Effect of "Tailored Goal Oriented Community Brief Intervention Model" on AUDIT Reduction in Thai Communities

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Objective: *The present study aimed to test the result of Tailored Goal oriented Community Brief Intervention Model (TGCBI) the change of Alcohol Use Disorder Identification Test (AUDIT) scores.*
Material and Method: *A quasi-experimental research comparing between two high drinking prevalence communities in Lop Buri Province, Thailand, an intervention group with TGCBI Model, and a control group without TGCBI. The TGCBI is a treatment that lies on three components. Firstly, the TGCBI based on FRAMES consisting of Feedback, Responsibility, Advice, Menu of Option, Empathy, and Self-Efficacy. Secondly, drinkers must voluntarily set-up their goal and drinking reduction design suitable for them and their community. Lastly, key informants such as monks, health personnel, family, and friends can be a source to complete the FRAMES.*
Measurement: *Measurements are done using AUDIT scores.*
Results: *Fifty subjects in control and forty-seven in intervention drinkers completing 1, 3, and 6 monthly intervals were followed-up. The follow-up of the change of AUDIT score after 1,3, and 6 months of TGCBI in the two communities showed that intervention community, with TGCBI had a decrease in AUDIT score when compared within its community and with a controlled community.*
Conclusion: *The results proved TGCBI model is effective in AUDIT reduction.*

Keywords: *Effect, Intervention, Model, Community, TGCBI, AUDIT, Thai*

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The World Health Organization (WHO) reported that Thailand was ranked 40 in substance abuse in the world[1]. The national household survey in 2007 averaging the population related to substance abuse, alcohol beverages, and the alcohol consumption in the past one year and the past 30 days (by Administrative Committee of Substance Abuse Academic Network, ACSAN), found that 13.23 million (28.4%) drank alcohol during the past year, and 10.54 million (22.7%) drank in the past 30 days. Among 13.23 million drinkers during the past 1 year classified by AUDIT score, about 2.79 million (22.7%) were regarded as hazardous drinkers, 0.39 million as harmful drinkers (3.1%), and about 0.23 million (1.9%) as alcohol dependents[2]. Between 1992 and 1996, the College of Public Health, Institute of Health Research and Social Institute, Chulalongkorn University studied the alcohol consumption behavior in Lop Buri Province and found that the highest consumption of each type, 30 days prior to the interview was 15.73% and 12.52% respectively[3].

Brief Intervention (BI) takes up a short time, involves simple processes, and is cost-effective. The important goal is to prevent the escalation of

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alcohol-related problems and the transition to dependence. The elements of BI have been synthesized into the FRAMES[4,5] acronym. Alcohol Use Disorder Identification Test (AUDIT)[6,7] is a standard questionnaire consisting of 10 questions giving scores to provide levels of hazardous and harmful alcohol use for men and women. It covers three domains, alcohol consumption, drinking behavior, and alcohol-related problems. It is designed to identify hazardous drinkers whose level of drinking places them at risk for developing problems. Furthermore, many international systematic reviews of studies have supported the efficacy of BI. In Thailand, there are a few studies of BI, and they are implemented in the primary care settings in hospitals. There is no BI in community setting.

At present, Thailand has not yet officially designed TGCBI for moderate drinkers under their community context to reduce and prevent alcohol dependence. The present presentation, only an integral part of the study outcome, aimed at studying the change of AUDIT scores.

Material and Method

The present study was a quasi-experimental research comparing between two high drinking prevalence communities in Lop Buri Province, Thailand, an intervention group with TGCBI and a control group without TGCBI. Both communities are alike in demography. Albeit they are located far apart, their consumption rate was relatively similar. The subjects in both communities met the inclusion criteria, *i.e.*, aged 19-65 years with AUDIT score of 8-19, not addicted to alcohol, no neurotic disease or Psychosomatic symptoms, no pregnancy, and no health history of alcohol drinking related diseases. Informed consent was obtained from all subjects and the protocol was approved by the Health Sciences Review Board Committee, Chulalongkorn University. The data were collected between September 2007 and September 2009.

Alcohol Use Disorder Identification Test (AUDIT)

Alcohol Use Disorder Identification Test (AUDIT) is a standard questionnaire consisting of 10 questions giving scores to provide levels of hazardous and harmful alcohol use for men and women. It covers three domains, alcohol consumption, drinking behavior, and alcohol-related problems. It is designed to identify hazardous drinkers whose level of drinking places them at risk for developing problems *i.e.* harmful drinkers experiencing physical, social, or psychological problems, and potential alcohol dependents.

Baseline and follow-up

The content of the questionnaire included demographic characteristics, alcohol consumption, and AUDIT. The baseline data of the subjects were interviewed face to face from all members in a household survey in both communities. The moderate drinkers in both communities were interviewed at 1, 3, and 6 months follow-up.

Intervention

The Tailored Goal oriented Community Brief Intervention Model (TGCBI) recruited the participants who lived in the intervention community and obtained positive screening by AUDIT score 8-19. They would be labeled as moderate alcohol consumption and motivated cases due to their voluntary commitment to reduce alcohol consumption. The participants who lived in the control community without TGCBI were the controls.

Process of Tailored Goal Oriented Community Brief Intervention Model (TGCBI)

The TGCBI Model is a treatment that lies on three components. Firstly, the TGCBI based on FRAMES consisting of Feedback, Responsibility, Advice, Menu of Option, Empathy, and Self-Efficacy. Secondly, drinkers must voluntarily set-up their goal and drinking reduction design suitable for them and their community. Lastly, key informants such as monks, health personnel, family, and friends can be a source to complete the FRAMES. TGCBI aims to enhance drinkers to set their goal and to reduce drinking to a level appropriate for them and their community context. TGCBI was conducted individually in four sessions, each session taking around 15-60 minutes.

The process of TGCBI as follows:

1. Identification by AUDIT score to classify drinkers into three levels: 1) little drinking behavior (0-7 score). 2) moderate drinking behavior (8-19 score). 3) heavy drinking behavior (20-40 score).

2. Provide process of TGCBI to moderate drinkers voluntarily admitted to TGCBI.

3. Problem Assessment: Feedback to individual drinker appropriately, Responsibility-emphasize drinkers' responsibility for their drinking behavior or abstaining from drinking.

4. Advice: Clear and precise advice in drinking reduction/abstinence can decrease future risk and impairment. It will help drinkers to realize other personal risks that will make them consider changing their drinking behavior.

5. Goal setting: Drinkers will set their exact drinking volume and the date they wish to reduce/stop drinking in written agreement.

6. Menu of options: Drinkers should be given the opportunity to select the pattern most suitable for their drinking reduction/abstinence, whichever alternative, be it the same or different, is dependent on each person.

7. Follow-up: To review the drinkers' goal of drinking reduction/abstinence, assessing any new problems that may incur is necessary for setting a clear solution and a new goal. Empathy-Communicate warmly and amicably with reflection and understanding. Self efficacy-Encourage drinkers to be more confident that they can change their drinking behavior (drinking reduction/abstinence).

Validity and reliability

The present study used AUDIT to screen the categories of alcohol consumption. In addition, it established validity and test-retest reliability in a community context, which is equivalent to 0.852. The questionnaire was translated into Thai and back-translated into English to ensure its accuracy in translation.

Statistical analyses

The data used descriptive statistics to summarize the contents of the questionnaire (*i.e.* demographic characteristics, patterns of alcohol consumption, etc). Independent t-test two-tail was used to measure differences of mean AUDIT score change between the intervention and control groups. Repeated Measures ANOVA (GLM) was used to quantify the overall change effect in both groups. P-value < 0.05 was considered to indicate statistical significance different.

Results

Demographic characteristics

The subjects collected from the baseline data intervention community were 509 subjects, and 510 subjects in control community. According to the baseline data, 78 and 74 moderate drinkers were selected by AUDIT score in the intervention and control group respectively. They were all asked to give a consent form. Forty-seven cases in intervention and 50 in control completed all 1, 3, and 6 month-follow-up. When comparing the community demographic characteristics between moderate drinkers by AUDIT score and those who completed all follow-ups, it was found that the majority was male and 60% were married. Their average age was about 39 to 43, and 60%-68% had completed elementary school. Over 80% were born in Lop Buri. As regards their drinking behavior, the average AUDIT score was 10 to 11. Therefore, baseline of moderate drinkers and those who completed at 1, 3, and 6-month follow-up of both intervention and control groups still indicated the similar demographic and drinking characteristics (Table 1).

Change of the Alcohol Use Disorder Identification Test (AUDIT)

The change of AUDIT score showed the significance at.001. There are differences in change AUDIT score between two groups, therefore, change AUDIT score seems to have a significance effect between groups (Table 2).

Table 1. Data of demographic and drinking characteristics compared moderate drinkers from AUDIT with all moderate drinkers completing follow-up in both groups

Characteristics	Moderate drinkers from AUDIT		Moderate drinkers completing all follow-up	
	Intervention group (n = 78)	Control group (n = 74)	Intervention group (n = 47)	Control group (n = 50)
Mean age $\pm$ SD, years	39.6 $\pm$ 12.9	39.2 $\pm$ 11.2	43.2 $\pm$ 13.1	40.7 $\pm$ 10.3
Sex: men, n (%)	69 (88.5)	65 (87.8)	40 (85.1)	44 (88.0)
Marital status: married, n (%)	44 (56.4)	46 (62.2)	30 (63.8)	33 (66.0)
Education: primary school	46 (59.0)	44 (59.5)	29 (67.7)	30 (60.0)
Unskilled working class, n (%)	29 (59.0)	16 (21.6)	21 (44.7)	11 (22.0)
Mean age first drink $\pm$ SD, years	18.78 $\pm$ 4.9	20.76 $\pm$ 5.5	19.91 $\pm$ 5.7	20.58 $\pm$ 5.1
Baseline AUDIT scores, mean $\pm$ SD, scores	10.9 $\pm$ 3.3	10.1 $\pm$ 3.1	11.6 $\pm$ 3.7	10.8 $\pm$ 3.6

The comparison of the change of AUDIT score difference in the two communities showed that in the intervention group at the baseline and 1, 3, and after the follow-up at 6-month interval was -3.89, -5.74, and -6.30 respectively. The change of AUDIT score at baseline and after the follow-up at 6-month interval decreased twofold of that of the baseline and after the follow-up at 1 month. As a result, moderate drinkers' change in AUDIT score within the intervention group decreased dramatically. Meanwhile, in the control group the change in AUDIT score of the baseline and 1, 3, and 6-month was 1.54, 1.40, and 2.34 respectively. The change of AUDIT score difference at the follow-up at all intervals had risen (Fig. 1).

According to the t-test comparing the change of AUDIT score difference at baseline and after the follow-up at each intervention, after the follow-up in two communities, there was a significant difference of the total score at.001 (Table 3).

When classifying the consumption behavior again by AUDIT score comparing before TGCBI and 1, 3, and 6-months of follow-up, it was found that in intervention group before TGCBI there were 47 moderate drinkers, after the follow-up at 1-month interval, 11 of them abstained from drinking, 13 of them were seldom drinkers, and the rest remained moderate drinkers. As regards after the follow-up at 3-month interval, among 47 moderate drinkers, 14 abstained from drinking, 18 were seldom drinkers, and the rest remained moderate drinkers. Regarding after 6-month interval, from 47 moderate drinkers at the baseline, 17 abstained from drinking, 15 were seldom drinkers, and the rest retained moderate drinkers. It is evident that after the follow-up at all intervals, there was a continuous increase of drinking abstainers in moderate drinkers and this group finally became seldom drinkers. Most important of all, they no longer became alcohol dependent (Fig. 2).

As far as consumption behavior in the control community is concerned, before TGCBI there were 50 moderate drinkers. After the follow-up at 1-month interval, four moderate drinkers abstained from drinking, four were seldom drinkers, and 36 remained moderate drinkers. Remarkably, six of them became alcohol dependent. Regarding after the follow-up at 3-month interval, among 50 moderate drinkers, seven abstained from drinking, four were seldom drinkers, four were alcohol dependent, and the rest remained moderate drinkers. After the follow-up at 6-month interval, among 50 moderate drinkers, 10 abstained from drinking, three were seldom drinkers, and 29 were moderate drinkers. Noticeably, eight moderate drinkers became alcohol dependent (Fig. 3).

Table 2. Change of AUDIT score among moderate drinkers completing follow-up in intervention and control communities by General Linear Model (GLM)

	df	SS	MS	F
Change of AUDIT score	3	9.644	3.215	20.500***

R Squared = 0.398 (adjusted R squared = 0.379)
*** $p < 0.001$

Discussion

TGCBI implementation is successful, and a suitable tool for public health personnel in the hospitals and health centers to identify the alcohol use disorder, to give consultation, and to provide

Table 3. Change of total AUDIT score (score) from baseline to follow-up of 1, 3 and 6 months in comparison groups-by Independent t-test

	Change of total AUDIT score (score)			
	Intervention group n = 47, mean (SD)	Control group n = 50, mean (SD)	t-test	Sig (p-value)
Follow-up 1 month - baseline	-3.89 (4.5)	1.54 (3.8)	-6.443	0.000***
Follow-up 3 months - baseline	-5.74 (5.0)	1.40 (5.4)	-6.739	0.000***
Follow-up 6 months - baseline	-6.30 (5.0)	2.34 (6.5)	-7.331	0.000***
Follow-up 3 months - follow-up 1 month	-1.85 (3.96)	-0.14 (4.00)	-2.115	0.037*
Follow-up 6 months - follow-up 3 months	-0.13 (2.6)	1.06 (4.5)	-1.586	0.116
Follow-up 6 months - follow-up 1 months	-1.98 (4.4)	0.92 (5.5)	-2.879	0.005**

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

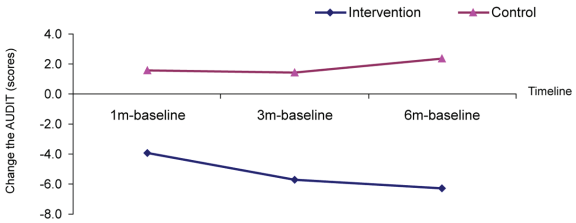

Fig. 1 Comparison of change the AUDIT score in two communities

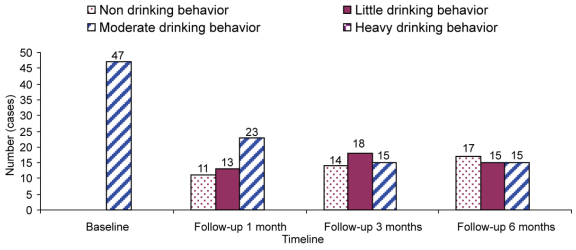

Fig. 2 Graph demonstrates number of moderate drinkers and consumption behavior in intervention community

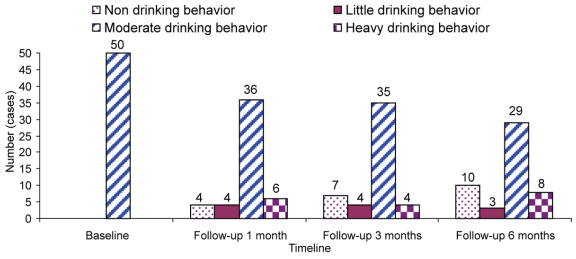

Fig. 3 Graph demonstrates number of moderate drinkers and consumption behavior in Control community

accurate knowledge and understanding about alcohol consumption to avoid alcohol dependence in the community. Insomuch as TGCBI is a simple and short process, it is postulated that a close and continuous monitoring of consumption behavior coupled with any obstacles related to drinking should be in practice. In addition, more cooperation from pertinent sectors in providing information and positive attitude should be enhanced to substantiate the achievement in the TGCBI implemented community. Likewise, TGCBI should be implemented in the community with similar demographic characteristic to avoid the consumption increase in moderate drinkers and prevent them from becoming alcohol dependent. As earlier mentioned, all sectors concerned can use the database to set their framework or plan for their administration, prevention, and solution more objectively and effectively.

Comparing the present results with the systematic reviews has confirmed the efficacy of brief intervention in reducing risky levels of alcohol consumption in non-dependent individuals[8,9]. Until recently, little attention has been paid to the issue of the external validity of these results[10].

Conclusion

The present study initiated TGCBI Model to be used in the community instead of in the hospitals. The TGCBI emphasizes alcohol drinkers to set up their own goal and pattern of alcohol reduction appropriate to an individual and community context. The follow-up of the change of consumption behavior and AUDIT score after 1, 3, and 6 months of TGCBI in the two communities stipulated that the intervention group, with TGCBI had a decrease in consumption behavior and AUDIT score when compared within its community and with a controlled community.

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ผลการใช้รูปแบบบำบัดอย่างย่อชุมชนในการลดคะแนนแบบคัดกรองภาวะผิดปกติจากการดื่มเครื่องดื่มแอลกอฮอล์ใน 2 ชุมชน

จิตรลดา อารีย์สันติชัย, สมโภชน์ เอี่ยมสุภาษิต, John Marsden, อุษณีย์ พึ่งปาน, สุรศักดิ์ ฐานีพานิชสกุล

วัตถุประสงค์: *เพื่อศึกษาผลการใช้ Tailored Goal oriented Community Brief Intervention Model (TGCBI)*
วัสดุและวิธีการ: *การศึกษาครั้งนี้เป็นการวิจัยกึ่งทดลอง โดยใช้การเปรียบเทียบชุมชน 2 ชุมชน ในจังหวัดลพบุรี ที่มีความชุกของการดื่มสูง คือ ชุมชนที่ได้รับรูปแบบการบำบัดอย่างย่อที่สร้างขึ้น และชุมชนควบคุมที่ไม่ได้รับการบำบัดอย่างย่อ รูปแบบการบำบัดอย่างย่อชุมชนที่สร้างขึ้นอยู่บนพื้นฐาน 3 ประการ คือ 1. ใช้หลักการของ FRAMES 2. โดยเน้นให้ผู้ดื่มกำหนดเป้าหมาย รวมถึงวิธีการลดการดื่มฯ ให้เหมาะสมกับแต่ละบุคคล และสอดคล้องกับสภาพบริบทชุมชน 3. ใช้ความร่วมมือขององค์กรชุมชน เช่น พระ, เจ้าหน้าที่สาธารณสุข, ครอบครัว, เพื่อน เป็นต้น ทั้งนี้เพื่อช่วยผลักดันให้รูปแบบบำบัดอย่างย่อชุมชนบรรลุผลสำเร็จ*
การวัดผล: *การเปลี่ยนแปลงคะแนนจากแบบคัดกรองภาวะผิดปกติจากการดื่มฯ (Alcohol Use Disorder Identification Test: AUDIT)*
ผลการศึกษา: *จำนวนกลุ่มตัวอย่าง 50 คน ในชุมชนควบคุม และ 47 คน ในชุมชนทดลองที่เป็นกลุ่มดื่มปานกลาง และติดตามครบ 1, 3 และ 6 เดือน การติดตามผลการเปลี่ยนแปลงคะแนนจากแบบคัดกรองภาวะผิดปกติ จากการดื่มฯ หลังการให้การบำบัดอย่างย่อชุมชนในช่วง 1, 3 และ 6 เดือน ทั้ง 2 ชุมชน พบว่าชุมชนทดลองมีคะแนนจากแบบคัดกรองภาวะผิดปกติจากการดื่มฯ ลดลงเมื่อเทียบกับชุมชนควบคุม*
สรุป: *ผลการศึกษานี้สามารถบอกถึงประสิทธิผลของการบำบัดอย่างย่อชุมชน ในการลดลงของคะแนนจากแบบคัดกรองภาวะผิดปกติจากการดื่มฯ มีความแตกต่างกันอย่างมีนัยสำคัญที่ระดับ 0.001 ดังนั้นพอสรุปได้ว่าการบำบัดอย่างย่อชุมชนที่สร้างขึ้นนี้มีประสิทธิผลในระดับหนึ่ง*