of guidelines about the benefits of abstinence for more dependent drinkers. Therefore, supporting the assumption of lowering intervention thresholds can draw problem drinkers who need treatment, but do not seek help from traditional approaches, especially in those that demand commitment to abstinence as a requirement to another care. The participants in both treatment conditions significantly reduced their drinking during the active phase of treatment. These reductions were accompanied by reduction in drug use as well. At the end of treatment, reductions in drinking were sustained during the post treatment period.

Long-term abstinence and well-being of alcohol-dependent patients after intensive treatment and after care telephone contacts were studied by Rus-Makovec et al in 2008 to identify whether intensive treatment and after care telephone contacts influenced long-term abstinence and well-being of patients with alcohol dependency. 622 alcohol-dependent patients were investigated at the beginning and end of the intensive in-patient treatment. At the end of the treatment, the patients were divided into two groups: telephone contact group (n=347) and no contact group (n= 257), which use the basic outcome criteria including abstinence, marital and employment status, self-regulation of well-being). They concluded that significant differences in well-being variables between telephone contact group and no contact group at 24 months after the end of intensive treatment are at least partially due to phone contact/informative checking after 3, 6, and 12-month of intensive therapy. Telephone or any accessible communication-checking device is a promising supportive and research tool in aftercare alcohol addiction treatment because of its cost-benefit advantages.

Adeline et al., (2010) conducted a study on methadone-maintained (MM) clients who engaged in excessive alcohol use. MM participants were randomized into three groups: (1) nurse-led hepatitis health promotion group sessions (n=87), (2) Motivation Interviewing (MI) delivered in group sessions (n=79), or (3) MI delivered one-on-one sessions (n=90). The results found that self-reported alcohol consumption was reduced from a median of 90 drinks per month at baseline to 60 drinks per month

after six-month follow up. The major finding of this study was that all three interventions resulted in significant reduction in drinking behavior at six-month follow-up ($p < 0.05$). They were no significant differences found among treatment groups with respect to drinking reduction.

The literature review on the prevention of alcohol consumption programs also shows that personal factors are related to drinking behavior such as the amounts of alcohol consumed per day and the starting age. Nevertheless, intervention alcohol consumption programs can help reduce and abstain from drinking as well as may improve quality of life in alcohol consumption, particularly in alcohol-dependent problems.

CHAPTER III
MATERIALS AND METHODOLOGY

The study is designed to evaluate the effectiveness of Phramongkutklao (PMK) model rehabilitation program for inpatient that are only implemented in the psychiatry ward at the department of psychiatry and neurology, Phramongkutklao hospital, Bangkok, Thailand. After that the outcomes strengths and weaknesses were analyzed to develop a new model for alcohol dependence outpatient. Furthermore, the new model was evaluated to show the effectiveness that could help alcohol-dependent outpatients to reduce or abstain from alcohol consumption.

3.1 CONCEPTUAL FRAMWORK

The conceptual framework of this study was based on the Social cognitive theory developed by Albert Bandura in the 1970s. It is based on the concept of reciprocal determinism, which is the dynamic interplay among personal factors (knowledge, skills, experience, culture, etc.), the environment, and behavior. It proposes that changing one of these factors will change them all. Conceptualization of Social cognitive theory emphasizes three main principles. Firstly, observational learning (or modeling) is learning by watching others and copying their behavior. As a result, the construction of observational learning can be very useful in explaining why people behave the way they do. The second is self-regulation that emphasizes the human capacity to ensure short-term negative outcomes in anticipation of important long-term positive outcomes, that is, to discount the immediate cost of behaviors that lead to a more distant goal. Finally, self-efficacy tells us that people generally will only attempt things they believe they can accomplish and won't attempt things they believe they will fail. SCT provides a comprehensive and well-supported conceptual framework for understanding the factors that influence human behavior and the processes through which learning occurs- offering insight into a wide variety to health-related issues. However, its greater significance has come from the application of SCT to the design of intervention to meet important practical challenges in medicine and public health.

Figure 2 display the rehabilitation process and outcomes

Independent variable
-Demographic and socioeconomic profiles
-Alcohol drinking behavior (quantity/ frequency drinking)
-Readiness to change
-Self-efficacy
-Quality of life

Intervention: Phramongkutklao model
-Cognitive behavior therapy
-The Buddhism twelve steps
-Health education
-Family education
-Relaxation

Dependent variable
-Reduce/abstinent alcohol-drinking behavior (quantity/ Frequency drinking)
-Improve readiness to change, Self-efficacy, and Quality of life (baseline, 1- month, 3-month, and 6 month)

Development a new model for outpatient

Intervention: New model for outpatient
-Cognitive Behavioral Therapy
-Motivational Interviewing
-The Buddhist Twelve Steps
- Family education

Independent variable
-Demographic and socioeconomic profiles
-Alcohol drinking behavior (quantity/ frequency drinking)
-Readiness to change
-Self-efficacy
-Quality of life

Dependent variable
-Reduce/abstinent alcohol-drinking behavior (quantity/ Frequency drinking)
-Improve readiness to change, Self-efficacy, and Quality of life (baseline, 1- month, 2-month, and 3 month)

3.2 DESIGN

The PMK Model

A two-group randomized controlled trial was employed to perform this intervention study. The intervention period of the interactive group was 28-days, and comparison of alcohol-dependent inpatients in two conditions was conducted at baseline, 1-month, 3-months, and 6-months.

Figure 3 Flow of patients through the trial (PMK model)
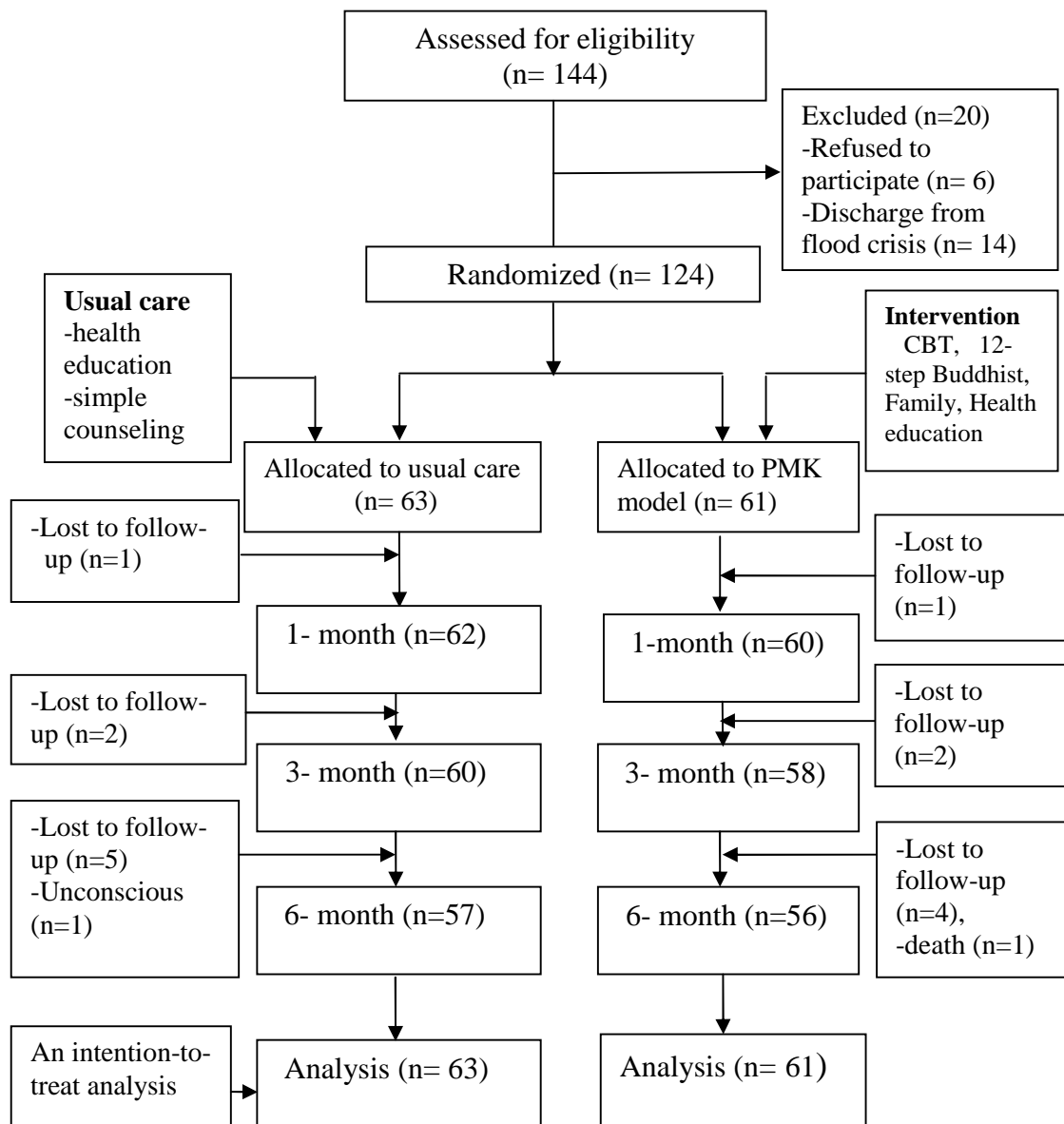
Figure 4 Flow of patients through the trial (The new model for outpatient)
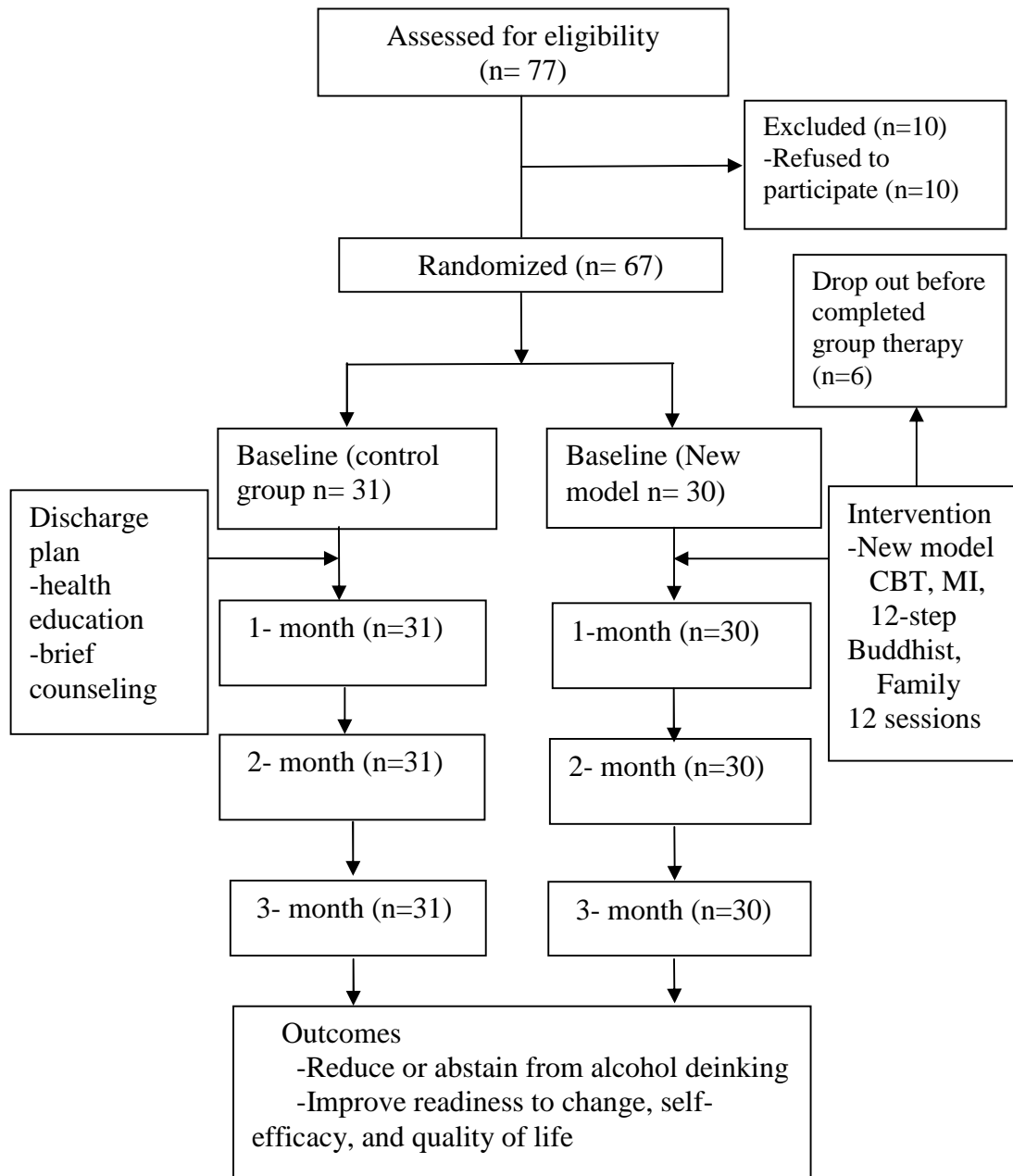
The New Model for Outpatient

A randomized controlled trial was assigned into the new model for outpatient consisting of alcohol-dependent outpatient rehabilitation program, (n=30) or control group (n=31). The alcohol detoxification sessions were provided before participating in the new program. The randomized controlled group received health education

leaflets and brief counseling after their alcohol detoxification completion. Then the three follow-ups with the assistant researcher for data collection were appointed in the first, second and third month. Alcohol-drinking behaviors were appraised by researcher's survey.

3.3 PARTICIPANTS AND SETTING

The PMK Model

Purposive sampling was applied for the research setting. Hence, this study was also carried out at inpatient psychiatry ward in the department of psychiatry and Neurology, Phramongkutklao Hospital, Bangkok, Thailand. The 4th Diagnostic and Statistical manual of Mental Disorder (DSM-IV) was used to diagnose alcohol-dependence while the Alcohol Use Disorder Identification Test (AUDIT) to determine the level of alcohol addiction assessed 124 alcohol-dependent patients. In addition, the study was approved by the Ethics Review Committee for Research Involving Human Research Subjects, Phramongkutklao Hospital and the local committee (No.Q004q/54_E, 09/03/11- 08/03/13). 124 alcohol-dependent patients were examined. Alcohol-dependent patients were randomized by using the computer to assign them into two conditions: one was in usual care and another was in the PMK model group. Team staff and patients were blinded to which group they were assigned to until the patients gave their consent to engage in this study.

The New Model for Outpatient

The experiment was conducted during October 2011 to May 2012 at Mae Sot General Hospital in Tak province, Thailand. The 4th Diagnostic and Statistical manual of Mental Disorder (DSM-IV) was used to diagnose alcohol-dependence while the Alcohol Use Disorder Identification Test (AUDIT) to determine the level of alcohol addiction assessed 61 alcohol-dependent patients. The alcohol detoxification sessions were provided before participating in the alcohol-dependent outpatient rehabilitation program. Simple random sampling was used in order to assign them into two conditions: one was in control group and another was in the experimental group. The study was also approved by the Ethics Review Committee for Research

Involving Human Research Subjects, Phramongkutklao Hospital and the local committee (No.Q004q/54_E, 09/03/11- 08/03/13).

3.4 ELIGIBILITY CRITERIA

This study determines inclusion and exclusion criteria's as follows:

3.4.1 Inclusion criteria: The samples were alcohol-dependent patients, with the following qualifications:

3.4.1.1 The patients both male and female patients were Thai ethnicity.

3.4.1.2. The patients aged 18 or older.

3.4.1.3 The patients were screened as dependence by AUDIT score > 19

3.4.1.4 The patients diagnosed as alcohol-dependent patients determined by using DSM-IV.

3.4.1.5 The patients completed alcohol detoxification around 14 days.

3.4.1.6 Voluntarily gave consent to participated in the study and able to attend the study.

3.4.2 The exclusion criteria are:

3.4.2.1 The patients had serious current physical and mental problems.

3.4.2.2 The patients could not completely attend the program duration.

3.4.2.3 The patients had impaired cognitive.

3.5 SAMPLE SIZE ESTIMATION

The PMK Model

The sample size was calculated based on Noknoy's study. Assuming the mean difference in intervention effect of quantity of alcohol consumption change between groups is 3 ± 5 (mean $\pm$ SD) with 90% power at the 95% confidence interval. The sample size was calculated according to the equation $n = 2 (Z_{a} + Z_{1-\beta})^2 \sigma^2 / (\mu_1 - \mu_2)$.

Therefore, the estimated sample size per group was 58 (Rosner, 1995). Furthermore, taking into account for the expecting drop outs during the experimentation and ensuring confidence, subjects were added for 10%. Finally, the sample size of this study was 64 cases for each group.

Solution $\quad n_{each} = \dfrac{2 (Z_{a} + Z_{1-\beta})^{2} \sigma^{2}}{(\mu_1 - \mu_2)^2} = 2 (1.96 + 1.28)^2 \, 5^2 / 3^2$

$$= 58$$

n $\qquad$ = sample size (in each group)

Z_{a} $\qquad$ = 1.96 (95% CI confidence interval)

$Z_{1-\beta}$ $\qquad$ = 1.28 (90% power)

σ^2 $\qquad$ = Variance of different (from previous similar studied = 5)^2

$\mu_1 - \mu_2$ $\qquad$ = The difference of the average score between the before and after experimental = 3 point (Noknoy, 2004)

The total sample size were 128

The New Model for Outpatient

The percentage of patients that met the primary outcome definition was compared between two randomized groups. Seventy patients were required to have a 90% chance of detecting, as significant at the 5% level, an increase in the primary outcome measure from 38% in the control group to 75% in the experimental group (reducing of quantity of drinking in the PMK model compared with usual care groups). Calculations were based on the formula (Pocock, 1983). Taking into account for the expecting drop outs during the experimentation and ensuring confidence, subjects were added for 10%. Finally, the sample size of this study was 35 cases for each group.

Solution $\quad n_{each}$ $\qquad$ = f (a,) x $[p_1 (100 - p_1) + p_2 (100 - p_2)] / (p_1 - p_2)^2$

$\qquad\qquad\qquad$ = $(1.96 + 1.28)^2 [38 (62) + 75 (25)] / (37)^2 = 32$

n $\qquad$ = sample size (in each group)

p_1 $\qquad$ = percent success in the usual care group (38%)

p₂ = percent success in the PMK model group (75%)

$f(a,)$ $= (Z_a + Z_{1-\beta})^2$

Z_a = 1.96 (95% CI confidence interval)

$Z_{1-\beta}$ = 1.28 (90% power)

The total sample size was 70

3.6 PROCEDURE

The present study comprised three main phases. The first phase was the experiment of the Phramongkutklao model. The second phase was the development of a new model for outpatient based on the effects of the Phramongkutklao model. The third phase was the preliminary of a new model (alcohol outpatient rehabilitation program). Detailed descriptions of these phases are as follows:

Phase 1: Experimenting the Phramongkutklao (PMK) model

First stage preparation

1. All alcohol-drinking patients were diagnosed if they were alcohol-dependent by a psychiatrist according to the 4th Diagnostic and Statistical manual of Mental Disorders (DSM-IV). Then researcher screened the patients by using the Alcohol Use Disorder Identification Test (AUDIT) to determine the level of alcohol addiction.

2. The patients received physical and mental examination. Then they received complete alcohol detoxification to be able to attend 28 days of inpatient rehabilitation.

3. The objectives of participation and the details of the program were explained to target subjects. The researcher then motivated the patients to participate in the project. After the patients agreed to participate in the project, the patients were assigned by simple random sampling into two conditions: one was the experimental group (PMK model) and another was the usual care group.

4. The PMK model manual was distributed to those involved. Suitable dates for the participation in the PMK model activities were planned by the cooperation

among researcher, teams, and participants. The participants signed an informed consent.

5. Alcohol-dependent patients were assessed by using the Alcohol Use Disorder Identification Test (AUDIT) for the level of alcohol addiction. Their alcohol-consumption behavior was appraised by the survey of the researcher setting questions of which concerned demographic, socioeconomic data and alcohol-consumption behavior. The question about readiness to change alcohol drinking, self-efficacy, and impacts of alcohol consumption towards quality of life were also inquired.

Second stage implementation

The Phramongkutklao model developed by Col. Pichai Saengcharnchai (2003) is a model of intensive inpatient rehabilitation for alcohol and substance dependent patients. The 12-step of Alcoholics Anonymous is its principle for addiction recovery that includes the approaches of spirituality or a higher power and self-help in order to enlighten the addicts.

The PMK model is comprised of a 28-day program. The patients receive a group therapy for four hours a day, five days a week. There are eight to ten patients in each group. Cognitive behavior learning and group processes are the main strategies for group therapy.

The important content of Phramongkutklao model (PMK model) is comprised of five courses as follows:

1. Buddhist twelve steps consists of eight sessions and eight lessons: 1) the Buddhist twelve-step 2) a spiritual disease 3) the Eightfold Path that lead to the extinction of suffering 4) self-development of Buddhist 5) training of mindful skill 6) Practice of concentration 7) Yonisomanasikarn (Analytical thinking), and 8) Karma and cessation of karma.

2. Cognitive Behavior Therapy provides eight sessions and eight lessons: 1) Cognitive Behavior modification 2) Circuit cues and craving (ABCD Method) 3) Emotional management 4) Problem solving 5) Automatic Thoughts 6) Skill of assertiveness and refusal 7) Adaptation, and 8) Healthy for good health.

3. Health Education is comprised of eight sessions and eight lessons:

1) The current situation of substance 2) Law 3) Drug index hallucinogen, stimulants, depressants 4) Tobacco and Alcohol 5) Chemical dependence 6) PMK Model and net work 7) Feedback information, and 8) Balance Daily Life.

4. Family Education is divided into four sessions and four lessons:

1) Family psycho education 2) Impact of alcohol misuse 3) Family readjustment after cessation of drug abuse, and 4) Role of family and problem solving.

5. Relaxation therapy requires the patients to attend 12 recreational activities (yoga, music, meditation, exercise, sports, games, and etc) within a four-week period, at least three sessions per week.

Figure 5 Schedule of PMK Inpatients Rehabilitation Program

Time / Day	10.00-12.00 am.	12.00-13.00 pm.	13.30-15.30 pm.
Monday	Health Education		Cognitive Behavior Therapy
Tuesday	The Buddhist Twelve Steps		Relaxation
Wednesday	Cognitive Behavior Therapy	Lunch	Relaxation
Thursday	Health Education		The Buddhist Twelve Steps
Friday	Family Education		Recreation Therapy

Third stage: follow up

In this stage, the researcher conducted a follow-up at addiction clinic, home visit, and via telephone. At baseline, 1-month, 3-month, and 6-month were monitored. The questionnaires were used to investigate into alcohol consumption behavior, readiness to change, self-efficacy and quality of life throughout the sessions.

Fourth stage: analysis of pilot outcomes

The pilot outcomes were compared with the final outcomes of experiment of the Phramongkutklao model such as abstinent rate, quantity of drinking, and survival rate.

Usual care

Routinely, patients in a randomized controlled group received a health education manual and brief counseling after they completed the alcohol detoxification. Then they had three appointments with the researcher in the first, third and sixth month respectively for follow-up data collection. In addition, questionnaires were utilized to ascertain alcohol consumption behavior, readiness to change, self-efficacy, and quality of life throughout follow-up.

Phase 2: Development of a New Model for Outpatients

The aim of this phase was to develop an instrument that is able to modify cognitive behavior and motivate the patients to reduce and abstain from alcohol consumption.

Based on the results of the Phramongkutklao model, the researcher compared the outcomes according to demographic, socioeconomic, alcohol consumption behavior and etc. After that, the strengths and weaknesses of the Phramongkutklao model were analyzed to develop a new model that is suitable for alcohol-dependent patients in outpatient. The multidisciplinary team needed to discuss the constructive concept for a prototype development. The concepts synthesized in this model development were patient empowerment and patient center approach, which were considered vital strategies for addiction recovery. These approaches concern spirituality or a higher power and self-help in order to enlighten the addicts.

Phase 3: The Preliminary trial of a New Model

The objective of this phase was to test a new model that was to evaluate the efficacy of the model. The new model was performed to reduce and abstain from alcohol consumption. The setting was done on alcohol-dependent patients in outpatient at Mae Sot General hospital by using a randomized controlled trial. In addition, the intension of the new model was to be suitable for outpatient so was shorted execution time. The outpatients attended 12 group sessions (one session per

time) and then follow-up at 30, 60, and 90 days. The expected benefits of this model are applied to continue implementation at Mae Sot hospital.

Procedure

Procedure of experimental of new outpatient treatment program, it a new model for outpatient this in term used "New model" was as follows:

1st stage preparation

1. All alcohol-drinking patients were diagnosed if they were alcohol-dependent by a psychiatrist according to the 4th Diagnostic and Statistical manual of Mental Disorders (DSM-IV). Then the Alcohol Use Disorder Identification Test (AUDIT) was used to determine the level of alcohol addiction.

2. The patients received physical and mental examination. Patients then received complete alcohol detoxification to be able to attend the three-month (once a week for 12 weeks) outpatient rehabilitation.

3. The objectives of participation and the details of the program were explained to target subjects. Then the assistant-researcher motivated the patients to participate in the project. After the patients agreed to participate in the project, the patients were assigned by simple random sampling into two conditions: one was the experimental group (new model) and another was the controlled group.

4. The new model manual was distributed to those involved. Suitable dates in the participation of the new model activities were planned by the cooperation among assist-researcher, teams, and participants. The participants signed an inform consent.

5. Alcohol-dependent patients were assessed by using the Alcohol Use Disorder Identification Test (AUDIT) for the level of alcohol addiction. Their alcohol-drinking behavior was appraised by the survey of the assistant-researcher, which the questions concerned demographic, socioeconomic data and alcohol-drinking behavior. The question about readiness to change alcohol drinking, self-efficacy, and impacts of alcohol consumption towards quality of life were also inquired.

2nd stage implementation

The new model consisted of 12 sessions of activities, each conducted once a week and taking 90-120 minutes. Each activity was either in the form of group session participated by a facilitator and eight to ten patients using group dynamic to enable learning as well as behavioral changes, or in the form of a conjoint session participated by the patient, family members or the people with whom they had a close relationship. These people supported the patients and were involved in planning, collecting data, learning, and playing a part in rehabilitating the patients. The contents of the new model were as follows.

Health education and motivational interviewing is comprised with firstly-a conjoint session building motivation for alcohol abstinence. The second activity comprised of conjoint session planning and cognitive behavior modification, while the third activity is a group session on alcohol dependence and progression.

Recovery skill training is comprised in the forth activity of having a group session on circuit cues and craving. The fifth activity is a group session on emotional management, and while the sixth activity is a group session on skill of assertiveness and refusal.

Good-self and value development consists in the seven activity of having a group session on spiritual disease. The eighth activity is a group session on the Buddhist Twelve Steps. The ninth activity shows a group session on self-development of Buddhist, and while tenth activity is a group session on health for good health.

Family support and relapse prevention provides the eleventh activity, which sees a conjoint session on the roles of family and problem solving, and the final twelfth activity is a conjoint session on relapse prevention.

3rd stage: follow up

In this stage, the assistant-researcher conducted a follow-up at addiction clinic and home visit. At baseline, one month, two months, and three months were monitored. The questionnaires were used to probe into alcohol drinking behavior, readiness to change, self-efficacy and quality of life throughout the sessions.

Control group

Regularly, patients in a randomized controlled group received health education leaflet and brief counseling after they completed the alcohol detoxification. Then they had three appointments with the assistant-researcher in the first, second and third month respectively for follow-up data collection. In addition, questionnaires were utilized to ascertain alcohol drinking behavior, readiness to change, self-efficacy, and quality of life throughout follow-up.

3.7 RESEARCH INSTRUMENT

A survey questionnaire was developed, which was divided into six parts as follows:

1. Demographic and socioeconomic data was collected by a structured questionnaire including age, gender, marital status, education level, occupation, income, history of drinking, and duration of drinking. Alcohol consumption was estimated by using a questionnaire developed by the researcher to measure cumulative alcohol consumption, type of alcohol drinking and pattern of drinking.

2. A screening test was assessed using The Alcohol Use Disorders Identification Test (AUDIT) to help the researcher identify whether the patients have hazardous drinking, harmful drinking or alcohol dependence. This questionnaire consists of 10 items. This study used AUDIT to screen the level of alcohol consumption. In addition, reliability tests in the psychiatry ward at Phramongkutklao hospital, Cronbach's alpha was 0.72.

3. The Quality of life (WHOQOL-BREF-THAI) was examined through 26 items based on World Health Organization (WHO) standard adapted by Mahautnirunkul, 2004 concerning physical health, psychological well-being, social relationships, and environment. Each item was scored on a five-point Likert scale. Higher scores indicated higher quality of life. Cronbach's alpha for the scale in this study was 0.88.

4. The self-efficacy measurement was applied on a five-point scale from "most" to "least" (Velicer et al., 1990 and Seangduanchai, 2010). There were three

situations that stimulated drinking: positive situations, negative situations, and craving drinking. Therefore, this section of the questionnaire consisted of 20 rating scale questions to estimate the patients' self-efficacy in such situations. Cronbach's alpha for the scale in this study was 0.97.

5.   The readiness to change alcohol drinking tested the level of motivation and has been validated for use in alcohol dependence (Paoblek, 2009). The 32 items in the questionnaire were rated in terms of stages of change (pre-contemplation, contemplation, action, and maintenance). Each item on a five-point response scale from 1 "No strongly disagree" to 5 "Yes strongly agree". Scale scores dichotomized the average score per subscale. To obtain the readiness to change score, first sum items from each subscale and divide by 7 to get the mean for each subscale. Then sum the means from the contemplation, action, and maintenance subscales and subtract the pre-contemplation mean (c+a+m-pc = readiness). The internal reliability of the scale in this sample was 0.80. Outcomes were measured using the same instrument at baseline and follow-ups after implementation one, three, and six-month (one, two, and three-month follow-up on alcohol outpatient rehabilitation program).

The questionnaire was tested for validity and reliability before being used for data collection. Its content validity was assessed by specialists and experts, including psychiatrist, health service providers, and social scientists, while its reliability was pre-tested with 30 subjects.

3.8 DATA ANALYSIS

Statistical analyses of the data were undertaken. An intention-to-treat analysis was carried out. An intention-to-treat analysis is the principal technique used since it avoids the beginning of post-randomization bias. Although the first randomization to experiment or usual care minimizes the opportunity of bias, this benefit may be lost by patients discontinuing the intervention to which they were allocated. Therefore, to protect the benefit of randomization, the intention-to-treat analysis included all randomized patients. As in some previous alcohol treatment outcomes studies, patients who did not provide actual data at the end follow-up were assigned their pretest scores (Anderson and Scott, 1992; WHO, 1996). This process is base on the

traditional assumption that patients who did not follow-up had no change from their baseline drinking behaviors (Shakeshaft et al., 2002). Changes in the outcome measure over time by using repeated measures general linear model analysis of variance was assessed. A t-test of difference between means group was also conducted. Additionally, a chi-square test of independence was done to provide estimates of significant differences in outcome measure between the experimental and control groups. Finally, the data were also tested for normal distribution.

3.9 ETHICAL CONSIDERATION

Approval from the Ethics Review Committee for Research Involving Human Research Subjects at Phramongkutklao hospital and the local committee was obtained before the processes started. Purposes and procedures of the study were clearly explained to the participants. Informed consent from the participants needed to be granted. The subjects told that they were free to participate or withdraw at any time throughout the processes. All the information was treated as strictly confidential.

During the first session of the intervention program, the subjects were asked to complete a demographic questionnaire and the Alcohol Use Disorders Identification Test (AUDIT). During the last and follow-up sessions the subjects were asked again to complete the questionnaire about drinking behavior and quality of life as well as the AUDIT. The subjects' privacy was protected by the researcher throughout the study. All information were kept confidential and used for research purpose only.

CHAPTER IV
RESULTS

The present study aimed to examine the effectiveness of the PMK or 28-Day Model in the rehabilitation of alcohol-dependent inpatients having completed a program lasting for 28 days and been followed up for a period of six months. Another objective of the research was to analyze the strengths and limitations of the model in order that it could be adapted for the rehabilitation of outpatients. The data were analyzed based on the objectives and used to test the hypotheses of the study. The data analysis was comprised of three main phases: 1) the experimental phase, 2) development alcohol outpatient rehabilitation program (new model) phase, and 3) experimental the new model phase. The details were as follows.

4.1 PHASE I THE EXPERIMENTAL

Results of PMK Model

Out of the 144 patients who were assessed for eligibility were alcohol dependence according to DSM-IV and AUDIT scores. Twenty patients were excluded because of refusal (n=6) and discharge before completing the treatment because of the flood crisis in October to November, 2011 in Bangkok (n=14). As a result, a total of the patients in this study were 124. In all, 91.1% of participants completed all two groups. 90.5% (usual care group) and 91.8% (PMK model group) respectively completed the 6-month follow-up.

In phase 1, the results are reported in two stages. In stage 1, the demographic information of the sample groups and descriptive statistics are presented. Stage 2 reports on the results and data analysis to test the research hypotheses.

4.1.1 The demographic information and descriptive statistics

4.1.1.1 Demographic Characteristics

From the baseline data as displayed in Table 1 demographic and socioeconomic of patients attended PMK model and usual care groups at baseline and completed the three follow-ups at 1, 3, and 6-month, there were no significant differences between PMK model and usual care groups in age, religion, marital status, education, occupation, incomes, daily alcohol consumption, frequency of drinking, age of first drinking, duration of drinking, type of alcohol, and AUDIT scores. A total participant was male (100%). The average age was 46.3 years (SD=9.2), and ranged from 24-68 years. The majority of participants was Buddhists (96.8%) followed by Islam (2.4%). Most were married (58.1%), followed by divorced or separated (24.2%). More than half of them had secondary education, a vocational degree, or a high vocational degree (66.9%). In term of their work, the majority was soldiers (staff sergeants) at the Royal Thai Army; the Ministry of Defense (62.9%) followed by laborers (19.4%), while the minority was jobless (5.6%). With regard to their income, half of the subjects earned 10,000-20,000 Baht per month (44.3% and 42.9%), followed by less than 10,000 Baht per month (37.7% and 331.7%).

Table 1 Baseline characteristics of PMK model and usual care group (Demographic and socioeconomic)

Variables	PMK model (n=61)		Usual care (n= 63)		p-value
	N	%	n	%	
Gender -male	61	100	63	100	
Age(year)(M ± SD)	45.2±9.5		47.9±8.9		.163
Median (range)	46(24-68)		47(26-66)		
Religion					.522
Buddhist	60	98.4	60	95.2	
Christian	0	0	1	1.6	
Moslem	1	1.6	2	3.2	
Marital status					.676
Single	12	19.7	10	15.9	
Married	33	54.1	39	61.9	
Divorced	16	26.2	14	22.2	
Education					.368
Primary school	11	18.0	13	20.6	
Secondary school	42	68.9	41	65.1	
Bachelor degree	5	8.2	9	14.3	
Higher than bachelor	3	5.9	0	0	
Occupation					.485
Employee	12	19.7	12	19.1	
Government officer	38	62.3	40	63.5	
Business	5	8.2	4	6.3	
Agricultures	1	1.6	5	7.9	
Unemployed	5	8.2	2	3.2	
Income (Baht/Mo)					.529
< 10,000	23	37.7	20	31.7	
10,000-20,000	27	44.3	27	42.9	
20,001-30,000	5	8.2	10	15.9	
30,001-40,000	2	3.3	4	6.3	
>40,000	4	6.6	2	3.2	

According to Table 2, the PMK model group and usual care group started drinking at the same age of 18.5 years (SD=4.2). The patients in both groups also similarly had drunk alcohol for 26 and 28 years respectively. They also spent an average of 4,500 Baht per month (use Median value) on drinking. The two groups were found to drink the same types of alcoholic beverages, namely spirit (37.1%) and white spirit (31.5%).

With respect to the amount of drinking, the PMK model group had an average of 159 grams per day or 15.9 standard drinks (10 grams equal to one standard drink), whereas the usual care group consumed an average of 160 grams per day or 16 standard drinks. Thus, the patients in both groups exceeded the average drinking amount per week of 14 standard drinks for males. The majority of the patients were found to drink almost daily or more often than four days per week (86.9% and 76.2%).

When asked in terms of their need to drink, the subjects said they had to drink every day or were addicted. The AUDIT scores were as high as 27.2 and 28.7 respectively, indicating alcohol dependence. In terms of their drinking behavior, the majority drank alone (75.8%) at home (79%). Slightly over half of the respondents started drinking in the morning before work (50.8%), followed by after work (23.4%) and in the evening (20.2%). Surprisingly, they did not need any special occasion to drink (91.1%). They could simply drink anytime. Also, a substantial percentage of the subjects never tried to stop drinking (34.7%), whereas the majority had tried to stop but returned to drinking (65.3%). In almost all respects, the descriptive statistics pertaining to number, percentage, mean score, and standard deviation were not different between the two groups.

Table 2 Baseline of behavioral drinking of PMK model and usual care groups

Variables	PMK model (n=61)		Usual care (n= 63)		p-value
	N	%	n	%	
Age of first drinking (year)(M±SD)	18.6±4.0		18.4±4.4		.881
Duration of drinking(year)(M±SD)	26.2±9.6		28.8±9.3		.122
Pay for alcohol (Baht/Mo) (Median)	4496.7		4382		.887
Type of Alcohol					.999
Beer	10	16.4	10	15.8	
Spirit	23	37.7	23	36.5	
White spirit	18	29.5	21	33.3	
Others**	10	16.4	9	14.4	
Quantity of drinking(gm)(M±SD)	159±79.9		160±105.5		.946
Frequency of drinking					.234
Daily drinking	4	6.6	12	19.0	
Almost daily drinking	53	86.9	48	76.2	
3-4 days/wk	3	4.9	1	1.6	
2-3 days/wk	1	1.6	2	3.2	
AUDIT Score (M±SD)	27.2±4.3		28.7±4.6		.068
Quit-drinking					.382
Never	22	36.1	21	33.3	
Relapse	39	63.9	42	66.7	

**Other = Brandy, Medicinal alcohol, Chaina alcohol

Table 2 Baseline of behavioral drinking of PMK model and usual care groups (Cont.)

Variables	PMK model (n=61)		Usual care (n= 63)		p-value
	N	%	n	%	
Place					.246
at home	48	78.7	50	79.4	
Friends' home	3	4.8	5	7.9	
Workplace	4	6.6	1	1.6	
Restaurant	2	3.3	6	9.5	
Others	4	6.6	1	1.6	
Who drink with					.492
Alone	48	78.7	45	71.4	
With friends	13	21.3	18	28.6	
Time					.155
Morning	28	45.9	35	55.6	
Before lunch	4	6.6	0	0	
After work	17	27.9	12	19.0	
Diner	10	16.4	15	23.8	
Others	2	3.2	1	1.6	
Opportunity					.356
Socialize	0	0	2	3.2	
All time	56	91.8	57	90.5	
Serious	5	8.2	4	6.3	
Place to buy					.284
Bodega	1	1.6	2	3.2	
Grocery/super market	57	93.4	53	84.1	
Restaurant	3	5.0	8	12.7	

4.1.1.2 The Average of Abstainers and Frequency of Drinking

As displayed in Table 3 and 4 the amount of abstainers and frequency of drinking who completed all follow-up between PMK model and usual care groups, the chi-square test analysis revealed that there was no significant difference between PMK model and usual care groups on abstain from alcohol consumption at one-month follow-up. However, there were significant differences were seen at 3-months and 6-months. When comparing the number and percentage of frequency of drinking between PMK model and usual care groups, the chi-square test analysis revealed that there were no significant differences on frequency of drinking at baseline and 1, 3, and 6-month follow-ups (p-value > .05)

In the total amount of the abstainers in a typical month on average, the PMK model group reported that in the 1-month follow-up over half of them increased when compare with baseline data. 3-month and 6-month follow-up had a few decreased when compare with the 1-month follow-up. In contrast, the usual care group total abstainers in a typical month decreased at all follow-up intervals.

Table 3 Comparing number (n) and percentage (%) of abstainers between PMK model and usual care groups at 1-month, 3-month, and 6-month

Variables	PMK model n (%)	Usual care n (%)	Chi-square test
1-month			.169
Drinker	21(34.4)	28(44.4)	
Nondrinker	40(65.6)	35(55.6)	
Total(124)	61(100)	63(100)	
3-month			.036*
Drinker	26(42.6)	38(60.3)	
Nondrinker	35(57.4)	25(39.7)	
Total(124)	61(100)	63(100)	
6-month			.000**
Drinker	23(37.7)	45(73.0)	
Nondrinker	38(62.3)	18(27.0)	
Total(124)	61(100)	63(100)	

* p-value < .05,   ** p-value < .01

Table 4 Comparing number (n) and percentage (%) of frequency of drinking between PMK model and usual care group at baseline and completed follow-ups

Variables	PMK model n (%)	Usual care n (%)	Chi-square test
Baseline			.234
Daily	17(27.9)	16(25.4)	
Almost daily	36(59.0)	32(50.8)	
3-4 days/wk	8(13.1)	15(23.8)	
Total(124)	61(100)	63(100)	
1-month			.727
Daily	7(33.3)	9(32.1)	
Almost daily	7(33.3)	12(42.9)	
3-4 days/wk	7(33.3)	7(25.0)	
Total(49)	21(42.9)	28(57.1)	
3-month			.072
Daily	12(46.2)	16(42.1)	
Almost daily	4(15.4)	12(31.6)	
3-4 days/wk	10(38.5)	10(26.3)	
Total(64)	26(40.6)	38(59.4)	
6-month			.534
Daily	13(59.1)	26(56.5)	
Almost daily	4(13.6)	11(26.1)	
3-4 days/wk	6(27.3)	8(17.4)	
Total(68)	23(32.4)	45(67.6)	

Table 5 Comparing means (M) and standard deviation (SD) of abstinent days of PMK model and usual care group at 1-month, 3-month, and 6-month

Variables	M±SD	M±SD	M±SD
	1-month	3-month	6-month
Abstinent days			
PMK model(n=61)	21.8±12.1	62.7±36.9*	119.4±71.9**
Usual care(n=63)	19.8±13.4	48.3±38.4	76.8±71.1
Total (n=124)	20.8±17.8	55.4±38.2	97.0±74.4

*p-value < .05   **p-value < .01

According to Table 5, when comparing the average number of days without alcohol consumption (abstinent days) the PMK model group and the usual care group at 1, 3, and 6-months after the completion of the program, the independent t-test indicated that the average number of abstinent days during which two groups did not consume any alcohol were not different at 1-month (21.8 vs.19.8). At 3-month and 6-month the PMK model group found to abstinent days more frequently than the usual care group (62.7 vs. 48.3, and 119.4 vs. 76.8, respectively).

4.1.1.3 The Average of Alcohol Consumption

Table 6 displayed comparisons mean and standard deviation of alcohol consumption between the PMK model and the usual care groups. The t-test analysis revealed that there were no significant differences between the PMK model and the usual care groups on reducing alcohol consumption at baseline and 1-month follow-up, but significant differences were shown at 3 and 6-month (39.9±63.0 vs. 69.7±87.4, 38.2±67.1 vs. 99.5±97.4, respectively). From baseline through 6-months the amount of alcohol drinking reduced 75% PMK model group and 38% usual care group.

Table 6 Comparing means (M) and standard deviation (SD) of alcohol consumption between PMK model and usual care groups at baseline and completed follow-ups

Variables	M±SD	M±SD	M±SD	M±SD
	Baseline	1-month	3-month	6-month
Quantity of drinking (gm)				
PMK model(n=61)	159.0±79.9	32.8±55.9	39.9±63.0*	38.2±67.1**
Usual care(n=63)	160.2±105.5	53.7±89.3	69.7±87.4	99.5±97.4
Total (n=124)	159.6±93.4	43.4±75.2	55.1±77.5	69.3±88.9

*p-value <.05   **p-value <.01

4.1.1.4 The Average of Readiness to Change and Self-efficacy

Table 7 compares the PMK model and the usual care groups in terms of their readiness to change at baseline and during follow-ups period at 1, 3, and 6-month after the completion of the program. Based on the analysis using the independent sample test, the patients in the PMK model and those in the usual care group have more readiness to change their drinking behavior than those in the usual care group at 1, 3, and 6-months after the completion of the program, at p-value < .05 (10.2 vs. 9.5, 10.1 vs. 9.3, and 10.0 vs. 9.2, respectively).

With respect to the self-efficacy to stop drinking, the PMK model and the usual care groups did not differ at baseline when they were in positive or negative situation (85.5 vs. 78.1). However, at 3 and 6-month, the former was significantly better than the usual care group in all the three situations at p-value < .05 and p-value < .01 (81.6 vs. 72.4, and 84.3 vs. 66.0, respectively).

Table 7 Comparing means (M) and standard deviation (SD) of readiness to change and self-efficacy between PMK model and usual care group at baseline and completed follow-ups

Variables	M±SD	M±SD	M±SD	M±SD
	Baseline	1-month	3-month	6-month
Readiness to change				
PMK model(n=61)	10.3±2.1	10.2±1.6*	10.1±1.9*	10.0±1.9*
Usual care(n=63)	9.9±1.9	9.5±1.8	9.3±2.0	9.2±2.3
Self-efficacy				
-Positive situation				
PMK model(n=61)	25.4±7.3	25.6±7.4	24.3±8.3*	24.9±8.2**
Usual care (n=63)	23.2±7.9	24.9±9.1	22.9±8.4	19.1±9.2
-Negative situation				
PMK model(n=61)	30.1±8.9	29.9±8.9	28.5±10.0	29.5±9.5**
Usual care (n=63)	28.4±8.9	27.6±10.1	26.1±10.7	23.5±10.7
-Craving				
PMK model(n=61)	30.5±8.5	30.0±8.9	28.8±9.8	29.8±9.5**
Usual care(n=63)	28.9±8.9	27.6±9.9	25.4±10.9	23.4±11.1
Total self-efficacy				
PMK model(n=61)	85.9±24.1	85.5±24.7	81.6±27.8*	84.3±26.9**
Usual care(n=63)	80.6±24.9	78.1±28.5	72.4±30.3	66.0±30.6
Total(n=124)	83.2±24.6	81.7±26.9	76.9±29.3	75.0±30.1

*p-value < .05   **p-value < .01

4.1.1.5 The Average of Quality of life

Table 8 compares the PMK model and the usual care groups in terms of quality of life in five characteristics: physical health, psychological well-being, social relationship, environment, and overall quality of life at baseline and at 1-month, 3-month, and 6-month after the completion of the program. The independent sample test

demonstrated that the PMK model and the usual care groups did not differ at baseline and at 1-month and 3-month after the program. Differences between the two groups were identified after 6-month. When each characteristic was further analyzed, it was found that their environment did not change throughout the follow-up period. However, the PMK model group showed improvements in terms of their psychological well-being, physical health, social relationship, and overall quality of life (24.1 vs. 21.9, 20.2 vs. 18.3, 10.2 vs. 9.2, and 88.0 vs. 80.7, respectively).

Table 8 Comparing means (M) and standard deviation (SD) of quality of life of PMK model and usual care group at baseline and completed follow-ups

Variables	M±SD	M±SD	M±SD	M±SD
	Baseline	1-month	3-month	6-month
Quality of life				
-Physiological				
PMK model(n=61)	20.9±3.9	23.3±4.1	23.5±4.0	24.1±3.8**
Usual care(n=63)	21.1±4.3	23.7±4.4	23.4±4.8	21.9±4.5
-Psychological				
PMK model(n=61)	17.1±4.4	19.9±4.7	19.8±4.7	20.2±4.3*
Usual care(n=63)	17.8±4.3	20.6±4.2	19.7±4.7	18.3±4.5
-Social				
PMK model(n=61)	9.5±2.2	10.2±2.0	10.1±2.2	10.2±1.9**
Usual care(n=63)	9.8±2.0	9.8±1.5	9.8±2.0	9.2±1.9
-Environmental				
PMK model(n=61)	25.6±4.2	26.7±4.9	26.9±5.4	26.9±5.1
Usual care(n=63)	26.0±4.7	27.7±3.6	27.1±4.8	25.9±4.5
Total quality of life				
PMK model(n=61)	78.1±13.0	87.1±14.9	87.4±15.8	88.0±14.8**
Usual care(n=63)	79.6±13.8	78.8±13.4	85.9±16.1	80.7±14.4
Total (n=124)	78.8±13.4	88.1±13.5	86.6±15.9	84.3±15.0

*p-value < .05   **p-value < .01

4.1.2 Data Analyses and Hypothesis Testing

The assumptions for testing were examined using the repeated measure general linear model. The data had to be randomized and normally distributed. The skews and kurtosis were also considered together with sphericity tests with the requirement that there had to be no missing data. The Chi-square approximation results were found to be lower than .05. Thus, the results from the multivariate approach were used. This was important to the data interpretation since it involved the within-subjects effects, where a popular statistic was called Wilks' lambda. As for the homogeneity of variance-covariance matrices, the Box's M test showed no statistical significance, indicating that there were no differences in terms of homogeneity of variance-covariance in each group. Therefore, the present research passed the preliminary criteria, and the hypothesis testing was further carried out.

4.1.2.1 Hypothesis Test of Alcohol Consumption

According to table 9, the results from the Wilks' lambda test. It was found that the p-value was equal to .000, meaning that the average quantities of drinking during the three follow-ups after the completion of the program were dissimilar within each group (within-subjects effects). Figure 6 was also considered in the analysis. When the average quantities of drinking for the PMK model and the usual care groups were compared at baseline and 1-month, no differences were identified. However, at 3 and 6-month, the two groups were statistically different (p-value = .032, and .000, respectively). Particularly, the patients in the PMK model group were found to have less alcohol consumption than those in the usual care group. Furthermore, the average amounts of drinking were found to change when time went by. The results from the between-subjects effects test were significantly different (df = 1, mean square = 24762.323, F = 7.327, p-value = .008).

Figure 6 displayed graph comparing alcohol consumption between baseline and after the follow-up at all interval in the two groups. The PMK model's line shows a large number of decreases in alcohol consumption at 1-month from baseline and a slight increase at 3 and 6-month. At the same time, the usual care's line shows the

same outcome at 1-month. However, after the 3 and 6-month the line increased more than that of the PMK model group.

Table 9 Comparing alcohol consumption among alcohol dependence completed follow-up in both groups (PMK model and usual care) by Repeated Measure General Linear Model

Effect		Value	Hypothesis F	df	Error df	p-value
Quantity						
In a typical month*	Wilks' lambda	.446	49.603[a]	3	120	.000
Intervention						

a. Exact statistic

Quantity of drinking

Time	Group		Mean Difference	Std. Error	p-value	95% CI Lower Bound	Upper Bound
Baseline	PMK model	Usual care	-1.154	16.853	.946	-34.516	32.208
1-month	PMK model	Usual care	-20.838	13.430	.123	-47.423	5.747
3-month	PMK model	Usual care	-29.768*	13.720	.032	-56.929	-2.608
6-month	PMK model	Usual care	-61.306*	15.061	.000	-91.120	-31.492

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

*. The mean difference is significant at the .05 level.

Estimated Marginal Means of Quantity of drinking
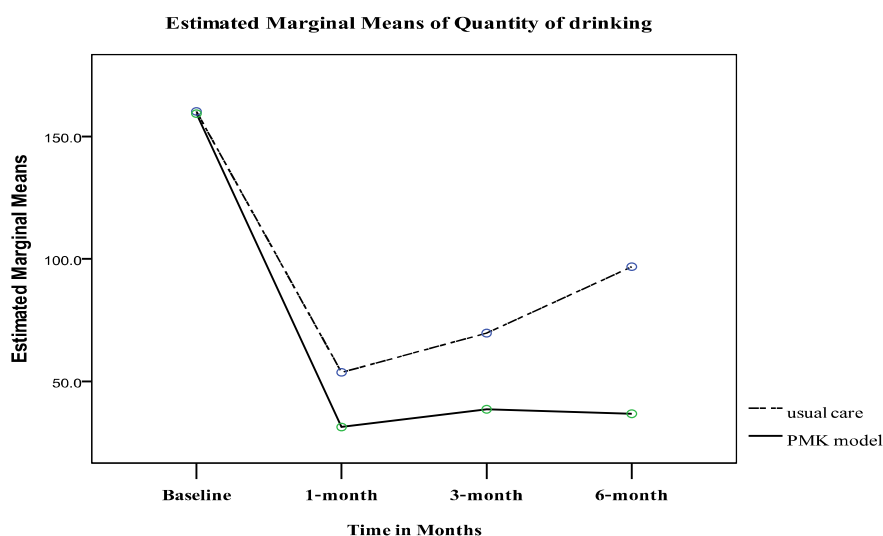
Figure 6 Graph display mean of quantity of drinking at baseline and completed
follow-ups

Table 10 presents the results from the Wilks' lamba test. The p-value was at
.004. Together with the data in Figure 7, this indicated that the average abstinent days
at the three follow-ups within each group differed for at least one pair (within-subjects
effects). At 1-month follow-up, the PMK model and the usual care groups did not
differ in terms of the average abstinent days. On the other hand, the follow-up at 3 and
6-month illustrated that the figures for both group were statistically different (p-value
= .035 and .002, respectively). Specifically, the patients in the PMK model were
found to abstain from drinking more frequently than those in the usual care group.
The abstinent days also changed across the time of the study. The results from the
between-subjects effects test differed significantly (df = 1, mean square = 11311.108,
F = 7.518, p-value = .007). Furthermore, the survival rate (Kaplan-Meier) and Figure
8 revealed that at 6-month follow-up the survival rate for the PMK model group was
47.4, whereas that for the usual care group was 20.6. The survival rate in both group
were significant different (p-value = .002).

Table10 Comparing abstinent days among alcohol dependence completed follow-ups in both groups (PMK model and usual care) by Repeated Measure General Linear Model

Effect	Value	F	Hypothesis df	Error df	p-value
Abstinent days in a typical month* Wilks' lambda Intervention	.893	4.742[a]	3	119	.004

a. Exact statistic

Abstinent days

						95% CI	
Time	Group		Mean Difference	Std. Error	p-value	Lower Bound	Upper Bound
1-month	PMK model	Usual care	1.947	2.298	.399	-2.603	6.496
3-month	PMK model	Usual care	14.436*	6.773	.035	1.027	27.844
6-month	PMK model	Usual care	40.930*	12.893	.002	15.407	66.453

Based on estimated marginal means
a. Adjustment for multiple comparisons: Bonferroni.
*. The mean difference is significant at the .05 level.
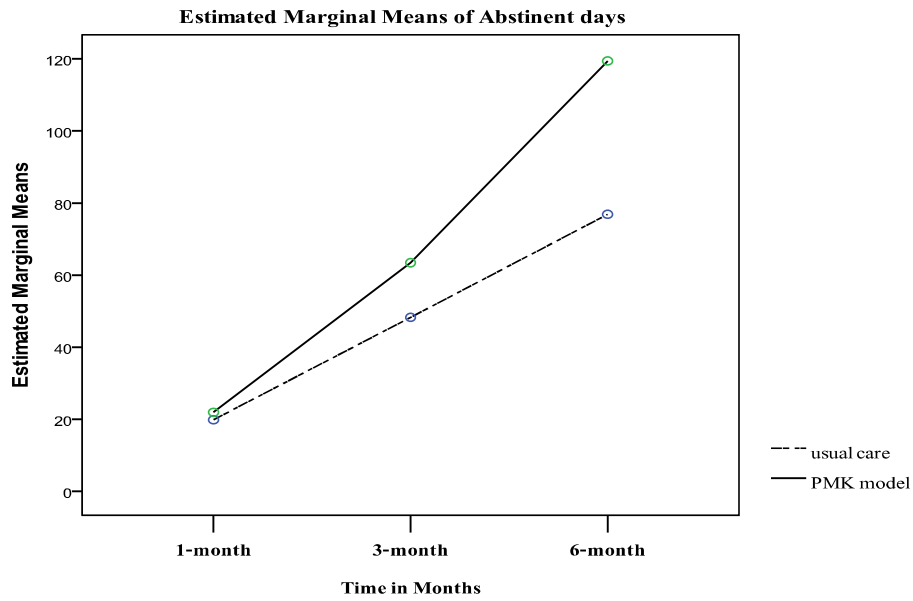
Figure 7 Graph display mean of abstinent days at follow-up 1, 3 and 6 months
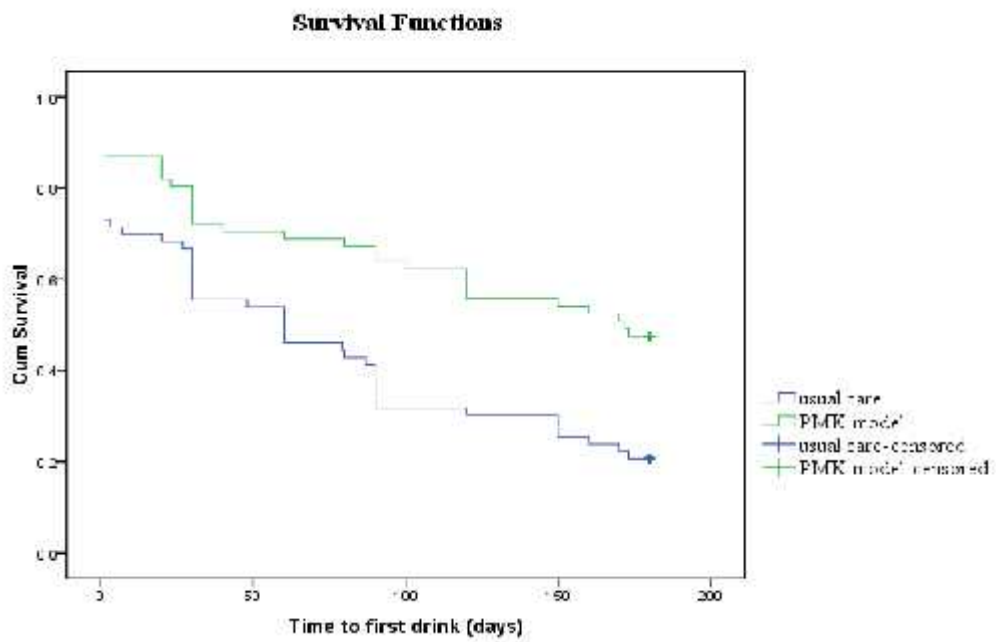
Figure 8 Graph display survival rate of PMK model and usual care patients
completed 6 months follow-up

4.1.2.2 Hypothesis Test of Readiness to Change

Table 11 shows that the Wilks' lambda was found at the p-value = .744, indicating that the average of the readiness to change of alcohol-dependent patients within group (within-subjects. effects) at baseline and completed follow-up did not differ within group, which is considered to be in conjunction with figure 9. Comparison in both groups, the PMK model and the usual care at baseline and 1, 3, and 6-month showed that changes in drinking behavior was significantly different (p-value = .022, .025, and .046, respectively). Moreover, the averages of readiness to change also change across the time of the study. Specifically, the patients in the PMK model were found to change their drinking behavior more than those in the usual care. The readiness to change also changed across the time of the study. The results from the between subjects test differed significantly (between-subjects effects). (df = 1, Mean Square = 13.627, F = 5.367, p-value = .022).

Table11 Comparing readiness to change among alcohol dependence completed follow-up in both groups (PMK model and usual care) by Repeated Measure General Linear Model

Effect		Value	F	Hypothesis df	Error df	p-value
Readiness In a typical month* Intervention	Wilks' Lambda	.990	.413[a]	3	120	.744

a. Exact statistic

Readiness to change

Time	Group		Mean Difference	Std. Error	p-value	95% C I Lower Bound	Upper Bound
Baseline	PMK model	Usual care	.383	.355	.283	-.319	1.085
1-month	PMK model	Usual care	.709*	.307	.022	.102	1.317
3-month	PMK model	Usual care	.800*	.351	.025	.105	1.496
6-month	PMK model	Usual care	.760*	.377	.046	.014	1.506

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

*. The mean difference is significant at the .05 level.
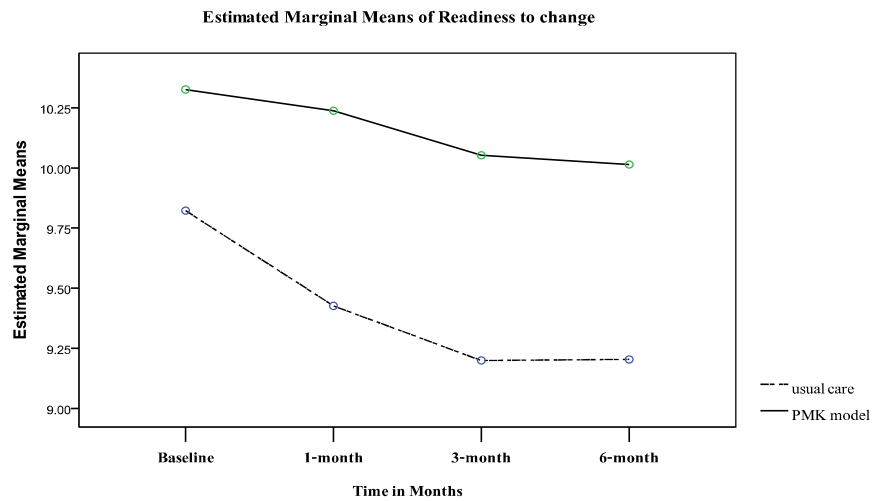
Figure 9 Graph display mean of readiness to change at baseline and completed
follow-up

4.1.2.3 Hypothesis Test of Self-efficacy

Table 12 presents the results from the Wilks' lambda test. The p-value was at .013. Together with the data in Figure 10, this indicated that the average self-efficacy at the three follow-ups within each group differed for at least one pair (within-subjects effects). At 1 and 3-month follow-up, the PMK model group and the usual care group did not differ in terms of the average self-efficacy. On the other hand, the follow-up at 6-month illustrated that the figures for both group were statistically different (p-value = .001). Specifically, the patients in the PMK program were found to be more self-efficacy than those in the usual care group. The self-efficacy also changed across the time of the study. The results from the between-subjects effects test differed significantly (df =1, Mean Square = 3147.729, F = 7.165, p-value =.008).

Table12 Comparing self-efficacy among alcohol dependence completed follow-up in both groups (PMK model and usual care) by Repeated Measure General Linear Model

| | | | | Hypothesis | | |
Effect		Value	F	df	Error df	p-value
Self-efficacy in typical month * Intervention	Wilks' lambda	.914	3.743[a]	3	120	.013

a. Exact statistic

Self-efficacy

| | | | | | 95% C I | |
Time	Group	Mean Difference	Std. Error	p-value	Lower Bound	Upper Bound
Baseline	PMK model Usual care	5.362	4.403	.226	-3.355	14.079
1-month	PMK model Usual care	7.445	4.796	.123	-2.050	16.940
3-month	PMK model Usual care	9.193	5.220	.081	-1.141	19.528
6-month	PMK model Usual care	18.311*	5.169	.001	8.079	28.544

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

*. The mean difference is significant at the .05 level.
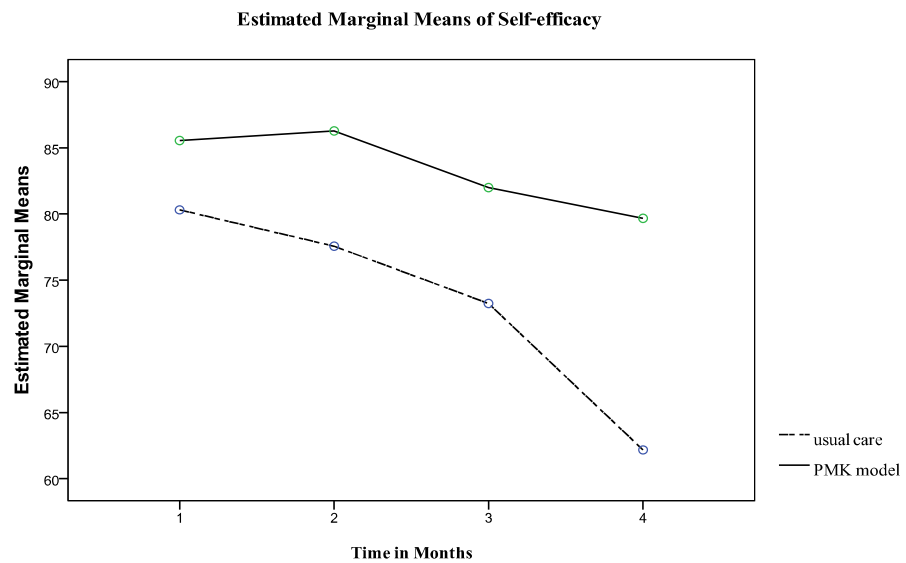
Figure 10 Graph display mean of self-efficacy at baseline and completed follow-up

4.1.2.4 Hypothesis Test of Quality of life

Table 13 demonstrates the results from the Wilks' lamda test. The p-value stood at .005. When considered in conjunction with Figure 11, this showed that the average scores pertaining to the quality of life for the subjects in the same group at all the 3 follow-ups were different (within-subjects effects). When the quality of life of the subjects in the treatment group and the control group was compared at baseline and 1 and 3-month after the completion of the program, no differences were found. In contrast, at 6-month, the PMK model group was found to have a statistically better quality of life than the usual care group (p-value = .006), although the results from the between-subjects effects test suggested that the two groups differed only moderately. However, the quality of life of the subjects in the PMK model group changed significantly over time (df = 1, mean square = 78.194, F = .956, p-value = .442).

Table13 Comparing quality of life among alcohol dependence completed follow-up in both groups (PMK model and usual care) by Repeated Measure General Linear Model

Effect		Value	F	Hypothesis df	Error df	p-value
QOL In a typical month* Intervention	Wilks' Lambda	.898	4.524[a]	3	120	.005

a. Exact statistic

Quality of life

Time	Group		Mean Difference	Std. Error	p-value	95% CI Lower Bound	Upper Bound
Baseline	PMK model	Usual care	-1.456	2.415	.548	-6.236	3.324
1-month	PMK model	Usual care	-1.044	2.554	.683	-6.101	4.012
3-month	PMK model	Usual care	1.537	2.863	.592	-4.130	7.204
6-month	PMK model	Usual care	7.317*	2.630	.006	2.111	12.524

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

*. The mean difference is significant at the .05 level.
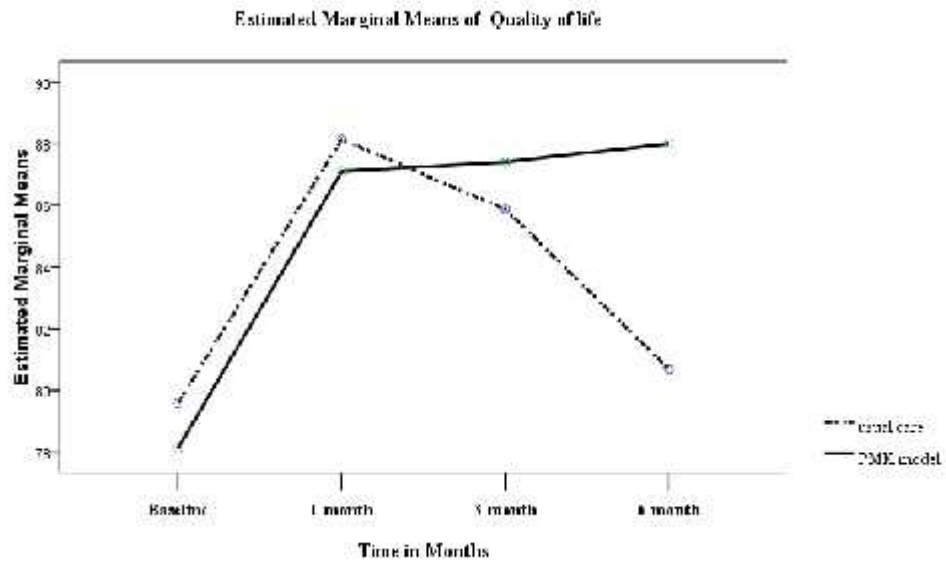
Figure 11 Graph display mean quality of life of PMK model and usual care patients at baseline and completed follow-up

4.2 PHASE II DEVELOPMENT ALCOHOL DEPENDENCE OUTPATIENT REHABILITATION PROGRAM

The effectiveness of the PMK model was evaluated using four sets of survey questionnaires: 1) a questionnaire to collect personal data including drinking behavior, 2) a questionnaire to assess the patients' ability to quit drinking, 3) a questionnaire to assess their readiness to change their drinking behavior, and 4) a questionnaire to assess quality of life.

The data relating to alcohol consumption from the questionnaires were collected before and after the program. The follow-up periods were at 1, 3, and 6 months. It was found that the patients joining the PMK model recovered significantly better than those in the usual care group at the third and sixth month (p-value < .05). The findings indicated that the patients in the PMK model group could reduce or stop drinking to a greater extent than those in the usual care group (75% was reducing, 62% was stopping drinking and 47% was survival rate). In addition, at month 6, the treatment group had a moderately better quality of life compared with the usual care group. Also, those in the treatment group were found to be ready to abstain from drinking and perceive their ability to do so during a pleasant occasion such as a party or in a negative situation such as when they were angry, in conflict, or stressed. Even in terms of their desire for drinking, the findings showed that the patients in the PMK program did significantly better in terms of controlling themselves throughout the follow-up periods.

The results of the study were also used to analyze the strengths and weaknesses of the PMK model in order to develop an alcohol-dependent patient rehabilitation program for outpatients.

The analysis revealed that the model was distinct in terms of the application of group processes to enhance learning and motivation to change oneself. Its strengths also lied in the emphasis on faith, beliefs, good deeds, mindfulness and wisdom, teamwork, and interdisciplinary medical approaches integrating the collaboration of psychiatrists, psychologists, social workers, psychiatric nurse practitioners, and non-

licensed practical nurses. This inpatient rehabilitation program also required patients to stay at the hospital throughout 28 days, thus resulting in a low dropout rate (1.7%).

The results from the research indicated that the PMK model could significantly help the patients to reduce or stop drinking at p-value < .05 at the follow-ups at months 3 and 6. Their quality of life also improved. During the program, several effective activities were carried out such as the MI and the MET as well as the meetings between the therapists held twice per month to improve the program and solve problems that arose.

In terms of weaknesses, the program required the patients to stay at the hospital for a relatively long period of time. Specifically they had to spend about 45-60 days for the program and recovery period. In addition, the recovery course was comprised of up to 40 lessons, requiring a great number of therapists and group facilitators. As a result, the program did not seem practical for hospitals with a limited number of specialized therapists, beds, or buildings for psychiatric patients and alcohol addicts.

The researcher is a nurse at a general hospital with a psychiatric unit and a drug addiction rehabilitation unit, who opened a ward with 10 beds to accept psychiatric patients and drug addicts in 2003. The majority of the patients were alcohol addicts. However, due to the limited number of beds as well as medical professionals at that time, the PMK model could not be applied. The situation was exacerbated by the fact that a 28-day hospital stay would require a great deal of resources even with the present capacity of the hospital. Therefore, she was keen on developing a program for outpatients based on the PMK model for inpatients using a consistent name, the alcohol dependence outpatient rehabilitation program or the new model for short.

4.2.1 The Alcohol Dependence Outpatient Rehabilitation Program

The alcohol dependence outpatient rehabilitation program (abbreviated as the new model) for alcohol-dependent patients was adapted from the PMK intensive

inpatient rehabilitation program (abbreviated as the PMK model) for inpatients, or the 28-day model.

A program for patients after completing alcohol detoxification, the new model focuses on the thinking process and behavioral change, which includes educating and rehabilitating addicts to enhance their motivation as appropriate for their stage of change. The program integrates Cognitive Behavioral Therapy (CBT), Motivational Interviewing (MI), the Buddhist Twelve Steps, and family education involving a person's family in planning the rehabilitation process.

4.2.2 Objectives

1. To enable patients to realize problems resulting from drinking.
2. To make patients motivated and ready for behavioral change in the rehabilitation program.
3. To enable patients to change their behavior and beliefs about drinking as well as develop skills to prevent relapse effectively.
4. To help patients to receive support from their family and the people they have a close relationship with to prevent relapse.
5. To help patients develop behavior preventing reverting to drinking.

4.2.3 Qualifications of the participants

1. Diagnosed as being dependent on alcohol using DSM-IV diagnostic criteria.
2. Scoring > 19 on the Alcohol Use Disorder Identification Test (AUDIT).
3. Having completely received alcohol detoxification.
4. Ability to read and write Thai.
5. Willing to participate in the rehabilitation program until it ends (12 sessions or 3 months).

4.2.4 Qualifications of the rehabilitation staff

1. Professional nurses/psychologists/social workers with more than two years of work experience.
2. Having passed a basic consultation skills training.

3. Having been trained in giving advice and rehabilitation to motivate patients with alcohol drinking problems based on Motivational Interviewing and Motivational Enhancement Theory (MI and MET).

4.2.5 Conceptual of the New Model

Reviewing the literature related to alcohol addict rehabilitation both in Thailand and abroad such as MI, CBT, the Buddhist Twelve Steps, and family education, the present study integrates the following concepts.

Motivational Interviewing (MI). This is a psychological rehabilitation approach used to motivate addicts to change their behavior according to their stage of change. Originated by Miller and Rollnick, MI adapts Prochaska and DiClemente's Stage of Change Theory, which has been shown to effectively motivate individuals to change their behavior to solve several types of physical health problems such as alcohol or drug addition, obesity, and exercise. The application of MI in patients diagnosed as alcohol addicts has been effective in motivating and helping them to change their behavior to desirable one permanently. However, in the beginning stage, patients' behavior may not be stable. Thus, the rehabilitation staff has to react to the patients and their relatives in a suitable manner. The staff should also use a patient-centered approach in giving consultation to help them to learn and know about themselves. In addition, the patients should also be stimulated to say motivating statements for changing their behavior and to stay on until the completion of a rehabilitation program.

Cognitive Behavioral Therapy (CBT). This is short-term psychological rehabilitation emphasizing the treatment of some psychological and behavioral problems resulting from negative thinking or abnormal thinking process. According to this concept, thoughts, emotion, and behavior are interrelated. Therefore, patients' thoughts, beliefs, and perceptions of their drinking are made congruent to reality and positivity to themselves. Meanwhile, their problematic external behavior is also adjusted in order that they learn new skills to deal with situations likely to cause reverting to drinking. The process of learning involves analyzing drinking-related beliefs, benefits and dangers of drinking, repeated practice of how to deal with problems, as well as keeping a diary to enable patients to understand and see unreal

thoughts, beliefs, and perceptions of their drinking that lead to chronic alcohol consumption.

The Buddhist Twelve Steps. This concept was developed by Colonel Pichai Sangchanchai, who adapted the twelve steps, used by the Alcoholics Anonymous group, with Buddhist principles. Such principles emphasize faith, spirituality, mindfulness, and wisdom, as well as the higher power, i.e. the Triple Gems (Buddha, Dharma, and Sangha). The real goal of Buddhism is developing oneself to be mindfulness and wisdom, thus seeing one's problems as they are and being able to solve them appropriately according to the nature. In addition, one should abstain from bad deeds to find real happiness and peace. Alcohol addicts can rely on these principles of faith, self-value and higher power to solve the problems they are encountering as well as to have a real peaceful and happy life to be able to support themselves and their family.

Family Education. In addition to being one cause of alcohol addiction, family education can also serve to rehabilitate patients. It has been widely accepted by rehabilitation staff and addicts themselves that family plays an important part in effective treatment. For instance, the addicts sympathize with their family members, who are greatly affected by their drinking as well as show concerns and anxiety about their addiction. Therefore, it is effective to involve these influential people in helping, supporting, and caring for patients, as well as in planning the rehabilitation program to strengthen patients and prevent them from relapsing. In the process, family members should be encouraged to build upon a good relationship with positive feelings towards patients and to be understanding of the difficulties patients are encountering during the abstinence process, which support in the critical stage is fundamental for patients.

4.2.6 Structure of the Model

The alcohol dependence outpatient rehabilitation program consists of 12 sessions of activities, each conducted once a week and taking 90-120 minutes. Each activity was either in the form of a group session participated by a facilitator and eight to ten patients using group dynamic to enable learning as well as thought and behavioral change, or in the form of a conjoint session participated by the patients'

family members or the significant others with whom they had a close relationship. These people would support the patients and be involved in planning, collecting data, learning, and playing a part in rehabilitating the patients. The structure of the PMK outpatient program was as follows.

Stage 1: Health Education and Motivational Learning

Concept: To educate and motivate the patients and their family members in abstaining from drinking, getting ready for the process, cooperating and staying on until the completion of the program. This was comprised of the following:

Activity 1:   A conjoint session on building motivation for alcohol abstinence

Activity 2:   A conjoint session on planning and cognitive behavioral modification

Activity 3:   A group session on alcohol dependence and progression

Expected results

- A good relationship between the patients and their family members
- Motivation to participate in the sessions of the program until its completion
- Patients' and their family members' knowledge and understanding on alcohol addiction

Stage 2: Recovery Skill Training

Concept: To develop the skills necessary for thought and behavioral change. This was comprised of the following:

Activity 4:   A group session on circuit cues and craving

Activity 5:   A group session on emotional management

Activity 6:   A group session on skill of assertiveness and refusal

Expected results

- The ability to deal with internal and external triggers as well as undesirable emotions
- Skills to refuse and express oneself appropriately.

Stage 3: Good-Self and Value Development

Concept: To let the patients reflect on past wrongful behavior, be aware of them and apologize for what they had done, and are ready to change themselves to live their life with mindfulness and wisdom. This was comprised of the following:

Activity 7:   A group session on alcoholism as a spiritual disease

Activity 8:   A group session on the Buddhist Twelve Steps

Activity 9:   A group session of self-development of Buddhism

Activity 10:   A group session on getting healthy for good health

Expected results

- The patients' and their family members' readiness to change themselves
- The ability to live their life peacefully by conforming to the nature as well as to do good things with mindfulness and wisdom.
- A peaceful mind and having a positive self-based value on the things one had faith in.

Stage 4: Family Support and Relapse Prevention

Concept: To prevent relapse. This was comprised of the following:

Activity 11:   A conjoint session on the roles of family and problems solving

Activity 12:   A conjoint session on relapse prevention

Expected results

- Guidelines to prevent relapse for the patients and their family members.
- Continuous follow-up appointments after the completion of the rehabilitation program.

4.2.7 Contents of the Model

The alcohol dependence outpatient rehabilitation program (the new model) was adapted from the model for inpatients. This program integrates CBT, MI, the Buddhist Twelve Steps, and family education in constructing 12 rehabilitation activities. See below:

Activity 1:   A conjoint session on building motivation for alcohol abstinence

Activity 2:   A conjoint session on planning and cognitive behavioral modification

Activity 3:   A group session on alcohol dependence and progression

Activity 4:   A group session on circuit cues and craving

Activity 5:   A group session on emotional management

Activity 6:   A group session on skill of assertiveness and refusal

Activity 7:   A group session on alcoholism as a spiritual disease

Activity 8:   A group session on the Buddhist Twelve Steps

Activity 9:   A group session of self-development of Buddhist

Activity 10:   A group session on healthy for good health

Activity 11:   A conjoint session on the roles of family and problems solving

Activity 12:   A conjoint session on relapse prevention

4.2.8 Schedule of Activity

1. The new program consisted of 12 sessions of activities, each conduct once a week and taking 90-120 minutes.

2.   Structure in each group therapy is as follow:

    -Following the agenda

    -Mood check

    -Bridge from previous session

-Discussion of current agenda items

-Guided discovery

-Capsule summaries

-Homework assignment

-Feedback in therapy session

3. The patients were appointed to follow and evaluate the effect of treatment at one month per time for a total of 12 months.

4. The new model manual consists of lesson plan, worksheet, knowledge sheet, homework and daily record.

4.3 PHASE III EXPERIMENTATION OF THE NEW MODEL

.   The contents of the new model for outpatients were validated by three experts and trialed at Mae Sot Hospital in Tak Province. This phase appraised the effectiveness of the new model in the treatment and rehabilitation of alcohol-dependent outpatient having attended a program base on the model until its completion and at 3-month after program in terms of the patients' abstinence from drinking, readiness to change their drinking behavior, perception of self-efficacy, and quality of life.

Results of the New Model

The results of the new model were reported in two sections. In section 1, the demographic information of the sample groups and descriptive statistics were presented. Section 2 reports on the results and analyzes the data to test the research hypotheses.

4.3.1 Demographic information and descriptive statistics

4.3.1.1 Demographic Characteristic

According to DSM-IV and AUDIT scores out of the 77 patients who were assessed for eligibility were alcohol dependence. Excluded were 16 patients because of refusal (n=10) and dropout before completing the new program (n=6). Thus, a total of alcohol dependence patients in this phase were 61.

According to Table 14, the new model group and the control group did not differ at baseline using the t-test for continuous variables and the Chi-square test for categorical variables. The mean age of the sample was 45.8 years (29-68 years). The majority of the subjects were Buddhist (100% and 93.5%, respectively). Most were married (68.9%), followed by divorced or separated (19.7%). More than half of them had secondary education, a vocational degree, or a high vocational degree (68.9%). In terms of their work, the majority was employed (36.7% and 25.8%, respectively), followed by agricultures (20.0% and 35.5%, respectively), while the minorities were

unemployed (13.3%). With regards to their income, almost all of the subjects earned 10,000 Baht per month or less (86.7% and 87%, respectively).

Table 14 Baseline characteristics comparing between the new model and control group (Demographic and socioeconomic)

Variables	New model (n=30)		Control (n= 31)		p-value
	N	%	n	%	
Gender -male	30	100	31	100	
Age(year)(M±SD)	45.7±9.1		45.9±9.1		.919
Religion					.157
Buddhist	30	100	29	93.5	
Moslem	0	0	2	6.5	
Marital status					.428
Single	5	16.6	2	6.4	
Married	20	66.8	22	71.9	
Divorced	5	16.6	7	22.6	
Education					.244
Primary school	7	23.4	6	19.4	
Secondary school	22	73.3	20	64.5	
Bachelor degree	1	3.3	5	16.1	
Occupation					.106
Employee	11	36.7	8	25.8	
Government officer	6	20.0	5	16.1	
Business	3	10.0	7	22.6	
Agricultures	6	20.0	11	35.5	
Unemployed	4	13.3	0	0	
Income (Baht/month)					.765
<10,000	26	86.7	27	87.0	
10,000-20,000	3	10.0	2	6.5	
20,001-30,000	1	3.3	2	6.5	

According to Table 15, the new model group and the control group started drinking at the same age of 20 years. The patients in both groups had drunk alcohol for 24 and 27 years respectively. They also spent an average of 3,000 and 3,500 Baht per month on drinking respectively. The types of alcoholic beverages the two groups were found drinking were white spirit (46.7% and 61.3%) and followed by illegal spirit (23.3% and 16.1%).

With respect to the amount of drinking, the new model group had an average of 133 grams per day or 13.3 standard drinks, whereas the control group consumed an average of 166 grams per day or 16 standard drinks. Thus, the patients in both groups exceeded the average drinking amount per week of 14 standard drinks for males. The majority of the patients were found to drink almost every day or more often than four days per week (59.0% and 24.6%).

When asked in terms of their need to drink, the subjects said they had to drink every day or were addicted. The AUDIT scores were as high as 25.9 and 27.8 respectively, which indicated alcohol dependence. In terms of their drinking behavior, the majority drank alone (77%) at home (77%). Slightly over half of the respondents started drinking in the morning before work (47.5%), followed by after work (37.7%) and in the evening (9.8%). Surprisingly, some drinkers did not need any special occasion to drink (85.3%).

Table 15 Comparing number (n) and percentage (%) of history drinking between the new model and control group

Variables	New model (n=30)		Control (n= 31)		p-value
	n	%	n	%	
Age of first drinking (year)(M±SD)	21.1±6.5		19.3±5.4		.306
Duration of drinking (year)(M±SD)	23.8±8.2		26.8±8.8		.127
Pay for alcohol (Baht/Mo)(Median)	3,000		3,600		.147
Type of Alcohol					.467
Beer	3	10.0	4	12.9	
Spirit	6	20.0	3	9.7	
White spirit	14	46.7	19	61.3	
Illegal spirit	7	23.3	5	16.1	
Quantity of drinking (gm)(M±SD)	133 ±73.7		166.5 ±91.2		.122
Frequency of drinking					.755
Daily drinking	4	13.3	6	19.4	
Almost daily drinking	19	63.3	17	54.8	
3-4 days/wk	7	23.4	8	25.8	
AUDIT Score (M±SD)	27.2±4.3		28.7±4.6		.192

Table 15 Comparing number (n) and percentage (%) of history drinking between the new model and control group (Cont.)

Variables	New model (n=30)		Control (n= 31)		p-value
	n	%	n	%	
Place					.070
At home	22	73.3	25	80.6	
Friends' home	2	6.7	2	6.5	
Restaurant	6	20.0	4	12.9	
Who drink with					.393
Alone	22	73.3	25	80.6	
With friends	8	26.7	5	16.2	
Other-Party	0	0	1	3.2	
Time to drink					.333
In the morning	12	40.0	17	54.9	
Before lunch	2	6.7	1	3.2	
After work	14	46.6	9	29.0	
Diner	2	6.7	4	12.9	
Opportunity					.458
Socialize	0	0	1	3.2	
Any time	25	83.3	27	87.1	
Serious	5	16.7	3	9.7	
Place to buy					.135
Liquor store	1	3.3	0	0	
Grocery	29	96.7	28	90.3	
Restaurant-Karaoke	0	0	3	9.7	

4.3.1.2 The Average of Abstainers

Table 16 shows a comparison of numbers and percentages of abstainers between the new model and control groups. The chi-square test analysis revealed that there was no significant difference between the new model and control groups on abstain from alcohol consumption at 1 and 2-month follow-up (p-value > .05). However, significant differences were seen at 3-month p-value < .01).

Table 16 Comparing number (n) and percentage (%) of abstainers between the new model and usual care groups at 1-month, 2-month, and 3-month

Variables	New model n (%)	Control n (%)	p-value
1-month			.363
Drinker	12(40.0)	16(51.6)	
Nondrinker	18(60.0)	15(48.4)	
Total(61)	30(100)	31(100)	
2-month			.906
Drinker	16(53.3)	17(54.8)	
Nondrinker	14(46.7)	14(45.2)	
Total(61)	30(100)	31(100)	
3-month			.007**
Drinker	12(40.0)	23(74.2)	
Nondrinker	18(60.0)	8(25.8)	
Total(61)	30(100)	31(100)	

* p-value < .05,   ** p-value < .01

4.3.1.3 The Average Frequency of Drinking

Table 17 displays a comparison of numbers and percentages of frequency of drinking between the new model group and control group. The chi-square test analysis revealed that there were no significant differences on frequency of drinking at baseline and 1, 2, and 3 months follow-ups. (p-value > .05)

Table 17 Comparing number (n) and percentage (%) of frequency of drinking between the new model and control at baseline and completed follow-ups

Variables	New model n (%)	Control n (%)	p-value
Baseline			.755
Daily	4(13.3)	6(19.4)	
Almost daily	19(63.3)	17(54.8)	
3-4 days/week	7(23.3)	8(25.8)	
1-month			.563
Daily	3(25.0)	3(18.8)	
Almost daily	4(33.3)	8(50.0)	
3-4 days/week	5(41.7)	5(31.2)	
2-month			.428
Daily	5(31.2)	6(35.3)	
Almost daily	4(25.0)	7(41.2)	
3-4 days/week	7(43.8)	4(23.5)	
3-month			.169
Daily	5(41.7)	15(65.2)	
Almost daily	3(25.0)	6(26.1)	
3-4 days/week	4(33.3)	2(8.7)	

4.3.1.4 The Average of Abstinent Days

Table 18 compares the average number of days without alcohol consumption (abstinent days) between the new model group and the control group at 1, 2 and 3 months follow-ups after the completion of the program. The independent sample test indicated that the average number of days during which the two groups did not consume any alcohol were not different at 1, 2, and 3 months (21.1 vs. 19.3, 38.4 vs. 32.4, and 58.8 vs. 43.5, respectively).

Table 18 Comparing mean (M) and standard deviation (SD) of abstinent days between the new model and control at 1, 2, and 3-month

Variables	M±SD	M±SD	M±SD	M±SD
	Baseline	1-month	2-month	3-month
Abstinent days				
New model (n=30)	-	21.1±13.1	38.4±24.7	58.8±33.1
Control(n=31)	-	19.3±13.1	32.8±24.4	43.5±35.8

*p-value <.05   **p-value <.01

4.3.1.5 The Average Alcohol Consumption

Table 19 compares the average drinking amount of the new model group and the control group at baseline as well as after the completion of the program at 1, 2, and 3 months follow-ups. It was founded that the quantity of drinking for the two groups at the first month and 2-month follow-up did not differ significantly (133.2 vs. 166.5 at baseline, 34.3 vs. 63.2 at month 1, and 40.6 vs. 71.2 at month 2, respectively). Differences were identified at 3-month when the quantities of drinking of the treatment group were much lower than those of the control group (27.2 vs. 113.2 at month 3, respectively).

Table 19 Comparing mean (M) and standard deviation (SD) of quantity of drinking between the new model and control at baseline and completed follow-ups

Variables	M±SD	M±SD	M±SD	M±SD
	Baseline	1-month	2-month	3-month
Quantity of drinking				
(gm)				
New model (n=30)	133.1±73.7	34.3±47.9	40.6±51.1	27.2±44.9**
Control(n=31)	166.5±91.2	63.2±105.5	71.2±102.6	113.2±111.2

*p-value <.05   **p-value <.01

4.3.1.6 The Average of Readiness to Change and Self-efficacy

Table 20 compares the new model and the control groups in terms of their readiness to change at baseline and during follow-ups period at 1, 2, and 3 months after the completion of the program. Based on the analysis using the independent sample test, the patients in the new model and those in the control group had more readiness to change towards their drinking behavior than those in the control group at 3 months after the completion of the program, at p-value < .01 (10.2 vs. 8.5).

With respect to the self-efficacy to stop drinking, the new model and the control groups did not differ at baseline, 1, and 2-month when they were either in positive or negative situation. However, at 3-month, the former did significantly better than the control group in all the three situations and overall at p-value < .01 (3.7 vs.2.7, 4.4 vs. 3.4, 4.5 vs. 3.2, and 12.6 vs. 9.2, respectively).

Table 20 Comparing mean (M) and standard deviation (SD) of readiness to change and self-efficacy between the new model and control at baseline and completed follow-ups

Variables	M±SD	M±SD	M±SD	M±SD
	Baseline	1-month	2-month	3-month
Readiness to change				
New model (n=30)	10.2±1.4	9.8±1.2	9.2±1.6	10.2±1.5**
Control(n=31)	9.9±1.4	9.6±1.2	8.7±1.8	8.5±1.8
Self-efficacy				
-Positive situation				
New model (n=30)	4.2±1.1	4.2±1.3	3.8±1.6	3.7±1.1**
Control(n=31)	3.6±1.2	3.9±1.4	3.8±1.5	2.7±1.2
-Negative situation				
New model (n=30)	4.3±1.1	4.3±1.3	3.8±1.5	4.4±1.1**
Control(n=31)	3.8±1.1	4.0±1.4	3.8±1.6	3.4±1.5
-Craving				
New model (n=30)	4.3±1.1	4.2±1.4	3.8±1.6	4.5±1.2**
Control(n=31)	3.9±1.2	3.9±1.4	3.8±1.6	3.2±1.2
Total self-efficacy				
New model(n=30)	12.6±3.3	12.6±3.9	11.4±4.6	12.6±3.4**
Control(n=31)	11.3±3.3	11.9±4.2	11.7±4.6	9.2±4.4

*p-value <.05   **p-value <.01

4.3.1.7 The Average Quality of life

Table 21 compares the new model and the control groups in terms of quality of life in five characteristics: physical health, psychological well-being, social relationship, environment, and overall quality of life at baseline and at 1-month, 2-month, and 3-month after the completion of the program. The independent sample test demonstrated that the new model and the control groups did not differ at baseline and follow-up at 1-month and 2-month after the program. Differences between the two groups were identified after 3-month. When each characteristic was further analyzed, it was found that their social relationship and environment did not change throughout the follow-up period. However, the new model group showed improvements in terms of their psychological well-being, physical health, and overall quality of life (25.3 vs. 21.8, 22.4 vs. 18.1, and 84.8 vs. 76.4, respectively).

Table 21 Comparing mean (M) and standard deviation (SD) of quality of life between the new model and control at baseline and completed follow-ups

Variables	M±SD	M±SD	M±SD	M±SD
	Baseline	1-month	2-month	3-month
Quality of life				
-Physical health				
New model (n=30)	21.7±4.2	23.8±4.4	23.8±3.6	25.4±3.8**
Control(n=31)	21.6±4.4	24.1±4.3	24.5±3.8	21.8±3.8
-Psychological well-being				
New model (n=30)	18.4±4.2	20.9±4.5	20.4±4.2	22.4±3.6**
Control(n=31)	18.3±4.7	21.1±4.1	20.6±4.7	18.1±4.5
-Social relationship				
New model (n=30)	9.8±1.9	10.3±2.3	10.0±2.2	9.6±1.8
Control(n=31)	9.9±1.9	10.1±1.2	10.2±1.9	9.5±1.9
-Environment				
New model (n=31)	26.8±3.2	27.8±4.1	27.4±4.5	27.3±6.8
Control(n=31)	17.1±4.3	28.5±4.1	28.1±4.2	26.9±4.1
Total Quality of life				
New model (n=31)	76.8±9.9	82.8±13.9	81.2±12.9	84.8±12.6*
Control(n=31)	76.9±13.1	83.8±11.1	83.4±12.7	76.4±12.8

*p-value <.05   **p-value <.01

4.3.2 Data analysis and hypothesis testing

4.3.2.1 Hypothesis Test of Alcohol Consumption

Table 22 shows the results from the Sphericity test. It was found that the p-value was equal to .000, meaning that the average quantities of drinking during the three follow-ups after the completion of the program were different within each group (within-subjects effects). Figure 12 was also considered in the analysis. When the average amounts of drinking for the treatment group and the control group were compared at baseline and 1, 2-month no differences were identified. However, at 3-month, the two groups were statistically different (p-value =.000). Specifically, the patients in the new model were found to decrease alcohol consumption more than those in the control group. Furthermore, the average quantities of drinking were found to change when time went by. The results from the between-subjects effects test were significantly different. Tests of between-subjects effects (df= 1, mean square= 30442.279, F= 11.062, p-value = .002)

Table 22 Comparing alcohol consumption among alcohol dependence completed follow-ups in both groups (new model and control) by Repeated Measure General Linear Model

		Type III Sum of Squares	df	Mean Square	F	p-value
Quantity	Sphericity Assumed	397506.127	3	132502.042	23.960	.000

a   Exact statistic

Quantity of drinking

			Mean Difference	Std. Error	p-value	95% CI Lower Bound	95% CI Upper Bound
Baseline	New model	Control	-33.371	21.267	.122	-75.926	9.184
1-month	New model	Control	-28.844	21.092	.177	-71.050	13.362
2-month	New model	Control	-30.551	20.865	.148	-72.301	11.200
3-month	New model	Control	-85.975[*]	21.856	.000	-129.709	-42.241

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

*. The mean difference is significant at the .05 level.
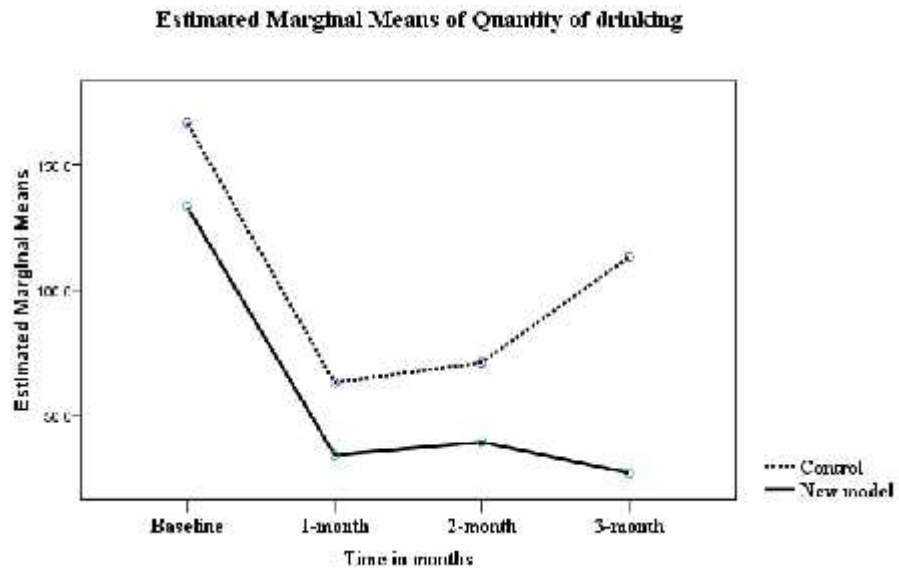
Figure 12 Graph displays mean of quantity of drinking at baseline and completed follow-ups

4.3.2.2 Hypothesis Test of Abstinent Days

Table 23 shows the results from the Wilks' lambda test. It was found that the p-value was equal to .000, meaning that the average abstinent days during the three follow-ups after the completion of the program were dissimilar within each group (within-subjects effects). Figure 13 was also considered in the analysis. When the average abstinent days for the treatment group and the control group were compared at baseline and 1, 2 and 3-month no differences were identified. In addition, the average abstinent days were found to not change when time went by. The results from the between-subjects effects test were not significantly different (df= 1, mean square= 1143.906, F= 2.164, p-value = .147). Furthermore, the survival rate were not significant in both groups (p-value = .087) and Figure 14 revealed that at 3-month follow-up, the rate for the new model group was 46.7%, whereas that for the usual care group was 25.8%.

Table 23 Comparing abstinent days among alcohol dependence completed follow-up
in both groups (new model and control) by Repeated Measure General Linear Model

Effect		Value	F	Hypothe sis df	Error df	p-value
Abstinent days in a typical month* Intervention	Wilks' Lambda	.386	46.128ᵃ	2	58	.000

a. Exact statistic

Abstinent days

						95% CI	
Time	Groups		Mean Difference	Std. Error	p-value	Lower Bound	Upper Bound
1-month	new model	Control	1.744	3.346	.604	-4.952	8.440
2-month	new model	Control	7.226	6.358	.260	-5.496	19.947
3-month	new model	Control	17.016	8.875	.060	-.742	34.775

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

*. The mean difference is significant at the .05level.
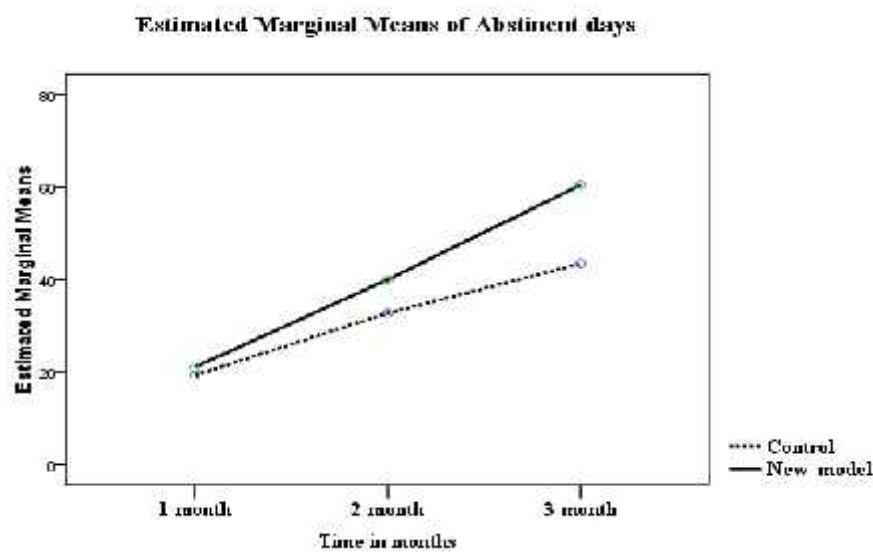
Figure 13 Graph displays mean of abstinent days completed follow-ups

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Figure 14 Graph displays survival rate of the new model and control group completed
        3 months follow-up

4.3.2.3 Hypothesis Test of Readiness to Change

Table 24 shows the results from the Wilks' lambda test. It was found that the
p-value was equal to .001, meaning that the averages of readiness to change during
the 3 follow-ups after the completion of the program were different within each group
(within-subjects effects). Figure 15 was also considered in the analysis. When the
averages of readiness to change for the treatment group and the control group were
compared at baseline, 1 and 2-month, no differences were identified but at 3-month
(p-value = 000). In particular, the patients in the new model were found to prove
readiness to change their drinking behavior compared to those in the control group. In
addition, the averages of readiness to change were found to change when time went
by. The results from the between-subjects effects test were significantly different (df=
1, mean square= 6.140, F= 5.459, p-value = .023).

Table 24 Comparing readiness to change among alcohol dependence completed follow-up in both groups (new model and control) by Repeated Measure General Linear Model

Effect		Value	F	Hypothesis df	Error df	p-value
Readiness to change in a typical month* Intervention	Wilks' Lambda	.745	6.494[a]	3	57	.001

a. Exact statistic

Readiness to change

			Mean Difference	Std. Error	p-value	95% CI	
Time	Groups					Lower Bound	Upper Bound
Baseline	new model	Control	.236	.364	.519	-.492	.964
1-month	new model	Control	.167	.301	.581	-.436	.770
2-month	new model	Control	.513	.449	.258	-.386	1.412
3-month	new model	Control	1.622*	.419	.000	.785	2.460

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

*. The mean difference is significant at the .05 level.
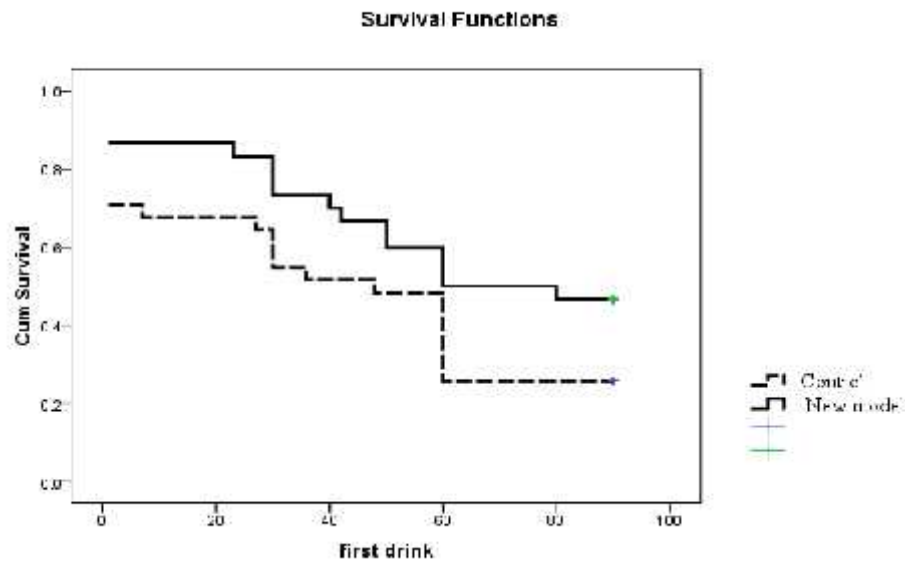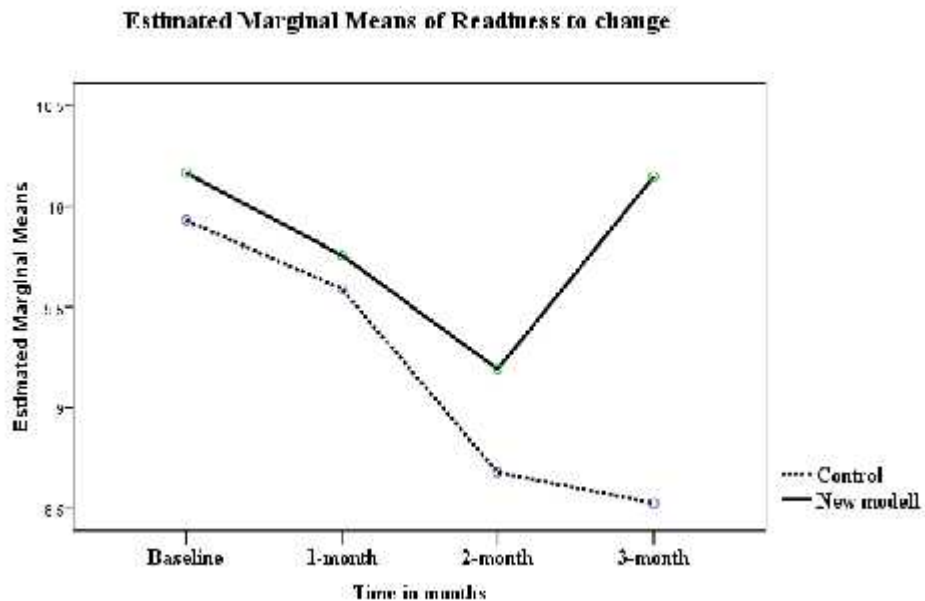
Figure 15 Graph displays mean of readiness to change at baseline and completed
follow-up

4.3.2.4 Hypothesis Test of Self-efficacy

Table 25 shows the results from the Sphericity test. It was found that the p-value was equal to .116, meaning that the averages of self-efficacy during the three follow-ups after the completion of the program were similar within each group (within-subjects effects). Figure 16 was also considered in the analysis. When the averages of self-efficacy for the new model group and the control group were compared at baseline, 1 and 2-month, no differences were identified, but at 3-month (p-value = .001). Specifically, the patients in the new model were found to increase self-efficacy than those in the control group. However, the averages of self-efficacy were found no change when time went by. The results from the between-subjects effects test were no significantly different (df= 1, mean square= 25.304, F= 2.898, p-value = .094).

Table 25 Comparing self-efficacy among alcohol dependence completed follow-up in both groups (new model and control) by Repeated Measure General Linear Model

		Type III Sum of Squares	df	Mean Square	F	p-value
Self-efficacy	Sphericity Assumed	59.632	3	19.877	1.998	.116

Self-efficacy

			Mean Difference	Std. Error	p-value	95% CI	
						Lower Bound	Upper Bound
Time	Groups		Mean Difference	Std. Error	p-value	Lower Bound	Upper Bound
Baseline	new model	Control	1.311	.852	.129	-.394	3.015
1-month	new model	Control	.720	1.051	.496	-1.383	2.823
2-month	new model	Control	-.245	1.183	.837	-2.613	2.122
3-month	new model	Control	3.368*	1.009	.001	1.349	5.387

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

*. The mean difference is significant at the .05 level.
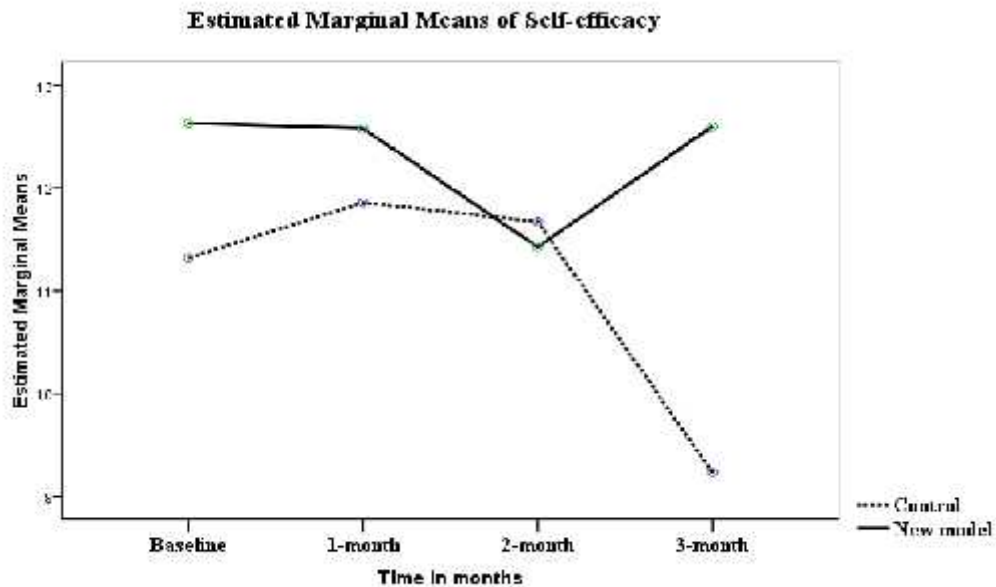
Figure 16 Graph displays mean of self-efficacy at baseline and completed follow-ups

4.3.2.5 Hypothesis Test of Quality of Life

Table 26 demonstrates the results from the Wilks' lamda test. The p-value stood at .009. When considered in conjunction with Figure 1, this showed that the average scores pertaining to the quality of life for the subjects in the same group at all the three follow-ups were different (within-subjects effects). When the quality of life of the subjects in the new model group and the control group was compared at baseline and 1 and 2-month after the completion of the program, no differences were found. In contrast, at 3-month, the new model group was found to have a statistically better quality of life than the control group (p-value = .012), although the results from the between-subjects effects test suggested that the two groups differed only moderately. However, the quality of life of the subjects in the new model group changed significantly over time (df= 1, mean square= 24.638, F= 0.282, p-value = .597).

Table 26 Comparing quality of life among alcohol dependence completed follow-up in both groups (new model and control) by Repeated Measure General Linear Model

Effect		Value	F	Hypothesis df	Error df	p-value
Quality of life in a typical month* Intervention	Wilks' Lambda	.818	4.236	3	57	.009

a. Exact statistic

Quality of life

Time	Groups		Mean Difference	Std. Error	p-value	95% CI Lower Bound	Upper Bound
Baseline	new model	Control	-.102	3.003	.973	-6.110	5.906
1-month	new model	Control	-1.008	3.218	.755	-7.447	5.432
2-month	new model	Control	-2.186	3.291	.509	-8.772	4.399
3-month	new model	Control	8.381*	3.251	.012	1.875	14.886

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

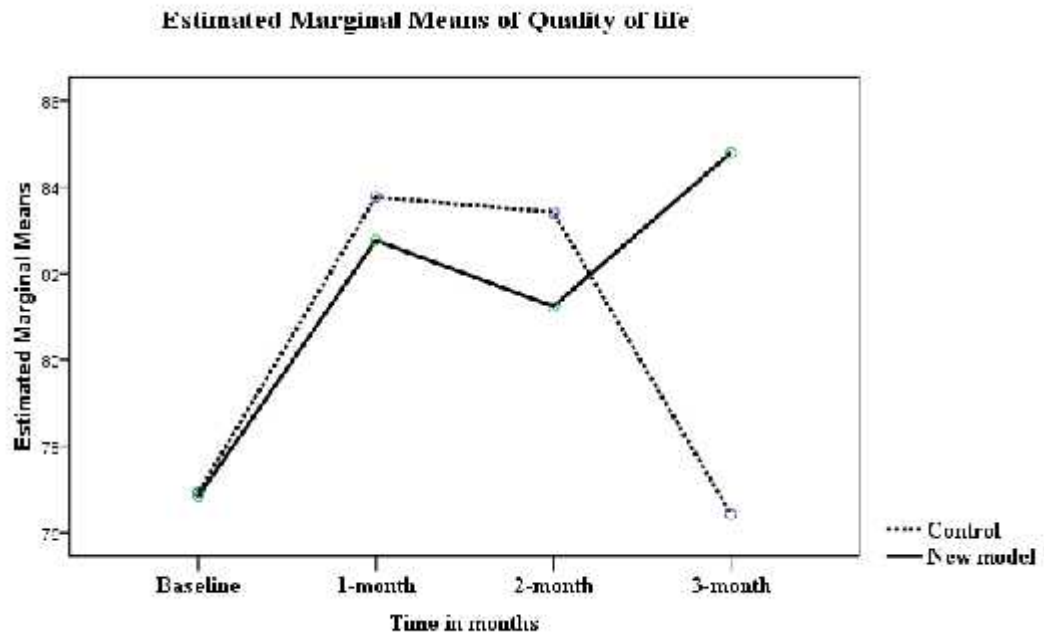*. The mean difference is significant at the .05 level.

Estimated Marginal Means of Quality of life

Figure 17 Graph display mean of quality of life at baseline and completed follow-ups

CHAPTER V

CONCLUSION AND DISCUSSION

This chapter will conclude and discuss based on the objectives and the hypotheses of the study. The discussion part comprises of three phases: 1) the experimental of PMK model, 2) development alcohol dependence outpatient rehabilitation program and 3) experimentation the new model. The details are as follows:

5.1 THE EXPERIMENTAL OF PMK MODEL

5.1.1 The experimental phase had the following objectives:

1) To evaluate the effectiveness of the PMK model in helping the patients reduce or quit drinking at months 1, 3, and 6 after their rehabilitation program;

2) To assess the patients' quality of life, readiness to change their drinking behavior, and self-efficacy to stop drinking at months 1, 3, and 6 after their rehabilitation program;

3) To compare the PMK model group and the usual care group in terms of the degree to which they reduced or stopped drinking; and

4) To compare the PMK model group and the usual care group in terms of their quality of life, readiness to change their, and self-efficacy at months 1, 3, and 6 after their rehabilitation program.

5.1.2 Research Hypotheses

The hypotheses were tested based on the null hypothesis that the group receiving treatment following the PMK model would not be significantly different from the control (or usual care) group after this 28-day program. An alternative hypothesis was also set that the treatment group would be significantly different from the usual care group at $p < .05$. The research hypotheses were as follows:

1) The alcohol-addicted inpatients at Phramongkutklao Hospital receiving treatment based on the PMK model could reduce or stop drinking better than those in the usual care group after the completion of the program.

2) The treatment group had a better quality of life than the usual group after the completion of the program.

3) The patients in the treatment group had better self-efficacy to reduce or stop drinking than those in the usual care group after the completion of the program.

4) The patients in the treatment group were more readiness to change their drinking behavior than those in the usual care group after the completion of the program.

5.1.3 Discussion

This experimental research with a randomized controlled trial was the first study in Thailand conducted to evaluate the effectiveness of the PMK model-an intensive inpatient rehabilitation program for alcohol dependence. The PMK model has been employed by the Department of Psychiatry and Neurology of Phramongkutklao Hospital since 2003. The follow-up results of this program during the first year of implementation (2003-2004) showed the rate of day abstinent 75.3% at month 6 and 57.1% at year 1. Furthermore, 88.3% of the patients receiving the rehabilitation were very satisfied with the program (Saengcharnchai, 2003). However, the effectiveness of the program has not been proven with empirical evidence. Therefore, the researcher conducted a study to evaluate its effectiveness establishing the hypothesis: that it could help to reduce or stop drinking in the patients diagnosed as being alcohol dependent in order to improve their quality of life such as their physical and mental health, as well as their social and environmental conditions. The model was also expected to enhance the perception of self-efficacy and motivation to permanently abstain from alcohol dependence.

The evaluation indicated clearly that the program was effective in promoting the patients' alcohol abstinence and improving their quality of life. The effectiveness

of the program can be proven by the following four important aspects based on the hypothesis testing as follows:

1. The alcohol-addicted inpatients at Phramongkutklao Hospital receiving treatment based on the PMK model could reduce or stop drinking better than those in the usual care group after the completion of the program.

First, the PMK model could help the participating patients reduce or stop drinking compared with those not entering the program, at p-value < .01. Also, the number of days they could abstain from drinking was 27% more than that of the non-participants at 6-month of evaluation from the survival rate (47.4% vs.20.6%). In addition, an average quantity (grams) of drinking to reduce and abstinent days to increase rather than usual are group at 3-month (p-value < .05) and (p-value <.01) at 6-month. Furthermore, the averages of quantity of drinking and abstinent days were found to change when time went by. The results from the between-subjects effects test were significantly different (p-value < .01). These findings were consistent with the results in the experimental studies of (Project MATCH, 1998; Phukao, 2004; Timko, 2006; Grenbaek, 2006; Sobell and Sobell, 2009). These research studies combined various approaches to rehabilitation of alcoholic patients such as MI, MET, CBT, and Twelve Steps, which were shown to be more effective than reliance on a single method. With regards to this, Margaret, 1999, suggested that no approach is effective in a rehabilitation process on its own, thus necessitating the use of multiple techniques. Smit and colleagues added the aspects of family (2009) and found that the family could help to better patients' rehabilitation effort, which is congruent with many other research reports (Project MATCH, 2003 Volume 3; Witkiewite, Maratt, and Walker (2005); Miller et al., (1999). This approach recognizes the importance of family and/or significant others in affecting the patient's decision to change drinking behavior. Family involvement in the intervention process offers several advantages. It provides the family an opportunity for direct understanding of the problem. It permits the family to provide input and feedback in the development and implementation of treatment goals. The patient and family can also work collaboratively on issues and problems that might interfere with the attainment of treatment goals (Margarate et.

al.,1995). Witkiewite, Maratt, and Walker (2005) employed mindfulness or meditation together with CBT to enable the patients to have the mindfulness and wisdom necessary for changing their thoughts and alcohol consumption behavior. Emphasis is placed on overcoming skill deficits, and increasing the ability to cope with difficult situations. Therefore, the main advantage of this approach is to provide patients with coping strategies and resources to fundamentally prevent relapse (Saengcharnchai et al., 2006).

2. The treatment group had a better quality of life than the usual group after the completion of the program.

The second factor proving the effectiveness of the PMK model is that it could improve quality of life. A comparison of the patients entering the program and those who did not revealed that the quality of life of the former was moderately better; particularly in terms of physical and mental health. The results indicated that the physical health and psychological well-being domain of quality of life in the PMK model group were significant at 6 months. The patients in the PMK model group was found to have a statistically better quality of life than the usual care group (p-value < .01), though the results from the between-subjects effects test suggested that the two groups differed only moderately. However, qualities of life of the subjects in the PMK model group change significantly over time. This finding agrees with the results of a research report by the Department of Mental Health, the Ministry of Public Health (1999); WHO, 2004; Lahmek et al., 2009, which indicated that a physically healthy person could perform their daily activities and duties well, and thus earn enough to cover their expenses as well as have a healthy family relationship involving no violence, and ultimately has good mental health. On the other hand, Silapakij et al. (1999) found that alcohol-dependent patients frequently suffered psychiatric illnesses such as depression and anxiety, and thus were prone to committing suicide. According to Saengcharnchai et al. (2004), alcohol is a substance leading to addiction due to its pharmacological actions causing malfunction in the production of serotonin, and thus depression. Therefore, the best treatment is to completely stop drinking (Saengcharnchai et al., 2004).

3. The patients in the treatment group had better self-efficacy to reduce or stop drinking than those in the usual care group after the completion of the program.

Third, the group dynamic used in the rehabilitation process of the PMK model included exchanges of opinions that helped the patients to learn and realize their ability to solve their own problems, thus creating self-confidence (Saengduenchai, 2010). This could also enhance their capability to deal with drinking problems. The research results demonstrated that the alcoholic patients participating in the PMK rehabilitation program perceived their ability better than the non-participants, at p-value < .01, at six months of evaluation. The self-efficacy also changed across the time of the study when the between-subjects effects test differed significantly (p-value < .01). As a result, the former could better manage positive situations and feelings such as party, celebration, and gladness, as well as negative situations and feelings such as craving for drinking, anger, stress and anxiety. The present findings were consistent with those in Phukao, 2004; Sobell and Sobell, 2009 and Saengduenchai, 2010 ,which utilized group dynamic to change thoughts and behaviors, (Bandura, 1978) and showed that this could enable patients to realize their self-efficacy, build self-confidence, and ultimately deal with personal problems; particularly relapsing to drinking. The patients in the treatment group were more readiness to change their drinking behavior than those in the usual care group after the completion of the program.

Finally, the motivated patients were found to have a lower chance of reverting to drinking and a greater likelihood to improve themselves (Phukao, 2004; Sobell and Sobell, 2009; Posayanoon and Siriwong, 1999). A comparison of the participating and the non-participating groups showed significantly higher motivation to change in the former at months 1, 3, and 6 (10.2 vs. 9.5, 10.1 vs. 9.3, and 10.0 vs. 9.2, respectively). The findings indicated that the patients' confident in their ability to reduce or stop drinking would be more motivated. This motivation would be strengthened by their better quality of life compared with their negative experiences while they were still drinking which included personal problems, poor physical (Rhem et al. 2009; Rhem,

Gmel et al. 2003) and mental (Backer et al. 2011; Silapakij, 1999) health, difficulties confronting their family (Cook, 1988 and Smit et al. 2008) as well as problems with their finance, parental duties, and jobs. Consequently, this sustainable motivation would prolong patients' efforts to reduce or stop drinking. The present results conformed to many research studies on Stage of Change Theory (e.g. Cook, 1988; Project MATCH, 1997; Margaret, 1999; Sobell and Sobell, 2009), which proposed that an assessment of an individual's readiness to change would better the effectiveness of a rehabilitation program. With regards to group processes, motivation enhancement must be carried out (Sobell and Sobell, 2009). Interpersonal relationship on the basis of mutual trust and faith should be established that helps patients to develop skills to refuse in a reasonable manner (Margaret, 1999), express their opinions appropriately, exchange ideas for solving problems, enhance their confidence and perception of the ability to stop drinking (Bandura, 1978). It is clear that these components have been integrated in the PMK model as it employs group processes to encourage learning skills, motivation enhancement to create readiness for behavioral change, and principles of faith, beliefs, good deeds, mindfulness, and wisdom to solve problems. Also introduced in the program is the concept of living in harmony with nature (Phra. Payutto, 1999).

The present research has several strengths that should be taken into consideration when a similar study is to be conducted. First, it is a randomized controlled trial. Second, very few of the participants in the program during the follow-up until the end of the project were unable to keep their appointments or could not be contacted. Third, the participants were mainly soldiers who were self-disciplined in keeping their appointments and provided truthful information. Finally, the follow-up period of 6-month was long enough for the positive change in the patients' behavior to be noticed clearly.

The researchers found that intensive inpatient rehabilitation (PMK model) intervention was more effective than usual care. This study was done in the setting at an inpatient psychiatric department; meaning that it could be generalized to any other similar areas as the study was performed under the randomized controlled trial. Its

result could be utilized for all alcohol-related problems when the data is analyzed under the same precise statistical methodology, and particularly in the same characteristics of alcohol consumption and alcohol-related problems. However, should there be other areas that would like to utilize this intervention process like this study; they could apply the intervention process for their context and appropriateness for characteristics of their target groups.

5.2 DEVELOPMENT ALCOHOL DEPENDENCE OUTPATIENT REHABILITATION PROGRAM

5.2.1 Summary development alcohol dependence outpatient rehabilitation programs

After the experiment on the efficiency of the PMK model for patients, the researchers has analysed various strengths and weaknesses of the PMK model. It could be seen that strengths of the programme include the use of group processes to stimulate the efficiencies of learning, motivational enhancement, emphases on faith, beliefs, good deeds and mindfulness and wisdom developments. The model also emphasises teamwork in the form of medical interdisciplinary for instance it may include psychiatrists, psychologists, social workers, psychiatry nurses and nurse assistants, in order to rehabilitate patients who are being admitted in the hospital. The PMK model also enabled patients to complete the course with low dropout rate (1.7 per cent). Outcomes of the research have shown that PMK model has made alcoholic patients able to reduce or stop drinking alcohol at a significance level of p-value < 0.05 from the monitoring every 3 and 6 months. It also enabled patients to have better qualities of life. Therapists were trained on Motivational Interviewing: MI and Motivational Enhancement Therapy: MET. Teams of therapists were called for meetings twice a month to improve, solve problems and enhance their motivations. Program's weaknesses include the lengthy time used to rehabilitate in hospitals. The number of days admitted throughout the course of the treatment and rehabilitation was approximately 45-60 days. The course for treatment and rehabilitation consisted of 40 sessions. This was quite a lot and it needed more therapists or group leaders. This program cannot be used in general hospitals with a limited number of specialized

therapists, few beds or without specific ward for psychiatric and alcoholic patients. The researcher who is working at a general hospital with a psychiatry and drug addicts unit has opened a patient ward for psychiatric and drug patients for their rehabilitation since 2003 with 10 beds. The majority of patients who come to rehabilitate are alcoholic patients. Due to a small number of therapists and a limited number of beds, the PMK model cannot be used for in-patients as the PMK model asks patients to be admitted to the hospital for 28 extra days in order to rehabilitate. Thus, the researcher has become interested in developing a new model of rehabilitation of alcoholic patients for out-patients by applying the PMK model for in-patients. The name for this new model is in line with that for in-patients, alcohol dependence outpatient rehabilitation program or the new model. Three experts had examined the contents and the program was tried out in Mae Sot General Hospital in Tak province. The program was run by psychologists and psychiatry nurses who were trained on Motivational Interviewing: MI and Motivational Enhancement Therapy: MET. There were 12 activities in total. Each activity was done once a week. The duration for the whole program was 3 months. Monitoring was done once a month.

The process of the analysis of strengths and weaknesses of the PMK model using SWOT Analysis is divided into 4 aspects namely strengths, weaknesses, opportunities and threats (Phucharoenyos, 2012). Contents in each session of the PMK model, group processes, duration and outcomes of the experiments from the analysis were analysed.

5.2.2 Properties of SWOT Analysis Process (Hutanuwatr, 2008)

1. All-level Participation- main leaders are influential and are the ones who contribute the most to the determination of group objectives. The main leaders are initiators of factors that are used to make decisions as well as propose an alternative strategy. Sub-leaders for instance, the team leader in each group and team members who run group activities in positions of leading discussions, initiating ideas, giving opinions or arguments, are contributors in the decision-making as well as the analyzing process.

2. The learning process is the learning stage among leaders in various levels. Main leaders and groups' team leaders can pass on the information and the experience learned to their subordinates. The learning process is a mutual one and is a result of serious thinking, opinions given, discussions and decision-making regarding directions, strategies and objectives of groups by team participants.

3. Reasoning- SWOT Analysis Process is a systematic process that requires reasoning in thinking and making decisions regarding the determination of strategies or objectives. Process participants need to think and discuss various reasons leading to decisions. This will make the objective setting a careful process.

4. Using Information is a great requirement in the analyzing process. Group participants in the analysis have to have information based on the truth and possibilities in determining strategies for instance, the information about early dropouts, relapses, reduction or stopping rate of drinking alcohols.

The results of the analysis of the PMK model Program from meetings among the interdisciplinary focus group of the PMK model Team, Phramongkutklao Hospital consisting of psychiatrists, psychiatry nurses, psychologists, social workers, registered nurses, sergeant nurses and assistants done twice a month from March to October, 2011 are as follows:

1. Strengths of the Program

1.1 The program used group processes to stimulate the efficiencies of learning, motivational enhancement, emphases on faith, beliefs, good deeds and mindfulness and wisdom developments.

1.2 The program emphasized teamwork of medical interdisciplinary group including psychiatrists, psychologists, social workers, psychiatry nurses and nurse assistants.

1.3 The program rehabilitated patients who were admitted to the hospital throughout the duration of their participation in the PMK model, thus enabled them to complete the whole course with low dropout rate (1.7 %)

1.4 It has been found that the PMK model enabled alcoholic patients to reduce or stop drinking alcohols with a significance level at p-value < 0.05 from the monitoring every 3 and 6 months. It also improved their quality of life.

1.5 All therapists had been trained on Motivational Interviewing: MI and Motivational Enhancement Therapy: MET

1.6 There were two meetings of rehabilitating teams a month to improve, solve problems and enhance motivations of therapists.

2. Weaknesses of the program

2.1 The duration used for the rehabilitation in the hospital was lengthy. The number of days admitted throughout the course of the treatment and rehabilitation was approximately 45-60 days.

2.2 There were 40 sessions throughout the course of rehabilitation. This was a lot. It needed more therapists or group leaders.

2.3 This program cannot be used in general hospitals with limited number of specialized therapists, limited number of beds or without a special ward for psychiatric and alcoholic patients.

3. Opportunities of the Program

3.1 This program can be used in general hospital by applying it to such healthcare facility.

3.2 Alcohol-dependent patients have an alternative to rehabilitate.

4. Threats

4.1 Patients who participate in groups may leave their groups at any time. Hence they may not complete the whole course of the rehabilitation as determined by the program.

4.2 It is easy for patients to relapse into drinking alcohols.

5.2.3 Discussion

From reviewed literature Monti et al, 1989, Miller, 2004 in the Project MACTH and project combine they suggested that the program should be used 8 core topic of CBT and 6 elective sessions. Moreover, the length of the program should not beyond 12-14 sessions or 3 months, if the material longer than that it able to increasing pressure the therapist and the patients may be increasing dropout from the program. PMK model is comprised of 5 courses compare between new model (Alcohol dpendence outpatient rehabilitation program) is comprised of 4 courses. Total 40 lessons of PMK model; there are 8 core topics of CBT and 20 elective sessions. There is some overlap in material between each session such as health education, family education, and cognitive behavior therapy. Additionally, it also has over sessions of relaxation group. Total 12 lessons of the new model; there are 8 core topics of CBT and 8 elective sessions. They also received meditation CD, home work, and daily record. In sum, the alcohol dependence outpatient rehabilitation program does not assume that the patient's acquisition of individual coping skills during treatment is the primary mechanism of his/her recovery. Rather, the alcohol dependence outpatient rehabilitation program is an integrated approach that combines several major elements, each of which has been supported as effective in alleviating alcohol problems, listed below:

1. Enhancement of patient motivation for change
2. Family involvement in treatment
3. Emphasis on the patient's social/ community context of reinforcement for drinking and abstinence
4. Cognitive-behavioral skill training
5. Support for use therapeutic medication
6. Involvement in mutual-help groups such as Alcoholics Anonymous.

Eight core topic of CBT are present as follow (Monti et al, 1989):

1. Coping with skills training
2. Coping with craving and urge to drink
3. Managing thoughts about alcohol and drinking

4. Problem solving

5. Refusal and assertiveness skills

6. Planning for emergencies and coping with lapse

7. Seemingly irrelevant decisions

8. Coping with persistent problem

Six elective sessions are present below:

1. Health education about alcohol dependence and motivation for change

2. Couples/ Family involvement (1-2 sessions)

3. Emotional management training

4. Increasing pleasant activities-healthy for good health, meditation

5. Social support for sobriety

6. Mutual support group facilitation- 12-step Buddhist (Alcoholics Anonymous: AA)

Table 27 A comparisons of PMK model and the new model

	PMK model	Alcohol dependence outpatient rehabilitation program (the New model)
Number of sessions	Fixed at 40 sessions(8 core topics and 20 elective)	Fixed at 12 sessions(8 core topics and 8 elective)
Frequency of sessions	daily	Weekly
Duration	28 days	3 months
Setting	Inpatient	Outpatient
Content Modules	**CBT** 1. Cognitive Behavior modification 2. Circuit cues and craving (ABCD Method) 3. Emotional management 4. Problem solving 5. Automatic Thoughts 6. Skill of assertiveness and refusal 7. Adaptation 8. Healthy for good health. **Buddhist twelve steps** 1. The Buddhist twelve-step 2. A spiritual disease	**CBT (recovery skill training)** 1. Circuit cues and craving, 2. Emotional management 3. Skill of assertiveness and refusal. 4. Cognitive behavior Modification **Buddhist twelve steps (Good-self and Value development)** 1. A spiritual disease 2. The Buddhist Twelve Steps

	PMK model	Alcohol dependence outpatient rehabilitation program (the New model)
	3. The Eight fold Path the way that lead to the extinction of suffering 4. Self-development of Buddhist 5. Training of mindful skill 6. Practice of concentration 7. Yonisomanasikarn (Analytical thinking) 8. Karma and cessation of karma. **Health Education** 1. The current situation of substance 2. Law 3. Drug index hallucinogen, stimulants, depressants 4. Tobacco and Alcohol 5. Chemical dependence 6. PMK Model and net work 7. Feedback information 8. Balance Daily Life. **Family Education** 1. Family psycho education 2. Impact of alcohol misuse .	3. Self-development of Buddhist **Health education and motivational interviewing** 1. Health for good health 2. Building motivation for alcohol abstinence 3. Alcohol dependence **Family support and relapse prevention (Family Education)** 1. The roles of family and problem solving

	PMK model	Alcohol dependence outpatient rehabilitation program (the New model)
	3. Family readjustment after cessation of drug abuse 4. Role of family and problem solving. Relaxation 12 sessions such as Yoga, music, meditation etc	2. Relapse prevention.
Home work	None	Fixed at 12 sessions
Extra material	None	Meditation CD
Daily record	None	During treatment

5.3 EXPERIMENTATION THE NEW MODEL

This stage evaluated the effectiveness of the new model in the treatment and rehabilitation of alcohol-addicted outpatients having joined a program based on the model until its completion and at month 3 after the program in terms of the patients' abstinence from drinking, readiness to change their drinking behavior, perception of self-efficacy, and quality of life. The subjects were divided into the new model group and the control group using a simple random sampling technique. It was found that the program was effective in reducing or quitting drinking. The following discussion was done on all the aspects mentioned earlier.

Discussion of The New Model

Literature reviews in Thailand and abroad shows that the treatment and rehabilitation of alcohol addicts are usually carried out based on the severity of addiction. For example, brief interventions are done with patients having harmful drinking behavior, whereas alcohol-dependent patients are likely to receive intensive

treatment together with a long-term follow-up and recovery program (Raistric, Heather, and Godfret, 2006: 19-20). In addition, the type of treatment is also selected according to psychiatrists using the DSM-IV criteria and the AUDIT scores so as to ensure that patients receive a suitable sort of treatment.

This new model evaluation stage dealt with the effectiveness of the manual provided to the alcohol-dependent outpatients. The findings presented earlier indicated that the subjects had drinking problems for a long period of time. They were all diagnosed with alcohol dependence based on the AUDIT scores (26-28 points) and exceeded the standard drinking volume (14 standard drinks per week for males). They had to receive alcohol detoxification sessions before participating in the new model. During the rehabilitation and treatment, they attended meetings with health professionals once a week for 12 weeks. The dropout rate was approximately 16% before completed group therapy. The follow-ups at months 1, 2, and 3 revealed that the patients in the new model could reduce the amount of drinking to a greater extent than those in the control group at 3-month follow-up. This result was consistent with Saengduenchai (2010) and Noknoy (2004).

As regards to the number of days for which the subjects stopped drinking, no statistically significant differences were identified. However, when the average numbers for the treatment group and the control group were compared at the follow-up in 3-month, the former was found to abstain from drinking more frequently than the latter (58.5 vs. 43.5).

In terms of frequency of drinking, it was found that the treatment group drank significantly less often than the control group at the follow-up in 3-month at $p < .01$ (16.7% vs. 48.4%). This finding was quite surprising considering the Stage of Change Theory of Prochaska and DiClimente (1986), which postulate that a significant behavioral change can be noticed after six months and that a continual-follow up can help patients to stop drinking to a greater degree. During the follow-ups, it was found that five of the patients in the treatment group reverted to drinking daily, but the

volume reduced by two to three standard drinks (20-30 grams). The frequency of drinking also went down.

With regards to group processes, motivation enhancement must be carried out (Sobell and Sobell, 2009). Interpersonal relationship on the basis of mutual trust and faith should be established that helps patients to develop skills to refuse in a reasonable manner (Margaret, 1999), express their opinions appropriately, exchange ideas for solving problems, enhance their confidence and perception of the ability to stop drinking (Bandura, 1978). It is clear that these components have been integrated in the new model for outpatients as it employs group processes to encourage learning skills, motivation enhancement to create readiness for behavioral change, and principles of faith, beliefs, good deeds, mindfulness, and wisdom to solve problems. Also introduced in the program is the concept of living in harmony with nature.

The follow-ups on the two groups of patients revealed that the majority of them reverted to drinking due to their pathological addiction to alcohol, a chronic illness in the same way as bronchitis, hypertension or cancer (Saengcharnchai et al., 2003; Boffetta and Hashibe, 2006; Rhem et al., 2009). Therefore, during a recovery period, continual follow-ups such as home visits, telephone contacts (Rus-Makovec and Cebasek-Travnik, 2008), and motivation enhancement by family members and caretakers will likely help to prolong the patients' behavioral change. Similarly, Margarate et al. (1995) and Tayayutt (2002) suggests that family members and health professionals play an important role in helping patients to abstain from drinking for a longer period of time. Also, networking with the community for further care as well as creation of an understanding of and progression of the illness can help to better the results of a rehabilitation program. Instead of being blamed, patients should be encouraged and motivated to stop drinking again.

With respect to their quality of life, the patients in the new model started to change their behavior, i.e. drank less or stopped drinking, at 3-month follow-up. In other words, their physical health and mental health were likely to get better. However, the social and environmental aspects of life quality did not change

significantly between the two groups. The results support the research studies of Phukao (2004), Suwit (2007), and WHO (2004), which state that a physically healthy body can perform their duties well as well as be responsible for their family and work, thus enhancing their mind. On the other hand, Silapakit et al. (1999) found that alcohol-dependent patients frequently suffered psychiatric illnesses such as depression and anxiety, and therefore were prone to committing suicide. According to Seangcharnchai et al. (2004), alcohol is a substance leading to addiction due to its pharmacological actions causing malfunction in the production of serotonin, which subsequently causing depression. Therefore, the best treatment is to completely stop drinking (Saengcharnchai et al., 2004).

As regards to the readiness to change their drinking behavior, the patients in the new model were better prepared to do so at 3-month follow-up. This finding was consistent with their perception towards ability to change themselves in positive and negative situation as well as their desire to drink. It is clear that using group processes to stimulate learning together with motivation enhancement aimed at creating readiness to change drinking behavior is likely to be effective in the treatment and rehabilitation of alcohol dependence.

In this regard, Sobell and Sobell (2009) argue that the creation of positive relationships promoting mutual trust and faith as well as beliefs in good deeds, mindfulness, and wisdom can help to solve problems in the long run. They add that group processes encourage patients to develop skills to refuse in a reasonable manner. In a similar context, Margaret (1999) suggests that the ability to express opinions in a suitable way and collaborative learning in a problem-solving process helps patients to acquire confidence and perception of self-efficacy to stop drinking (Bandura, 1978).

5.4 LIMITATIONS OF THE PRESENT RESEARCH

5.4.1 Limitations of phase 1 the experimentation the PMK model

1. The participants in the present research were all male, thus limiting its generalizability to other groups of population.

2. The data collection relied on self-reports, which might have impaired the reliability of the data.

3. The participants and non-participants were staying at the same ward.

4. This program was conducted as a 28-days program, which the rehabilitation should have continued.

5. The application of the PMK model at another hospital or clinic should take the nature of that particular context into consideration.

5.4.2 Limitations of phase 2 development alcohol outpatient rehabilitation program

1. Some team leaders ignored team meetings which led to team members participating in the analysis not regarding this as important. Thus there were lacks of opinions or discussions and arguments.

2. Team leaders lacked sufficient information for instance, living conditions, culture and beliefs of patients living in other provinces. Team leaders also lacked references on relevant researches.

3. The development of the program that can be applied may pose problems in terms of translating academic technical language to spoken language used in daily lives.

4. The analyzing process consists of teamwork. Sometimes, executors participating in the analyzing process did not want to express their opinions or discuss and argue with main leaders who were researchers or psychiatrists. These have resulted in biases in information giving and the knowledge in developing tools.

5. Most steps of decision-making leading to practices came from group leaders.

5.4.3 Limitations of phase 3 experimentation the New Model

1. The sample size was small. Thus, the generalizability of the findings was limited.

2. The number of female patients receiving treatment and rehabilitation was limited and thus were not included in the present study. Again, the generalizability of the findings should be made with cautions.

3. The follow-up period was short. Thus, the pattern of changes in the way the patients thought and behaved was not thoroughly examined.

4. The manual used in the research was developed and used for the first time. Thus, further evaluation and improvement should be carried out to ensure its effectiveness. However, it should be noted that the present manual was developed based on the PMK model for inpatients, which had been proved to be effective in the treatment and rehabilitation of this group of alcohol-dependent patients and drug addicts. This study also showed that when the manual was applied to a program for outpatients, its effectiveness in helping them to cut down on or stop drinking was undeniable. For this reason, it is regularly used in the psychiatric and drug addiction unit at Mae Sot General Hospital, Tak Province. Thus, application of the manual in other similar units should also be possible, although modification to a particular population and health care unit is still required.

5.5 BENEFITS OF THE PRESENT RESEARCH

1. Alcohol addicts have more knowledge regarding the dangers of alcoholic drinks and are provided with guidelines for quitting drinking in a sustainable way. This will result in their improved quality of life as well as better relationships with family and society.

2. This study provides guidelines for health professionals in taking care of alcohol-dependent patients and helping them solves problems resulting from addiction as well as adapting the results to the treatment and rehabilitation of drug addicts.

3. The PMK model for inpatients and outpatients can be adapted to help the alcohol-dependent patients in other health care centers to reduce or stop drinking.

5.6 RECOMMENDATIONS FOR FURTHER RESEARCH

1. The subjects in the present study did not include female patients due to the fact that all the patients diagnosed with alcohol dependence were male. This does not mean that there are no female alcohol-dependent patients, but they just choose not to receive treatment in a hospital for fear of stigmatization by society. Thus, the generalizability of the findings seems to be limited for this group of population, which required further research.

2. A similar study should be conducted in other types of hospital. The PMK model was proved effective at Phramongkutklao Hospital probably because the majority of the patients here are soldiers. Thus, they are strongly disciplined and obedient, showing up according to appointments strictly.

3. An extended follow-up should be carried out at a year or two.

4. A study along this line should be carried out in other regions such as the northeastern region or the southern region to evaluate the possibility of extending the application of the PMK inpatients and outpatients across the country.

5. The PMK inpatients or outpatients should also be evaluated in terms of efficiency, feasibility, cost effective, and service management.

6. The present findings suggested that the treatment and rehabilitation of alcohol addicts require an integration of a variety of approaches, especially those relating to attitudinal and behavioral changes as well as motivation enhancement. This should prove particularly effective in campaigning against reducing the problem of alcohol dependence among teenagers for prevention of future addiction.

In conclusion, alcohol dependence is a significant public health problem. It is because prevalence, disability and chronic illnesses, which cause a high economic

burden for society, related to both direct and indirect costs. Alcohol dependence also significantly influences the outcome of concomitants medical illnesses such as cardiac disease, cancer, liver disease, and depression. Primary care physicians and nurses should be aware of the common risk for alcohol dependence such as age, gender, risk behavior family, and culture. Management of alcohol dependence should include treatment and prevention intervention program. The PMK model can be considered an effective alternative in the treatment and rehabilitation of alcohol addiction. Nevertheless, a home visit, network referral, and community participation should be integrated in order that everyone involved will understand alcohol addiction is a chronic illness requiring continuous help. Furthermore, the outpatient model can be adapted in other public health agencies by taking the characteristics of the population and service area into consideration.

REFERENCES

Adeline, N. et al. (2010). Effect of motivational interviewing on reduction of alcohol use. **Drug and Alcohol Dependence** 107: 23-30.

Alfredsson J. (2006). The development and distribution of public health. Health in Sweden: The National Public Health Report 2005. **Scand J Public Health** 34:27-42.

American Psychiatric Association (APA). (2000). **Diagnostic and statistical manual of mental disorder** text revision (4th ed.) Washington, DC: Author.

Anderson, P., and Scott, E. (1992). The effect of general practitioners' advice to heavy drinking men. **British Journal of Addiction** 87: 891-900.

Austin, G. (1978). **Perspectives on the history of psychoactive substance abuse**. National Institute on Drug Abuse Research Issue 23. Washington DC: U.S. Department of Health, Education, and Welfare.

Babor, T.F., Higgins-Biddle, J.C., Saunders, J.B. and Monterio, M.G. (2001). **AUDIT The Alcohol Use Disorders Identification Test: Guidelines for Use in Primary Care**. Second Edition. World Health Organization, Geneva.

Backer, A. L., Thornton, L. K., Hiles, S., Hides, L., and Lubman, D.I. (2011). (Article in Press) Psychological interventions for alcohol misuse among people with co-occurring depression or anxiety disorder: A systematic review. **Journal of Affective Disorders**.

Bandura, A. (1977). **Social Learning Theory**. Englewood Cliffs, NJ:Prentice Hall.

Bandura, A. (1986). **Social foundation of thought and action: A social cognitive theory**. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1978). The self system in reciprocal determinism. **American Psychologist** 33: 344-358.

Basen-Engquist k, Masse LC, Coyle k, et al. (1999). Validity of Scales measuring the psychosocial determinants of HIV/AIDS –related risk behavior in adolescents. **Health Edu Res** 14(1): 25-38.

Benshoff,J.J., and Janikowski,T.P. (2000). **The rehabilitation model of substance abuse counseling**. Belmont, CA: Wadsworth.

British Medical Association. (2007). **Fetal Alcohol Spectrum Disorders- a guide for healthcare professionals**. London: British Medical Association.

Britt, E., Hudson, S. M., and Blampied, N. M. (2004). Motivational interviewing in health settings: a review. **Patient Education and Counseling** 53: 147-155.

Boffetta, P., and Hashibe, M. (2006). **Alcohol and cancer**. International Agency for Research on Cancer. Lancet 7: 149-156.

Bower, G. W. (1975). **Cognitive psychology: An introduction**. In W.K. Ester(ed.), Handbook of Learning and cognition, Hillsdale, NJ: Erlbaum: 25-80.

Carolyn E. and D' Avanzo. (2000). **Addictions Substance Abuse: Strategies for Advanced Practice Nursing**. New Jersey: Prentice Hall Health.

Centers for Disease Control and Prevention (CDC). **Alcohol-attributable deaths report average for United States 2001-2005** [Online]. 2004. Available from :http://www.cdc.gov/alchol/ [2010, August 20].

Christine, T. and Anna, D. (2007). A randomized controlled trial of intensive referral to 12-step self-help groups: One-year outcomes. **Drug and Alcohol Dependence** 90: 270-279.

Cook, C. C. (1988). The Minnesota Model in the Management of Drug and Alcohol Dependency: miracle, method or myth? Part II. Evidence and Conclusion. British. **J Addict** 83: 735-748.

Cox, W. M. and Klinger. E. (2004). **Handbook of Motivational Counseling: Concept, Approaches, and Assessment**. 2^{ed} Editor. England. Jhon Willey & Sons.

DiClemente, C. C. (1991). **Motivational Interviewing and the Stage of Change**. In W.R. Miller and S. Rollnick (Eds.), Motivational Interviewing: Preparing People to Change Addictive Behavior pp. 191-202 New York: Guilford Press.

DiClemente, C. C., Schlundt,D., and Gemmell, L. (2004). Readiness and stage of change in addiction treatment. **American Journal of Addiction** 13: 103-119.

Doweiko, H. E. (2002). **Concepts of chemical dependency** (5th ed.). Pacific Grove, CA: Brooks/Cole.

Fazey, C. (1977). **Aetiology of Psychoactive Substance Use.** Paris: United Nation Educational, Scientific and Cultural Organization.

Garlick, R. **Action News 10 (3) Canadian Center on Substance Abuse** [Online]. 2000. Available from: http://www.ccsa.ca/ [1020, January 10]

Grenbaek, M., and Nielsen, B. (2006). A randomized controlled trial of Minnesota day clinic treatment of alcoholics. **Addiction** 102: 381-388.

Hanson, G., and Venturelli, P. J. (1995). **Drug and Society**. Boston: Jones and Bartett.

Hides L, Carroll S, Catania L, Cotton SM, Baker A, Scaffidi A, Lubman DI. (2010). Outcome of an integrated cognitive behavior therapy (CBT) treatment program for of co-occurring depression and substance misuse in young people. **Journal of Affective Disorders** 121: 169-174.

Hutanuwatr, N., and Hutanuwatr N. (2008). Strategic analysis with SWOT. Ubon Ratchathani: Printing House, Instructional Resource Centre, Ubon Ratchathani University.

Joanna Hayden. (2009). **Introduction to Health Behavior Theory**. Jones and Bartlett Publishers, Sudbury, MA.

Johnson, V. E. (1986). **Intervention: How to help someone who doesn't want help**. Minneapolis, MN: Johnson Institute Books.

Karen Glanz, Barbare K. Rimer, K. Viswanath. (2008) editors. **Health Behavior and Health Education** : Theory. Research and Practice. Jossey-Bass, San.

Karoly, P. (1993). **Mechanisms of Self-Regulation**. Annual Review of Psychology 44: 23-52.

Katherine, V. W., and Dian, R. D. (2008). **Addiction Treatment: A Strengths Perspective** (2nd ed.). Belmont: Thomson west.

Kinney, J. (2006). **Loosening the grip: A handbook of alcohol information** (8th ed.), Boston: McGraw Hill.

Kittirattanapaiboon, P. (2010). **The prevalence of alcohol use disorders in Thailand: National Epidemiological Survey 2008**. 1st ed. Nonthaburi, Department of Mental Health, The Ministry of Public Health.

Lahmek, P., Berlin, I., Michel, L., Berghout, C., Meunier, N., and Aubin, H. J. (2009). Determinants of improvement in quality of life of alcohol-dependent patients during an inpatient withdrawal programme. **Int J Med Sci** 6(4): 160-167.

Lerner, R. M. (1982). **Children and adolescent as producers of their own development**. Development Review 2: 342-370.

Levin, J. D. (1995). **Introduction to alcoholism counseling: A bio-psycho-social approach**. Washingtion, DC: Taylor & Francis.

Loeber, ., Duka, T., Welel, H., Nacovics, H., Heinz, A., Fore, H., and Mann, K. (2009). Impariment of cognitive abilities and decision making after chronic use of alcohol: The impact of multiple detoxifications. **Alcohol & Alcoholism** 44(4): 372-381.

Longabaugh, R., Mattson, M. E., and Conors, G. I. (1994). Quality as an Outcomes Valiable in Alcoholism Treatment search. **J Stud Alcohol** 12: 119-129.

Mahantnirunkul, S., et al. (2002). **The project of mental health survey program**. SuanPrung Psychiatric Hospital. Department of Mental Health, Chiang Mai.

Margaret, E. and Mattson. (1995). **Motivation Enhancement Manual**: Project MATCH Monograph Series volume 2 Editor. National Institute on Alcohol Abuse and Alcoholism. Rockville, Maryland.

Margaret, E. and Mattson. (1999). **Twelve-step Facilitation Therapy Manual**: Project MATCH Monograph Series volume 1 Editor. National Institute on Alcohol Abuse and Alcoholism. Rockville, Maryland.

Margaret, E. and Mattson. (2003).**Cognitive Behavioral Coping Skills Therapy Manual**: Project MATCH Monograph Series volume 3 Editor. National Institute on Alcohol Abuse and Alcoholism. Rockville, Maryland.

Marlatt, G. A., and Gordon, J. R. (1985). **Relapse prevention: Maintenance strategies in the treatment of addictive behaviors**. (Eds.) New York: Guilford Press.

Medical consequence of alcoghol abuse. (2000). **Alcohol Research and Health** 24(1): 27-31.

Ministry of Public Health. (1999). Bureau of Policy and Health Planning. Thai Public Health 1997-1998. Bangkok: Express Transportation Organization Publishing.

Medical Consequences of alcohol abuse, 2000. **Alcohol Research and Health** 24(1): 21-31.

Miller, W. R. (2004). **Combined Behavioral Intervention Manual: A Clinical Research Guide for Therapists Treating People with Alcohol Abuse and Dependence.** Project COMBINE Monograph Series volume 1 Editor. National Institute on Alcohol Abuse and Alcoholism. Rockille, Maryland.

Miller, W. R. (1996). Motivational Interviewing: Research, practice, and puzzles. **Addictive Behaviors** 21(6); 835-842.

Miller, W. R., Meyers, R. J., and Tonigan, J. (1999). Engaging the unmotivated in treatment for alcohol problems: A comparison of three strategies for intervention through family member. **Journal of Consulting and Clinical Psychology** 17: 688-697.

Miller, W. R., Meyers, R. J., and Tonigan, J. (1993). Enhancing motivation for change in problem drinking: A controlled study of two therapist styles. **Journal of Consulting and Clinical Psychology** 61: 455-461.

Miller, W. R., and Rollnick, S. (1991). **Motivational Interviewing**: Preparing People to Change Addictive behavior. New York: Guilford Press.

Monti, P. M., Adrams, D. B., Kadden, R. M., and Cooney, N. L. (1989). **Treating Alcohol Dependence:** A Coping Skills Training Guide. New York: Guilford Press.

Morgenstern, J., Irwin, T. W., Wainberg, M. L., Muench, F., Parsons, J. T., Bux Jr, D. A., and Kahler, C. W. (2007). A Randomized Controlled Trial of Goal Choice Intervention for Alcohol Use Disorders Among Men Who Have Sex With Men. **Journal of Consulting and Clinical Psychology** 75(1): 72-84.

National Association of Social Workers. (2001). **NASW Standards for culture competence in social work practice**. Washington, DC: Author.

National Institute on Alcohol Abuse and Alcoholism (NIAAA). (2004). Alcohol's damaging effects on the brain. **Alcohol Alert** :63.

Neisser, U. (1976). **Cognition and reality**: Principles and implications of cognitive psychology. San Francisco: Freeman.

Noknoy, S. Rungsin, R., Saengcharnchai, P., Tontipattayangkul,U., and Jim M. (2004). RCT of effectiveness of motivational enhancement therapy delivered by nurses for hazardous drinkers in primary care unit in Thailand. **Alcohol Alcohol** 45(3): 263-70.

Nyamathi, A., et al. (2010). Effect of motivational interviewing on reduction of alcohol use. **Drug and Alcohol Dependence** 107: 23-30.

Osher, F. C. (2000). **Medical complications**. In J. Kinney (Ed.), Loosening the grip: A handbook of alcohol information (6th ed., pp. 66-129). Boston: McGraw-Hill.

Paoblek, W. (2009). **Reliability and validity of the Thai version questionnaire on the readiness to change alcohol drinking behavior in patients with alcohol use disorders at Psychiatry Department, Phramongkutklao Hospital**. Degree of Master of Science Program in Psychiatry: Department of Psychiatry and Neurology, Phramongkutklao Hospital, Thailand.

Paulo, F. D., Claiton, H. D., Rosito, A. G., Manfroi, C. W., and Fuchs, D. F. (2007). Alcohol consumption, cardiovascular health, and endothelial function markers. **Alcohol** 41: 479-488.

Phra. Prayudh Pharyutto. (1999). **Buddadhamma**. Mahachulalongkornjavidyalaya, Bangkok.

Phucharoenyos, V. (2012). SWOT Analysis of Using Buddhism in Psychiatric Treatment of Thai Psychiatrists. **J Psychiatr Assoc Thailand** 57(1): 111-124.

Phukao, D**. Development of culturally appropriate treatment program for people with alcohol use disorder in Thailand**. Ph.D. Thesis, School of Medicine, The University of Queensland [Online].2006. Available From: http://th.linkidin.com/pub/darunee-phukao/19/57b/a30 [2010, August 20].

Perry, C. L., and Other. (2000). Project Northland High School Intervention: Community Action to Reduce Adolescent Alcohol Use. **Health Education and Behavior** 27: 29-49.

Plant, M. A., and Plant, M. L. (2006). **Binge Britain: alcohol and the national response**. Oxford: Oxford University Press.

Plungklang, S. and Singkakul, S. (2006). **Effects of Motivational Interviewing on Alcohol Dependence In-patient**. Khonkaen Drug Dependence treatment Center, Department of Medical Service Khonkaen Provience, Thailand.

Pocock SJ. (1983). **Clinical Trials**: A Practical Approach. Wiley.

Posayanoon, P., and Siriwong, A. (1999). **Study of alcohol consumption in Lopburi Provience, Thailand**. Chulalongkorn University, Bangkok, Thailand.

Prochaska, J. O. (1994). Strong and weak principles for progressing from pre-contemplation to action on the basis of twelve problem behaviors. **Health Psychology** 13: 47-51.

Procheska, J. O., and DiClemente, C. C. (1983). Stage and processes of self-change of smoking: Toward an integrative model of change. **Journal of Consulting and Clinical Psychology** 51(3): 390-395.

Procheska, J. O., DiClemente, C. C., and Norcross, J. C. (1992). In search of how people change: Applications to addictive behaviors. **Am psych** 47: 1102-1114.

Project MATCH Research Group. (1998). Matching alcoholism treatment to client heterogeneity: Project Match three- year drinking outcomes**. Alcohol Clin Exp Res** 22: 1300-11.

Raistrick, D., Healther, N., and Godfrey, C. (2006). Review **of the effectiveness of treatment for alcohol problems**. National Agency for substance Misuse: London.

Rehm, J., Gmel, G., Sempos, C.T., and Trevisan, M. (2003). Alcohol-related morbidity and mortality. **Alcohol Research Health** 27 (1): 39-51.

Rehm, J., Mathers, C., Popova, S., et al. (2009). **Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorder**. Lancet. 373: 2223-2233.

Rosner B. (1995). **Fundamental of Biostatistics** 5th ed. California: Duxbury Press.

Royce, J., & Scratchley, D. (1996). **Alcoholism and others drug problem**. New York: Free Press.

Rus-Makovec, M., and Cebasek-Travnik, Z. (2008). Long-term abstinence and well-being of alcohol-dependent patients after intensive treatment and aftercare telephone contracts. **Public Health** 49: 763-771.

Saengduenchai, S. (2010). **The effect of cognitive behavior therapy program, with social support, on readiness for early relapse prevention and non-relapse of alcohol use disorder patients**. Dissertation, Ph.D. Bangkok: Graduate school, Srinakharinwirot University.

Saengcharnchai,P., Netrakum, P., and Hirunwiwattanakul, N. (2006). **Textbook of Addiction Psychiatry**, (3rd ed.). The Office of Narcotics Control Board, Ministry of Justice, Thailand.

Saengcharnchai, P. (2003). **Alcoholics Anonymous in Hospital Setting**. Department of Psychiatry and Neurology Phramongkutklao Hospital, Bangkok, Thailand.

Saengcharnchai, P. (2003). **Phramongkutklao model in Hospital Setting**. Department of Psychiatry and Neurology Phramongkutklao Hospital, Bangkok, Thailand.

Smit, E., Verdurmen, J., Monshouwer, K., and Smit, F. (2008). Family interventions and their effect on adolescent alcohol use in general populations; a meta-analysis of randomized controlled trials. **Drug and Alcohol Dependence** 97: 195-206.

Silapakij, P., Pumpaisan,V., and Kitiratanapaiboon, P. (1999) **Prevalence and Mental Health Status of alcohol addicted**. Suan Prung Psychiatric Hospital, Chiang Mai.

Shakeshaft, A. P., Bowman, J. A., and Senson-Fisher, R. W. (2002). Community-based drug and alcohol counseling: who attends and why? **Drug and Alcohol Review** 21: 153-162.

Sobell, L. C., and Sobell, M. B. (2009). Randomized Controlled Trial of a Cognitive-Behavioral, Motivational Intervention in a Group Versus Individual Format for Substance Use Disorders. **Psychology of Addictive Behaviors** 23 (4): 672-683.

Stinchfield, R., and Owen, P. (1998). Hazelden's model of treatment and its outcome. **Addictive Behaviors** 23(5): 669-683.

Suwit W, editor. (2007). **Thailand health profile 2005-2007**. Nonthaburi, Thailand: Bureau of Policy and Strategy, Ministry of Public health.

Tayayutt, P. (2002). **Social support of person with alcohol psychotic disorder**. The independent study. Master degree of Mental Health and Psychiatric Nursing. Faculty of Nursing, Chiang Mai University, Chiang Mai.

Tian, P. S., Oei and Tamara, B., (2000). Alcohol expectancy and drinking refusal self-efficacy: A test of specificity theory: **Addictive Behavior** 25(4): 499-507.

Timko, C., and DeBenedetti, A. (2007). A randomized controlled trial of intensive referral to 12-step self-help groups: One-year outcomes. **Drug and Alcohol dependence** 90: 270-279.

Thai Health Promotion Foundation. **Alcohol consumption control: the sustainability of well-being for Thai people** [Online]. 2005. Available from: http://en.thaihealth.or.th [2010, August 20].

The Administrative Committee for Substance Abuse research Network (ACSAN) of the Office of Narcotics Control Board (ONCB), Ministry of Justice. (2007). **The National Household Survey for Substance and Alcohol Use (NHSSA)**. The Centre for Alcohol Study, Office of Health Promotion Foundation and ONCB. Thailand.

Thongphanit, C. (2007). **Effectiveness of Case Management in Khonkaen In-patient Alcohol Dependence Treatment Program**. Khonkaen Drug Dependence treatment Center, Department of Medical Service Khonkaen Province, Thailand.

US Dept. of Health and Human Services. (1993). **Eighth Special Report to the US Congress on Alcohol and Health from the Secretary of Health and Human Service.** Washington, DC: US Dept of Health and Human Services, Public Health Service, National Institutes of Health, National Institutes on Alcohol Abuse and Alcoholism.

Velicer, W. F., DiClemente, C. C., and Prochaska, J. O. (1990). Relapse situation and self-efficacy: An integrative model. **Addictive Behaviors** 15: 271-283.

Walters G D. (2000). Behavioral self-control training for problem drinkers: a meta-analysis of randomized control studies. **Behavior Therapy** 31: 135-149.

Witkiewite, K., Marlatt, G. A., and Walker, D. D. (2005). Mindfulness based relapse prevention for alcohol and substance use disorder. **Journal of Cognitive Psychotherapy** 19: 211-228.

World Health Organization. (1993). **The ICD-10 Classification of Mental and Behavioral Disorders: Diagnostic criteria for research**. Geneva, Switzerland: World Health Organization.

World Health Organization. (1996). **WHOQOL-BREF**: Introduction, Administration, Scoring, and Generic version of the assessment. Field Trial Version Geneva, Switzerland: World Health Organization.

World Health Organization. (2000). **The world health report 2002**. Reducing risks, promoting healthy life, Geneva, Switzerland: WHO.

World Health Organization. (2001). **Global status report on alcohol**. Geneva, Switzerland: World Health Organization.

World Health Organization. (2002). **The World Health Report 2002**: Reducing Risks, Promoting Healthy Life. Geneva, Switzerland: World Health Organization.

World Health Organization (WHO). (2004). **Global status report on alcohol 2004**. Geneva, Switzerland: WHO.

World Health Organization. (2006). **Intimate partner violence and alcohol fact sheet**. Geneva, Switzerland: World Health Organization.

APPENDIDICES

Appendix A

Questionnaire

Part 1: The questions about your alcohol use

Please read each question carefully before answering it. Choose the answer that best describes what you believe and feel.

1.1 Demographic and socioeconomic data

1. Age…………………………years
2. Sex   1 male   2 female
3. Religion……………………………………
4. Marital status

    1 single   2 married   3 separated

    4 divorced   5 widowed   6 other………………

5. Education level

    1 none at all   2 primary school 3 secondary school

    4 tertiary   5 bachelor degree 6 master degree or more

6. Occupation

    1 none at all   2 agriculture   3 business/commercial

    4 government   5 employee   6 other……………….

7. Income/ month

    1 > 5,000   2 5,000-10,000   3 11,000-15,000

    4 16,000-20,000   5 < 20,000

8. Household status

    1 number member in household……………………..

    2 income/month……………………………………

1.2 Alcohol drinking behavior

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1. Do you drink alcohol?
    1 no   2 yes   3 yes, but current stop
2. How old were you when you had first drink?.………………………... years
3. How did you feel about your first drink? ……………………………...
4. How many drinking days do you have?………..days in the past………days
5. How many standard drinks (1standard drink = beer 330ml, wine 120ml, or spirit 30ml) per day…………………..standard drinks
6. What type of alcohol do you drink? ………………………………
7. How long have you been drinking?………………………………..years
8. What were the main reasons why you continue drinking………………
 ………………………………………………………………………….
9. What triggers your urge to drink?. ....
 ………………………………………………………………………….

10. Do your parents drink?
    1 none   2 both   3 father only
    4 mother only   5 don't know
11. Do you have problems from your alcohol drinking such as accident, violence, aggressiveness, and unemployment?
    1 no   2 yes, for instant……………………….
12. Do you have any health problem from your alcohol drinking such as gastritis, blackout, and hepatitis?
    1 no   2 yes, for instant……………………….
13. Have you ever tried to stop drinking?
    1 never   2 ever   3 ever but, not successful

Part 2: The Alcohol Use Disorders Identification Test (AUDIT).

Screening instrument: The Alcohol Use Disorders Identification Test (AUDIT).
Patient: Because alcohol use can affect your health and can interfere with certain medications and treatments, it is important that we ask some questions about your use of alcohol. Your answers will remain confidential, so please be honest.
Please an X in one box that best describes your answer to each question.

Questions	0	1	2	3	4
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week
2. How many drinks containing alcohol do you have on typical day when you are drinking?	1-1.5 cans	2-3 cans	3.5-4 cans	4.5-7 cans	7- can or more
3. How often do you have 4 or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
6. How often during the last year needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
8. How often during the last year have you been unable to remember what happened in the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
9. Have you or someone else been injured because of your drinking?	No	Yes, but not in the last year			Yes, during the last year

10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No	Yes, but not in the last year			Yes, during the last year

Total score…………………………..
1. Score 0-7: Low risk use
2. Score 8-12: Hazardous use
3. Score 13-19: Harmful use
4. Score $\geq$ 20: Dependence   (Babor, 2001)

Part 3 Quality of life

WHOQOL-BRIEF

Instructions
This assessment asks how you feel about your quality of life, health, or other areas of your life. Please answer all the questions. If you are unsure about which response to give to question, please choose the one that appears most appropriate. This can often be your first response. **Please read each question, assess your feelings, and circle the number on the scale for each question that gives the best answer for you.**

No		Very poor	poor	Neither poor nor good	Good	Very good
1	How would you rate your quality of life?	1	2	3	4	5

No		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2	How satisfied are you with your health?	1	2	3	4	5

No		Not at all	A little	A moderate amount	Very much	An extreme amount
3	To ward extent do you feel that physical pain prevents you from doing what you need to do?	1	2	3	4	5
4	How much do you need any medical treatment to function your daily life?	1	2	3	4	5
5	How much do you enjoy life?	1	2	3	4	5
6	To what extent do you feel your life to be meaningful?	1	2	3	4	5

No		Not at all	A little	A moderate amount	Very much	Extreme
7	How well are you able to concentrate?	1	2	3	4	5
8	How safe do you feel in your daily life?	1	2	3	4	5
9	How healthy is your physical environment?	1	2	3	4	5

No		Not at all	A little	Moderately	Mostly	Completely
10	Do you have enough energy for everyday life?	1	2	3	4	5
11	Are you able to accept your bodily appearance?	1	2	3	4	5
12	Have you enough money to meet your needs?	1	2	3	4	5
13	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

No		Very poor	poor	Neither poor nor good	Good	Very good
15	How well are you able to get around?	1	2	3	4	5

No		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16	How satisfied are you with your sleep?	1	2	3	4	5
17	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18	How satisfied are you with your capacity for work?	1	2	3	4	5
19	How satisfied are you with yourself?	1	2	3	4	5
20	How satisfied are you with your personal relationships?	1	2	3	4	5
21	How satisfied are you with your sex life?	1	2	3	4	5
22	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23	How satisfied are you with the conditions of your living place ?	1	2	3	4	5
24	How satisfied are you with your assess to health services?	1	2	3	4	5
25	How satisfied are you with your transport?	1	2	3	4	5

No		Never	Seldom	Quite often	Very often	Always
26	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	1	2	3	4	5

Domain	Equations for computing domain scores
1. Physical health	Q3+Q4+Q10+Q15+Q16+Q17+Q18
2. Psychological	Q5+Q6+Q7+Q11+Q19+Q26
3. Social relationships	Q20+Q21+Q22
4. Environment	Q8+Q9+Q12+Q13+Q14+Q23+Q24+Q25

Quality of life scores between 26-130

Domain	Dad quality of life	Moderate quality of life	Good quality of life
1. Physical health	7-16	17-26	27-35
2. Psychological	6-14	15-22	23-30
3. Social relationships	3-7	8-11	12-15
4. Environment	8-18	19-29	30-40

(WHO, 1996)

Part 4 The readiness to change alcohol drinking

Place 1. Hospital 2. Home 3. Telephone	Subject No ………./………..	Date (Day/Month/Year) ……………/……………/…………… Assess by................................

University of Rhode Island Change Assessment Scale-URICA

Please read the following statements carefully. For each statement, circle the number that best describes how much you agree or disagree with each statement.

Key: SD = No strongly Disagree D = No Disagree U = Undecided or Unsure A = Yes Agree SA = Yes Strongly Agree

No	Problem	SD	D	U	A	SA
1	As far as I'm concerned, I don't have any problems that need changing.	□ 1	□ 2	□ 3	□ 4	□ 5
2	I think I might be ready for some self-improvement.	□ 1	□ 2	□ 3	□ 4	□ 5
3	I'm doing something about the problems that had been bothering me.	□ 1	□ 2	□ 3	□ 4	□ 5
4	I might be worthwhile to work on my problem.	□ 1	□ 2	□ 3	□ 4	□ 5
5	I'm not the problem one. It doesn't make much sense for me to be here.	□ 1	□ 2	□ 3	□ 4	□ 5
6	It worries me that I might slip back on a problem I have already changed, so I am here to seek help.	□ 1	□ 2	□ 3	□ 4	□ 5
7	I'm finally doing some work on my problem.	□ 1	□ 2	□ 3	□ 4	□ 5
8	I've been thinking that I might want to change something about myself.	□ 1	□ 2	□ 3	□ 4	□ 5
9	I have been successful in working on my problem but I'm not sure I can keep up the effort on my own.	□ 1	□ 2	□ 3	□ 4	□ 5
10	At times my problem is difficult, but I'm working on it.	□ 1	□ 2	□ 3	□ 4	□ 5
11	Being here is pretty much a waste of time for me because the problem doesn't have to do with me.	□ 1	□ 2	□ 3	□ 4	□ 5
12	I'm hoping this place will help me to better understand myself.	□ 1	□ 2	□ 3	□ 4	□ 5
13	I guess I have faults, but there's nothing that I really need to change.	□ 1	□ 2	□ 3	□ 4	□ 5
14	I am really working hard to change.	□ 1	□ 2	□ 3	□ 4	□ 5
15	I have a problem and I really think I should work at it.	□ 1	□ 2	□ 3	□ 4	□ 5
16	I'm not following through with what I had already changed as well as I had hoped, and I 'm here to prevent a relapse of the problem.	□ 1	□ 2	□ 3	□ 4	□ 5
17	Even though I'm not always successful in changing, I'm at least working on my problem.	□ 1	□ 2	□ 3	□ 4	□ 5
18	I though once I had resolved my problem I would be free of it, but sometimes I still find myself struggling with it.	□ 1	□ 2	□ 3	□ 4	□ 5
19	I wish I had more idea on how to solve the problem.	□ 1	□ 2	□ 3	□ 4	□ 5
20	I have started working on my problems bur I would like help.	□ 1	□ 2	□ 3	□ 4	□ 5
21	May be this place will be able to help me.	□ 1	□ 2	□ 3	□ 4	□ 5
22	I may need a boost right now to help me maintain the change I've already made.	□ 1	□ 2	□ 3	□ 4	□ 5
23	I may be part of the problem, But I don't really think I am.	□ 1	□ 2	□ 3	□ 4	□ 5
24	I hope that someone here will have some good advice for me.	□ 1	□ 2	□ 3	□ 4	□ 5
25	Anyone can talk about changing; I'm actually doing something about it.	□ 1	□ 2	□ 3	□ 4	□ 5

N	Problem	SD	D	U	A	SA
26	All this talk about psychology is boring. Why can't people just forget about their problem?	□ 1	□ 2	□ 3	□ 4	□ 5
27	I'm here to prevent myself from having a relapse of my problem.	□ 1	□ 2	□ 3	□ 4	□ 5
28	It is frustrating, but I feel I might be having a recurrence of a problem I thought I had resolved.	□ 1	□ 2	□ 3	□ 4	□ 5
29	I have worries but so does the next guy. Why spend time thinking about them.	□ 1	□ 2	□ 3	□ 4	□ 5
30	I am actively working on my problem.	□ 1	□ 2	□ 3	□ 4	□ 5
31	I would rather cope with my faults than try to change them.	□ 1	□ 2	□ 3	□ 4	□ 5
32	After all I have done to try to change my problem, every now and again it comes back to haunt.	□ 1	□ 2	□ 3	□ 4	□ 5

URICA Scoring Form Transfer the patient's answers from questionnaire. Obtain the average score per subscale using the following grid.

1. Per-contemplation (PC) = 1, 5, 11, 13, 23, 26, 29, 31
2. Contemplation (C) = 2, 4, 8, 12, 15, 19, 21, 24
3. Action (A) = 3, 7, 10, 14, 17, 20, 25, 30
4. Maintenance (M) = 6, 9, 16, 18, 22, 27, 28, 32

Stage	Group Average
Per-contemplation (PC)	8 or lower
Contemplation (C)	8-11
Action (A)	11-14
Maintenance (M)	14 and above

Source: University of Maryland, health and Addictive Behaviors Lab, http://www.umbc.edu/psyc/habits/content/ttm_measures/urica/readiness.html

Part 5 Self-efficacy:
Situation that stimulate you alcohol drinking

Place	Subject No	Date (Day/Month/Year)
1. Hospital 2. Home 3. Telephone	………/………..	……………/……………/…………… Assess by......................................

Please read each question carefully before answering it. Choose the answer that best describes what you believe and feel to be correct.

No	Situation	Most	Many	Moderate	Few	Least
1	At a bar or cocktail lounge having a drink					
2	When I am craving drinking					
3	When I am frustrated about event in my life					
4	When with my spouse or a close friend who is alcohol drinking					
5	When there are arguments and conflicts with my family					
6	When I am happy and celebrating					
7	When I am very anger about something or someone					
8	When I would experience an emotional crisis such as an accidents or death in the family					
9	When I see someone drinking and enjoying it					
10	Over coffee while talking or relaxing					
11	When I realize that quitting drinking is an extremely difficult task for me					
12	When I desiring alcohol drinking					
13	When I first get up in the morning					
14	When I feel that needs encouragement					
15	When I begin to let down on my concern about my health and am less physical active					
16	When I am with friends at a party					
17	When I wake up in the morning and face a tough day					
18	When I am extremely depressed					
19	When I am extremely anxious and stressed					
20	When I realize I haven't alcohol for a while					

Level of stimulating situation

Most	5	Positive situation	item 1, 4, 6, 9, 10, 16
Many	4	Negative situation	item 3, 5, 7, 8, 17, 18, 19
Moderate	3	A craving for drinking	item 2, 11, 12, 13, 14, 15, 20
Few	2		
Least	1		

Source: Velicer, DiClemente, Prochaska (1990).

Appendix B

Protection of human subjects' rights

เอกสารชี้แจงข้อมูลแก่ผู้เข้าร่วมโครงการวิจัย

(Research Subject Information Sheet)

ชื่อโครงการวิจัย ผลของรูปแบบโรงพยาบาลพระมงกุฎเกล้าสำหรับผู้ป่วยในที่ติดสุรา

: ศึกษาผลลัพธ์เพื่อสร้างรูปแบบสำหรับผู้ป่วยนอก

วันที่ชี้แจง วันที่ .... เดือน....................................พ.ศ. ....

ชื่อและสถานที่ทำงานของผู้วิจัย: นางสาวลัดดาวัลย์ แดงเถิน

175/16 ถ.ศรีพานิช โรงพยาบาลแม่สอด อ. แม่สอด จ. ตาก

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ผู้วิจัยร่วม 1 พันเอกนายแพทย์พิชัย แสงชาญชัย

ผู้วิจัยร่วม 2 พันโทนายแพทย์เจษฎา ยิ่งวิวัฒนพงษ์

ผู้ให้ทุนวิจัย กองทุนแผนงานพัฒนาระบบ รูปแบบและวิธีการบำบัดรักษาผู้มีปัญหาการปริโภคสุรา แบบบูรณาการ (ผรส.)

ท่านได้รับการเชิญชวนให้เข้าร่วมในโครงการวิจัยนี้ แต่ก่อนที่ท่านจะตกลงใจเข้าร่วมหรือ ไม่ โปรดอ่านข้อความในเอกสารนี้ทั้งหมด เพื่อให้ทราบว่าเหตุใดท่านจึงได้รับเชิญให้เข้าร่วมใน โครงการวิจัยนี้ โครงการวิจัยนี้ทำเพื่ออะไร หากท่านเข้าร่วมโครงการวิจัยนี้ท่านจะต้องทำอะไร บ้าง รวมทั้งข้อดีและข้อเสียที่อาจจะเกิดขึ้นในระหว่างการวิจัย

ในเอกสารนี้ อาจมีข้อความที่ท่านอ่านแล้วแล้วยังไม่เข้าใจ โปรดสอบถามผู้วิจัยที่ทำ โครงการนี้เพื่อให้อธิบายจนกว่าท่านจะเข้าใจ ท่านจะได้รับเอกสารนี้ 1 ชุด เก็บไว้เป็นหลักฐานและ เพื่อการทบทวนรายละเอียดของโครงการต่อไป การเข้าร่วมโครงการวิจัยครั้ง นี้จะต้องเป็นความ สมัครใจของท่าน ไม่มีการบังคับหรือชักจูงถึงแม้ว่าท่านจะไม่เข้าร่วมในโครงการ วิจัย หรือถอนตัว ออกจากโครงการวิจัย จะไม่มีผลกระทบต่อการได้รับบริการหรือผล ประโยชน์ที่พึงจะได้รับของ ท่านแต่อย่างใด

โปรดอย่าลงลายมือชื่อของท่านในเอกสารนี้จนกว่าท่านจะแน่ใจว่ามีความประสงค์จะเข้า ร่วมในโครงการวิจัยนี้ คำว่า "ท่าน" ในเอกสารนี้ หมายถึงผู้เข้าร่วมโครงการวิจัยในฐานะเป็น อาสาสมัครในโครงการวิจัยนี้

โครงการวิจัยนี้มีที่มาอย่างไร และวัตถุประสงค์ของโครงการวิจัย

การดื่มสุราเป็นพฤติกรรมที่อยู่คู่กับมนุษย์มาช้านานเกี่ยวกับวิถีชีวิต ประเพณี ธรรมเนียม ปฏิบัติ รวมไปถึงศาสนา ในบางครั้งการดื่มสุราก่อให้เกิดผลทางบวก เช่น ดื่มแล้วมีความสุข มี สังคม แต่ในขณะเดียวกันก็เกิดผลเสียทั้งต่อตนเอง เช่น อุบัติเหตุ ความเจ็บป่วยด้วยโรคต่ าง ๆ และ ผลเสียต่อคนอื่น เช่น ความรุนแรงในครอบครัว อันตรายบาดเจ็บต่อผู้อื่น เป็นต้น ผลที่ตามมาจาก การดื่มแอลกอฮอล์นั้น ไม่เพียงแต่ขึ้นอยู่กับปริมาณแอลกอฮอล์ที่ดื่มแต่ยังขึ้นกับรูปแบบการดื่มหรือ พฤติกรรมการดื่ม โรงพยาบาลพระมงกุฎเกล้าได้เห็นความสำคัญในการบำบัดร กษาผู้ป่วยติดสุราจึง มีการพัฒนารูปแบบการรักษา โดยอิงรูปแบบการบำบัดที่เก่าแก่ของประเทศสหรัฐอเมริกา คือ รูปแบบมินเนโซต้า (Minnesota model) หรือ โปรแกรม 28 วัน และใช้แนวทางของหลัก 12 ขั้นตอนในการฟื้นฟูสมรรถภาพของผู้ป่วย โดยแนวทางการรักษาภายหลังจากการถอนพิษ แอลกอฮอล์และสารเสพติดเรียบร้อยแล้ว มุ่งเน้นกระบวนการคิดและการเปลี่ยนแปลงพฤติกรรม รวมทั้งการบำบัดทางจิตสังคมตามความเหมาะสมของปัญหาของผู้ป่วยโดยใช้การบำบัดเพื่อการ ปรับเปลี่ยนแนวคิดและพฤติกรรมการบำบัดแบบจิตประคับประคอง กลุ่มบันได 12 ขั้นตอนเชิง พุทธ การนำครอบคร วเข้ามามีส่วนร่วมในการรักษาโดยการวางแผนการรักษาร่วมกับทีมสหสาขา วิชาชีพและการให้สุขศึกษาแก่ผู้ป่วย และให้สุขศึกษาครอบครัว ผู้ป่วยจะได้รับกิจกรรมและการ ดูแลตามแผนการบำบัดรักษาตั้งแต่เข้ารับการบำบัดรักษาจนครบโปรแกรมจนถึงระยะการติดตาม ประเมินผลการบำบัดรักษา โปรแ กรมการบำบัดรักษาผู้ป่วยติดสุราแบบผู้ป่วยใน ใช้เวลา 28 วัน แบ่งเป็น 3 ระยะ คือ ระยะที่ 1 การบำบัดด้วยยาใช้เวลา 5-7 วันเป็นการรักษาภาวะขาดสุราและ อาการแทรกซ้อนอื่นๆ ส่วนระยะที่ 2 เป็นการบำบัดทางจิตสังคมเพื่อการปรับเปลี่ยนพฤติกรรม และสร้างแรงจูงใจในการหยุดดื่มสุรา และระยะที่ 3 ติดตามผลการบำบัดรักษาเป็นระยะเวลา 6 เดือน ทางผู้วิจัย และคณะได้เห็นประโยชน์ของการใช้รูปแบบโรงพยาบาลพระมงกุฎเกล้าจึงได้ ดำเนินการศึกษาทดลองวัดประสิทธิภาพของการดำเนินการเพื่อพัฒนาปรับปรุงเป็นรูปแบบใหม่ เพิ่มศักยภาพในการให้บริการและขยายผลนำไปใช้ในการให้บริการผู้เข้าบำบัดรักษาฟื้นฟูผู้ที่ ประสบปัญหาจากการดื่มแอลกอฮอล์แบบผู้ป่วยนอกต่อไป

วัตถุประสงค์

1. การศึกษาครั้งนี้เป็นการวัดประสิทธิภาพของรูปแบบโรงพยาบาลพระมงกุฎเกล้าที่ใช้ บำบัดรักษาผู้ป่วยติดสุราที่เข้ารับการบำบัดรักษาแบบผู้ป่วยในจนครบโปรแกรม (28 วัน) และติดตามประเมินผลหลังจบโปรแกรม 6 เดือน

2 เพื่อวัดผลของรูปแบบโรงพยาบาลพระมงกุฎเกล้าที่ผู้ป่วยติดสุราสามารถลดหรือ หยุดดื่มสุรา ได้นาน 1 เดือน 3 เดือน และ 6 เดือน หลังบำบัดครบโปรแกรม

3   เพื่อวัดความรู้ แรงจูงใจ การรับรู้ความสามารถในตนเอง รวมทั้งวัดคุณภาพชีวิ   ตของผู้ป่วยติด
สุราหลังบำบัดครบโปรแกรม 3 เดือน และ 6 เดือน

ท่านได้รับเชิญเข้าร่วมโครงการวิจัยนี้เพราะท่านมีคุณสมบัติที่เหมาะสมดังต่อไปนี้

1. ผู้ที่มีอายุระหว่าง 18 ปีขึ้นไป เพศชาย หรือหญิงที่เข้ารับบริการบำบัดรักษาในหอผู้ป่วย
จิตเวชและยาเสพติดและได้รับการวินิจฉัยว่าเป็นผู้ที่ประสบปัญหาจากการดื่มสุรา โดยจิตแพทย์
ผู้เชี่ยวชาญและเข้ารับการฟื้นฟูครบ 28 วัน

2. เป็นผู้ที่ยินยอมเข้าร่วมโครงการวิจัย

ท่านไม่สามารถเข้าร่วมโครงการวิจัยได้หากท่านมีคุณสมบัติดังต่อไปนี้

1. ผู้ที่ไม่ยินยอมเข้าร่วมโครงการวิจัย

2. เป็นผู้มีภาวะโรคทางกายและจิตประสาทอื่นๆที่กำลังรับการบำบัดรักษา ทั้งที่เกิดจาก
การดื่มสุราหรือไม่ก็ตาม

3. เป็นผู้ที่มีภาวะเสพติดยา หรือสารเสพติดชนิดอื่นๆ ยกเว้น บุหรี่

จะมีการทำโครงการวิจัยนี้ที่ใด และมีจำนวนผู้ที่จะเข้าร่วมโครงการวิจัยนี้ทั้งสิ้นเท่าใด

การวิจัยจะดำเนินการที่หอผู้ป่วยจิตเวชและยาเสพติด (ห้องทำกลุ่ม PMK 8/1) โดยจะมี
ผู้เข้าร่วมโครงการ ประมาณ 140 คนเข้าร่วมกลุ่ม 70 คน และ ไม่เข้ากลุ่ม   70 คน

ระยะเวลาที่ท่านจะต้องร่วมโครงการวิจัยนี้และจำนวนครั้งที่นัด

โครงการวิจัยนี้เป็นการฟื้นฟูโดยใช้รูปแบบโรงพยาบาลพระมงกุฎเกล้า 28 วันผู้เข้าร่วม
โครงการต้องพักรักษาในโรงพยาบาลจนสิ้นสุดการรักษาและฟื้นฟูโดยประมาณ 28-40 วันเก็บ
ข้อมูลด้วยการทำแบบสอบถาม จำนวน 4 ครั้งนัดติดตามที่คลินิกจิตเวชหรือติดตามเยี่ยมบ้านหรือ
อาจมีการใช้โทรศัพท์ติดต่อสอบถาม จำนวน 3 ครั้ง

หากท่านเข้าร่วมโครงการวิจัยนี้ ท่านต้องปฏิบัติตามขั้นตอนหรือได้รับการปฏิบัติอย่างไรบ้าง

เมื่อได้รับแบบสอบถามซึ่งจะมีหนังสือชี้แจงการเข้าร่วมโครงการแล้ว ท่านจะมีโอกาสได้
ตัดสินใจอย่างอิสระ การตัดสินใจเข้าร่วมหรือไม่เข้าร่วมจะไม่ส่งผลกระทบใดๆ ทั้งสิ้นต่อการ
บำบัดรักษา ผู้ที่ตัดสินใจเข้าร่วมโครงการอย่างสมัครใจจะได้รับแบบสอบถามประเมินตนเอง
เอกสารชี้แจงข้อมูลของโครงการ และหนังสือแสดงเจตนายินยอมเข้าร่วมการวิจัย ผู้เข้าร่วม

โครงการฯ ต้องลงชื่อในหนังสือแสดงเจตนายินยอมเข้าร่วมการวิจัยทั้ง 2 ชุดแล้วส่งคืนผู้วิจัย1 ชุด
ก่อนจะลงมือทำแบบสอบถาม ซึ่งแบบสอบถามจะมีเนื้อหาเกี่ยวกับข้อมูลส่วนบุคคล แบบแผนและ
ผลกระทบจากการดื่มแอลกอฮอล์ 30 ข้อ แบบวัดคุณภาพชีวิตชุดย่อ 26 ข้อ แบบสอบถามความรู้
เกี่ยวกับแอลกอฮอล์ 15 ข้อ แรงจูงใจในการเลิกแอลกอฮอล์ 32 ข้อ และแบบสอบถามการรับรู้
ความสามารถตนเองในการลดหรือเลิกดื่มแอลกอฮอล์ 27 ข้อ

**ความไม่สุขสบาย หรือความเสี่ยงต่ออันตรายที่อาจจะได้รับจากกรรมวิธีการวิจัยมีอะไรบ้าง และ
วิธีการป้องกัน/แก้ไขที่ผู้วิจัยเตรียมไว้หากมีเหตุการณ์ดังกล่าวเกิดขึ้น**

      การวิจัยในครั้งนี้จะมีการขอความร่วมมือจากท่านในการเข้าร่วมฟื้นฟูต่อจากการ
บำบัดรักษาถอนพิษสุราแล้วเป็นเวลา 28 วันโดยจัดให้มีกิจกรรมกลุ่มตามรูปแบบโรงพยาบาลพระ
มงกุฎเกล้า (PMK model) ซึ่งผู้เข้าร่วมโครงการจะได้รับคำอธิบายอย่างชัดเจนถึงขั้นตอนต่างๆ ใน
การดำเนินการและมีการตอบแบบสอบถามที่มีความยาวประมาณ 15 นาที จำนวน 1 ครั้ง รวมตอบ
แบบสอบถามในขณะติดตามอีก 3 ครั้ง ทั้งหมด 4 ครั้ง เราไม่คาดว่าจะมีผลกระทบใดๆต่อร่างกาย
จากการศึกษาแบบการจัดกิจกรรมกลุ่มขณะพักรักษาตัวอยู่ในโรงพยาบาลในครั้งนี้ ข้อคำถามที่อาจ
มีความละเอียดอ่อนโดยเฉพาะอย่างยิ่งเกี่ยวกับข้อมูลส่วนตัว ซึ่งอาจทำให้ผู้เข้าร่วมโครงการฯ เกิด
ความไม่สบายใจและอาจต้องรำลึกย้อนหลังไปสู่ภาวะความทุกข์ของอารมณ์ ผู้เข้าร่วมโครงการฯ
จะได้รับโอกาสที่จะไม่ตอบคำถามใดๆ ที่ไม่ต้องการตอบ ได้อย่างอิสระ ซึ่งผู้ดำเนินการวิจัยจะ
ระมัดระวังในการรักษาความลับเรื่องนี้อย่างที่สุดในทุกๆ ขั้นตอน

ประโยชน์ที่คาดว่าจะได้รับ

      การดำเนินการในครั้งนี้จะเกิดผลประโยชน์อย่างยิ่งโดยตรงต่อโรงพยาบาลพระมงกุฎเกล้า
ที่ได้มีบทบาทในการพัฒนารูปแบบในการฟื้นฟูสภาพของผู้ติดแอลกอฮอล์ ซึ่งจะช่วยเพิ่ม
ประสิทธิภาพในการบำบัดรักษาในการบำบัดผู้ติดสุราในโรงพยาบาลพร้อมทั้งนำไปใช้ประโยชน์
ในสถานบริการทางสาธารณสุขอื่นๆ ต่อไปได้เป็นอย่างดี

ค่าใช้จ่ายในการเข้าร่วมโครงการวิจัยที่ต้องรับผิดชอบ (ถ้ามี)

      ท่านไม่ต้องเสียค่าใช้จ่ายใดๆ ทั้งสิ้น

ค่าตอบแทนที่จะได้รับเมื่อเข้าร่วมโครงการวิจัย

      ท่านจะได้รับค่าตอบแทนในการมาพบแพทย์ที่โรงพยาบาลตามนัดครั้งละ 200 บาท

หากท่านไม่เข้าร่วมโครงการนี้ ท่านมีทางเลือกอื่นอย่างไรบ้าง

การตัดสินใจไม่เข้าร่วมโครงการจะไม่มีผลกระทบใดๆ ต่อท่านรวมทั้งการให้การบำบัดรักษา

หากท่านมีคำถามที่เกี่ยวข้องกับโครงการวิจัย จะถามใคร

ท่านสามารถติดต่อกับเจ้าหน้าที่โครงการตามที่ระบุนี้เพื่อสอบถามรายละเอียดเกี่ยวกับโครงการ

นางสาวลัดดาวัลย์ แดงเถิน วิทยาลัยวิทยาศาสตร์สาธารณสุข

จุฬาลงกรณ์มหาวิทยาลัย ถนนพญาไท จุฬา 62 เขตปทุมวัน กรุงเทพมหานคร 10300

โทรศัพท์ 02-218-8193   โทรสาร 02-251-7041

โทรศัพท์นอกเวลาราชการ 081-888-2843

หากท่านรู้สึกว่าได้รับการปฏิบัติอย่างไม่เป็นธรรมในระหว่างโครงการวิจัยนี้ ท่านอาจแจ้งเรื่องได้ที่
สำนักงานพิจารณาโครงการวิจัย กรมแพทย์ทหารบก หมายเลขโทรศัพท์ 0 2354 7600 ต่อ 94270

ข้อมูลส่วนตัวของท่านที่ได้จากโครงการวิจัยครั้งนี้จะถูกนำไปใช้ดังนี้

ข้อมูลส่วนตัวของท่านถูกเก็บไว้เป็นความลับ และจะนำไปวิเคราะห์ตามวัตถุประสงค์ที่วางไว้ การเผยแพร่การวิจัยจะกระทำโดยผลการวิจัยส่วนรวมไม่ระบุข้อมูลที่มีรายชื่อของท่านแต่อย่างใด

ท่านจะถอนตัวหลังจากโครงการวิจัยหลังจากได้ลงนามเข้าร่วมโครงการวิจัยแล้วหรือไม่

ผู้เข้าร่วมโครงการวิจัยสามารถถอนตัวจากโครงการวิจัยได้ตลอดเวลา โดยจะไม่มีผลเสียใดๆ เกิดขึ้น

หนังสือแสดงเจตนายินยอมเข้าร่วมการวิจัย (Informed Consent)

ชื่อโครงการวิจัย ผลของรูปแบบโรงพยาบาลพระมงกุฎเกล้าสำหรับผู้ป่วยในที่ติดสุรา
: ศึกษาผลลัพธ์เพื่อสร้างรูปแบบสำหรับผู้ป่วยนอก

วันที่ลงนาม..
ก่อนที่จะลงนามในใบยินยอมให้ทำการวิจัยนี้   ข้าพเจ้าได้รับการอธิบายจากผู้วิจัยถึง
วัตถุประสงค์ของการวิจัยวิธีการวิจัย   รวมทั้งประโยชน์ที่คาดว่าจะเกิดขึ้นจากการวิจัยอย่างละเอียด
และมีความเข้าใจดีแล้ว
ผู้วิจัยรับรองว่าจะตอบคำถามที่ข้าพเจ้าสงสัยด้วยความเต็มใจและ ไม่ปิดบังซ่อนเร้น   จน
ข้าพเจ้าพอใจ
ข้าพเจ้าเข้าร่วมในโครงการวิจัยนี้ด้วยความสมัครใจโดยปราศจากการบังคับหรือชักจูง
ข้าพเจ้ามีสิทธิที่จะบอกเลิกการเข้าร่วมในโครงการวิจัยเมื่อใดก็ได้ และการบอกเลิก
นี้จะไม่มีผลต่อการรักษาพยาบาลที่ข้าพเจ้าจะพึงได้รับในปัจจุบันและในอนาคต
ผู้วิจัยรับรองว่าจะเก็บข้อมูลเกี่ยวกับตัวข้าพเจ้าเป็นความลับ   และจะเปิดเผยเฉพาะในรูป
ของสรุปผลการวิจัยโดยไม่มีการระบุชื่อนามสกุลของข้าพเจ้า การเปิดเผยข้อมูลเกี่ยวกับตัวข้าพเจ้าต่อ
หน่วยงานต่าง ๆ ที่เกี่ยวข้องจะกระทำด้วยเหตุผลทางวิชาการเท่านั้น
ข้าพเจ้าจะได้รับเอกสารชี้แจงและหนังสือยินยอมที่มีข้อความเดียวกันกับที่นักวิจัยเก็บไว้
เป็นส่วนตัวข้าพเจ้าเอง 1 ชุด
ข้าพเจ้าได้รับทราบข้อความข้างต้นแล้ว   มีความเข้าใจดีทุกประการ   และลงนามในใบ
ยินยอมด้วยความเต็มใจ

         ลงชื่อ...ผู้เข้าร่วมโครงการวิจัย

           (..)

         ลงชื่อ .... ผู้ดำเนินโครงการวิจัย

           (..)

         ลงชื่อ...พยาน

           (..)

         ลงชื่อ...พยาน

           (..)

Appendix C

List of Expertises

LIST OF EXPERTSES

1. Assistant Professor Apinun Aramrattana, M.D., Ph.D.

   Faculty of Medicine, Chiang Mai University, Thailand

2. Phunnapa Kittirattanapaiboon, M.D.

   Integrated Management of Alcohol Intervention Program (I-MAP)

   Muang District, Chiang Mai Province, Thailand

3. Professor Manit Srisuraphanoon, M.D., Ph.D.

   Department of Psychiatry, Faculty of Medicine, Chiang Mai University

BIOGRAPHY

Name	Miss Laddawan Daengthoen
Place of birth	Tak
Affiliation and position	Head nurse
	Psychiatry and drug addict treatment ward
	Mae Sot General Hospital
	175/16 Sriphanich Road Mae Sot district
	Tak Province, Thailand
2008	Master of nursing administration
	Sukhothai Thammathirat
	Open University, Thailand
1995	Bachelor of Communication of Arts
	Sukhothai Thammathirat
	Open University, Thailand
1987	Diploma in Nursing and Midwifery
	College of Nursing Buddhachinnarat
	Boromarajonani Phitsanulok, Thailnad