OUTCOME TO THE NEW OUTPATIENT TREATMENT PROGRAM ON ALCOHOL DEPENDENCE: A PILOT STUDY

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ABSTRACT: The study aimed to assess the new outpatient treatment program that could help alcohol-dependent patients to reduce or abstain from their alcohol consumption. The experiment was carried out during October 2011 to May 2012 at Mae Sot General Hospital in Tak province, Thailand. Methods: A randomized controlled trial was assigned into the new outpatient treatment program (n=30) or control group (n=31). Using the 4th Diagnostic and Statistical manual of Mental Disorder (DSM-IV) to diagnose alcohol-dependence and the Alcohol Use Disorder Identification Test (AUDIT) to determine the level of alcohol addiction assessed sixty-one alcohol-dependent patients. Questionnaire was used to collect personal data relating to drinking behavior Results: The early findings indicated that the subjects have 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). The dropout rate was approximately 16%. The follow-ups at 1, 2, and 3 months revealed that the patients in the alcohol outpatient program could reduce and abstain the amount of drinking to a greater extent than those in the control group at 3 months follow-up (*p-value* < 0.05). Conclusion: The alcohol outpatient program 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, a chronic illness requiring continual help.

Keywords: Pilot study, the new outpatient treatment program, alcohol dependence

INTRODUCTION

Alcohol consumption is a critical cause to many problems worldwide. World Health Organization (WHO) [1] reported that 1.5% of global mortality, 3.2% of global morbidity and 6% of total global life year lost have been attributed alcohol consumption. In the United States, heavy drinking contributed to almost 80,000 deaths a year between 2001 and 2005 [2]. Similarly in Thailand, Ministry of Public Health presented that Thai people died from liver disease and chronic cirrhosis, rising from 4.3 per 100,000 people in 1979 to 13.2 per 100,000 people in 2006 [3, 4]. In Thailand, various methods have been employed to solve alcohol dependence problems, including Phukao [5] carried out Buddhist-Motivational interviewing-Cognitive behavior therapy (BUMICBT); Noknoy [6] conducted about Motivational Enhancement Therapy (MET) and Saengduenchai [7] used Cognitive Behavior Therapy (CBT) and social support, but showing different results.

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Furthermore there is the intensive rehabilitation program, Phramongkutklao (PMK) Model that has been implemented at Phramongkutklao Hospital since 2003, its strengths and weaknesses were analyzed previously. 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 emphases on the Twelve Steps Buddhist, and CBT. This inpatient rehabilitation program required the patients admitted to the hospital for 28 days; thus resulting in a low dropout rate (1.7%). The results indicated that the PMK Model could significantly help the patients to reduce their alcohol consumption was 76% while abstinent days was 66%, and survival rate was 47% at the follow-up at 6 months. Their quality of life also showed significant improvement. During the program, several effective activities were carried out such as the Motivational interviewing (MI) and the MET as well as the meetings between the therapists that held twice a month to improve the program and solve problems that arose [8].

In terms of weaknesses, the program required the

patients admitted to 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, thus these required 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.

Mae Sot General Hospital, one of the general hospitals with a psychiatric unit and a drug addiction treatment unit, opened a ward with 10 beds to treat psychiatric patients and drug addicts in 2003. The majority of the patients were alcohol dependence. Due to the limited number beds as well as medical professionals at that time, the PMK model or 28-day model, the effective inpatient program of Phramongkutklao hospital is adapted to implement for out-patients at Mae Sot General Hospital. The study was to assess the outcomes of the new outpatient treatment program could help alcohol-dependent patients to reduce and abstain from alcohol consumption.

MATERIALS AND METHODS

The experiment was conducted during October 2011 to May 2012 at Mae Sot General Hospital in Tak province, Thailand. A randomized controlled trial was assigned into the new outpatient treatment program, alcohol-outpatient program, (n=30) or control group (n=31). Using the 4th Diagnostic and Statistical manual of Mental Disorder (DSM-IV) to diagnose alcohol-dependence and the Alcohol Use Disorder Identification Test (AUDIT) to determine the level of alcohol addiction assessed sixty-one alcohol-dependent patients. The alcohol detoxification sessions were provided before participating in the alcohol outpatient program. The randomized controlled group received health education leaflets and brief counseling after their alcohol detoxification completion. Then the 3 follow-ups with the researcher for data collection were appointed in the first, second and third month. Alcohol-drinking behaviors were appraised by researcher's survey. The effectiveness of the program was evaluated using 2 sets of survey questionnaires: 1) a questionnaire to collect personal data including drinking behavior, 2) a quality of life questionnaire. 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, 09/03/2011 - 08/03/2013). After being informed an introduction and objective to this study, every participant signed a consent form.

Intervention

The new outpatient treatment program for alcohol-dependent patients was adapted from the Phramongkutklao intensive inpatient rehabilitation program (abbreviated the PMK model) for inpatients, or the 28-day model. A program for patients after complete alcohol detoxification, the new outpatient treatment focuses on the thinking process and behavioral change, including educating and rehabilitating addicts to enhance their motivation as appropriate for their stage of change. Inclusion criteria required patients that were voluntary, able to attend rehabilitation group without serious current physical and mental problems. 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.

The new outpatient treatment program 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 8-10 patients using group dynamic to enable learning as well as thought and behavioral change or in the form of a conjoint session participating by the patient, family members or the people with whom they had a close relationship. These people supported the patients and involved in planning, collecting data, learning, and playing a part in rehabilitating the patients. The contents of the new outpatient treatment program were as follows:

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

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

Good-self and value development is consisted of seventh activity, a group session on spiritual disease, eighth activity, a group session on the Buddhist Twelve Steps, ninth activity, a group session on self-development of Buddhist, and tenth activity, a group session on health for good health.

Family support and relapse prevention provided eleventh activity, a conjoint session on the roles of family and problem solving and twelfth activity, a conjoint session on relapse prevention.

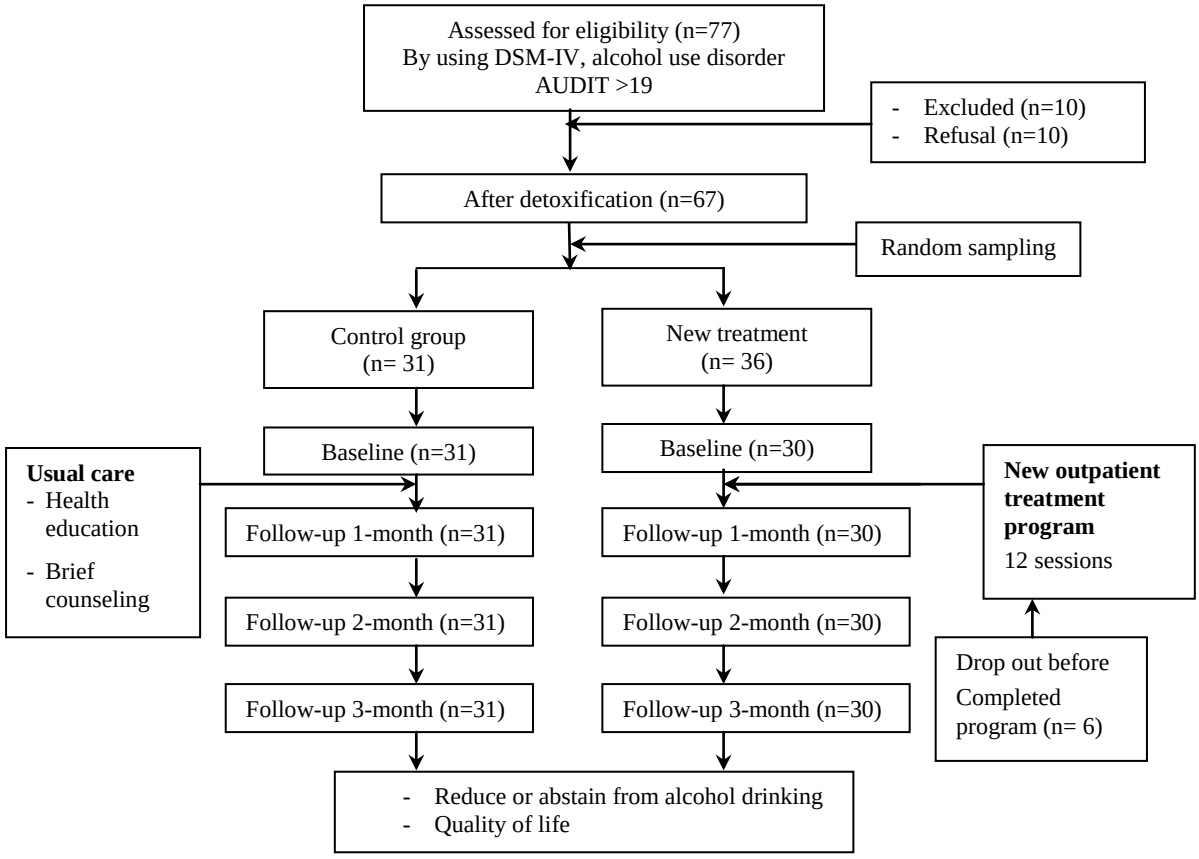

Figure 1 Framework of the trial (New outpatient treatment program)

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 3 appointments with the researcher in the first, second and third month respectively for follow-up data collection. In addition, questionnaires were utilized to ascertain alcohol drinking behavior and quality of life throughout follow-up.

Measures

Demographic and socioeconomic data 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 using a questionnaire developed by the researcher to measure cumulative alcohol consumption, type of alcohol drinking and pattern of drinking. A screening test was assessed using The Alcohol Use Disorders Identification Test (AUDIT) to identify whether the patients have hazardous drinking, harmful drinking or alcohol dependence. This questionnaire consists of 10 items.

The Quality of life (WHOQOL-BREF-THAI) was examined through 26 items, based on WHO standard adapted by Mahautnirunkul [9] pertaining to 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.

Data analysis

The intent-to-treat analysis was applied in this study while using SPSS version 17.0 for Windows for statistical evaluation. The comparison of patients in the treatment group or control group between baseline characteristic and follow-up outcomes was analyzed using chi-square tests for dichotomous variables and t-test for continuous variables. Repeated measures general linear model was used to quantify the overall change effect (for both groups) and the test of difference in rates of change for the group (at baseline and at 1, 2, and 3 months). Data also were tested for normal distribution.

RESULTS

Out of the 77 patients who were assessed for eligibility, and according to DSM-IV and AUDIT scores were alcohol dependence. Excluded were 16 patients because of refusal (n=10) and dropout before completing the new outpatient treatment program (n=6). A total of 61 alcohol-dependent patients in this study using the Consolidated Standards of Reporting

Table 1 Comparison baseline of drinking history between new treatment program and control group

Variables	New treatment program (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/month)(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 (gram)(M,SD)	133(73.7)		166.5(91.2)		.122
(range of quantity)	(47-332)		(26-442)		
Frequency of drinking					.755
Daily drinking	4	13.3	6	19.4	
Almost daily drinking	19	63.3	17	54.8	
3-4 days/week	7	23.4	8	25.8	
AUDIT Score (M,SD)	27.2(4.3)		28.7(4.6)		.192
(range of AUDIT score)	(20-39)		(20-37)		

Table 2 Comparison of alcohol consumption among alcohol dependence completed follow-ups in both groups (New treatment and control) by Repeated Measure General Linear Model

		Type III sum of squares	df	Mean square	F	*p-value*
Quantity of drinking	**Sphericity Assumed**	**397506.127**	**3**	**132502.042**	**23.960**	**.000**

a Exact statistic

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

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

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

Trial (CONSORT) guidelines for reporting randomized trial shown in Figure 1.

Regarding demographic and socioeconomic, the new outpatient treatment 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 employee (36.7% and 25.8%, respectively), followed by agricultures (20.0% and 35.5%, respectively), while the minority was jobless (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).

According to Table 1, the new outpatient treatment group and the control group started drinking at the same age, 20 years. The patients in both groups had drunk alcohol for 24 and 27 years, respectively. The two groups were found to drink the types of alcoholic beverages, namely white spirit (46.7% and 61.3%, respectively) followed illegal spirit (23.3% and 16.1%, respectively). With respect to the amount of drinking, the new treatment 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. The majority of the patients were found to drink almost every day or more often than 4 days per week (63.3% and 54.8%, respectively). The AUDIT scores were as high as 27.2

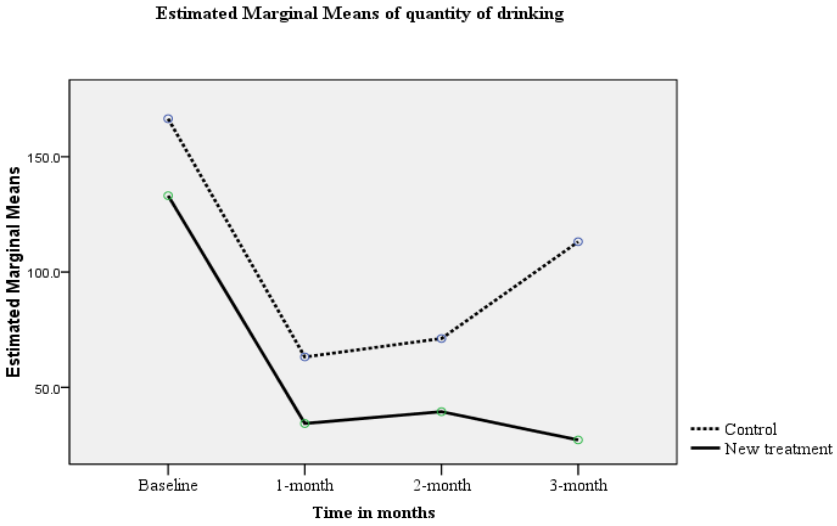

Figure 2 Means of quantity of drinking at baseline and completed follow-ups graph

Table 3 Comparison of quality of life among alcohol dependence completed follow-up in both groups (New treatment 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

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

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

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

and 28.7, respectively, indicating alcohol dependence. Table 2 shows the results from the Sphericity test. It was found that the *p-value* less than .001, meaning that the average quantities of drinking during the 3 follow-ups after the completion of the program were different within each group (within-subjects effects). Figure 2 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* < .001). Specifically, the patients in the new treatment were found decrease in alcohol consumption more than those of the control group. Furthermore, the average quantities of drinking were found 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 3 demonstrates the results from the Wilks' lambda test. The *p-value* stood at .009. When considered in conjunction with Figure 3, 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 new treatment group and the control group was compared at baseline

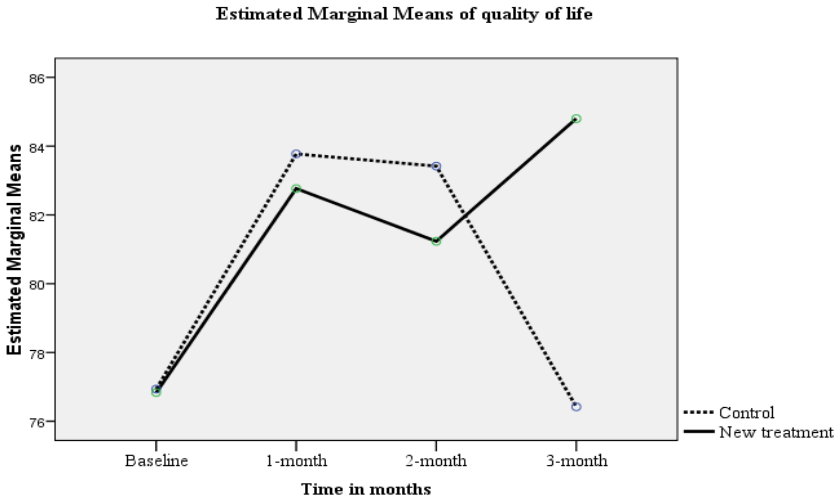

Figure 3 Means of quality of life at baseline and completed follow-ups graph

and 1 and 2-month after the completion of the program, no differences were found. In contrast, at 3-month, the New treatment 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 treatment group changed significantly over time (df= 1, mean square= 24.638, F= 0.282, *p-value* = .597).

DISCUSSION

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 have had drinking problems for a long period of time. They were all diagnosed with alcohol dependence based on the AUDIT scores (27-29 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 outpatient treatment program. 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 outpatient treatment program could reduce the amount of drinking to a greater extent than those in the control group at month 3 follow-up. This result was consistent with that of Saengduenchai [7] and Noknoy [6].

With regards to group processes, motivation enhancement must be carried out [10]. 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 [11], express their opinions appropriately, exchange ideas for solving problems, and enhance their confidence and perception of the ability to stop drinking [12]. It is clear that these components have been integrated in the new treatment program 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.

With respect to their quality of life, the patients in the new treatment program started to change their behavior, i.e. drank less or stopped drinking, at month 3 follow-up. In other words, their physical health and mental health were likely to get better. However, the social and environmental aspects quality of life did not change significantly between the two groups. The results support the research studies of Phukao [5], Suwit [4], and WHO [1], 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. [13] found that alcohol-dependent patients frequently suffered psychiatric illnesses such as depression and anxiety and thus were prone to committing suicide. According to Seangcharnchai et al. [14], 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 [14].

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 [15-17]. Therefore, during a recovery period, continual follow-ups such as home visits, telephone contacts [18], and motivation enhancement by family members and caretakers will likely help to prolong the patients' behavioral change. Similarly Margarate et al. [19] and Tayayutt [20] suggested that family members and health professionals play an important role in helping patients to abstain from drinking for a longer period of time. Moreover, networking with the community for further care as well as creation of the understanding in an illness progression can make the better results of a rehabilitation program. Instead of being blamed, patients should be encouraged and motivated to stop drinking again.

However, as the duration of the program was quite short and the sample size was small, a follow-up study should be conducted. The manual used in the research was developed and applied for the first time. Thus, further evaluation and improvement should be carried out to ensure its effectiveness. For instance, the subjects in the present study did not include female patients as a results, the generalizability of the findings seems to be limited for this group of population, which required further research. The new outpatient treatment program should also be evaluated in terms of efficiency, feasibility, cost effective, and service management. 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 Hospital, Tak province.

In conclusion, the new outpatient treatment program 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, a chronic illness requiring continual help. Furthermore, the alcohol outpatient model can be adapted in other public health agencies, taking the characteristics of the population and service area into consideration.

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