

The Effectiveness of Alcohol Drinking Behavior Reduction Program among Thai Female Farmers by Applying Self- Efficacy Theory

ประสิทธิผลของโปรแกรมการลดพฤติกรรมการดื่มแอลกอฮอล์
ในกลุ่มสตรีเกษตรกรไทยโดยการประยุกต์ใช้ทฤษฎีความสามารถแห่งตน

Pattanawadee Pattanathaburt and Narongsak Noosorn
พัฒนาวดี พัฒนาบุตร และณรงค์ศักดิ์ หนูสอน

Faculty of Public Health, Naresuan University
คณะสาธารณสุขศาสตร์ มหาวิทยาลัยนเรศวร

Abstract

The long tradition of gender gap in agriculture has caused Thai female farmers to face tremendous problems in order to cope with the responsibility for household management and opportunity to involve in agricultural activities. Therefore, women drink more alcohol, especially if they expect alcohol to increase their assertiveness. This study is a quasi-experimental research aimed to study the effectiveness of alcohol drinking behavior reduction program among Thai female farmers by using self-efficacy theory. The samples of the study were an assigned experimental group of 30 female farmers and an assigned control group of other 30 female farmers in Buengkok sub-district, Bangrakam district, Phitsanulok province. The participants in the experimental group were asked to participate in a consecutively 5-sessional program with involved 5-activities to strengthen the physical and emotional conditions of the participants to prevent alcohol consumption. The data were collected by questionnaires about self-efficacy, outcome expectancy and alcohol consumption behavior 5 times: at baseline before the program, at exit point immediately after the end of the program, at 4 weeks, at 8 weeks, and at 12 weeks post-intervention using self-efficacy, outcome expectancy and alcohol consumption behavior questionnaires. The results showed that the experimental group of female farmers had differences mean scores of self-efficacy, outcome expectancy and alcohol consumption behavior scores before and after experiment ($p < 0.05$). The repeated measure ANOVA analysis found that the experimental group of female farmers had significantly improved average self-efficacy, outcome expectancy but reduced alcohol consumption behavior scores ($p < 0.05$).

Keywords: alcohol drinking behavior reduction, self-efficacy theory, female farmers

บทคัดย่อ

ช่องว่างระหว่างเพศที่มีมายาวนานในสังคมเกษตรกรรมทำให้สตรีเกษตรกรไทยมีความเครียดจากปัญหาความรับผิดชอบจากงานบ้านและงานเกษตรกรรมของบ้านทำให้สตรีส่วนหนึ่งหันไปดื่มเครื่องดื่มแอลกอฮอล์มากขึ้นเพื่อเกิดความมั่นใจ งานวิจัยนี้เป็นการวิจัยกึ่งทดลองมีวัตถุประสงค์เพื่อศึกษาประสิทธิผลของโปรแกรมการลดพฤติกรรมการดื่มแอลกอฮอล์ในกลุ่มสตรีเกษตรกรโดยการประยุกต์ใช้ทฤษฎีความสามารถแห่งตน กลุ่มตัวอย่างในการศึกษาเป็นสตรีเกษตรกรจำนวน 60 คน ในพื้นที่ตำบลบึงกอก อำเภอบางระกำ จังหวัดพิษณุโลก กลุ่มตัวอย่างถูกแบ่งกลุ่มด้วยการสุ่มตัวอย่างอย่างง่ายเป็นกลุ่มทดลอง 30 คน และกลุ่มควบคุม 30 คน กลุ่มทดลองได้เข้าร่วมโปรแกรมการลดพฤติกรรมการดื่มแอลกอฮอล์ในกลุ่มสตรีเกษตรกร ซึ่งเป็นกิจกรรมกลุ่ม จำนวน 5 ครั้ง ประกอบไปด้วย 5 กิจกรรมหลัก ที่เสริมสร้างความเข้มแข็งทางร่างกายและอารมณ์ในการป้องกันการดื่มแอลกอฮอล์ ทำการเก็บรวบรวมข้อมูล 5 ครั้ง ที่ระยะก่อนการทดลอง หลังการทดลองทันที หลังการทดลองสัปดาห์ที่ 4 8 และ 12 โดยใช้แบบสอบถามการรับรู้ความสามารถแห่งตน ความคาดหวังในผลลัพธ์ และพฤติกรรมการบริโภคแอลกอฮอล์ ผลการวิจัย พบว่า สตรีเกษตรกรกลุ่มทดลองมีคะแนนเฉลี่ยการรับรู้ความสามารถแห่งตน ความคาดหวังในผลลัพธ์ และพฤติกรรมการบริโภคแอลกอฮอล์ ก่อนและหลังทดลองทันที แตกต่างกันอย่างมีนัยสำคัญทางสถิติ ($p < 0.05$) เมื่อทำการวิเคราะห์โดยใช้การวิเคราะห์ความแปรปรวนเมื่อมีการวัดซ้ำพบว่ากลุ่มทดลองมีคะแนนเฉลี่ยการรับรู้ความสามารถแห่งตน และคะแนนเฉลี่ยความคาดหวังในผลลัพธ์เพิ่มขึ้นอย่างมีนัยสำคัญทางสถิติ ($p < 0.05$) และมีคะแนนเฉลี่ยพฤติกรรมการบริโภคแอลกอฮอล์ ลดลงอย่างมีนัยสำคัญทางสถิติ ($p < 0.05$)

คำสำคัญ: การลดพฤติกรรมการดื่มแอลกอฮอล์, ทฤษฎีความสามารถแห่งตน, เกษตรกรสตรี



Introduction

Alcohol dependence is one of the worldwide public health risk factors for health. Alcohol consumption increases risks of illness such as liver cancers and cause of disability and death due to injuries from accidents (Gastfriend et al., 2007). Excessive alcohol consumption as three or more drinks a day can raise blood pressure and triglyceride levels. The use of higher amounts of alcohol consumption may bring about alcohol-related cardiomyopathy, increased arrhythmia, and sudden cardiac death. A study in the northern part of Thailand found that traffic accidents and injuries have relationship to alcohol consumption, which those who drive after alcohol consumption involve in more traffic accidents than those who drive without drinking by 2.83 times (Noosorn &

Wongwat, 2010). One to two drinks per day is the optimal amount for men while one drink per day in women and people with poor health seems to be the ideal limit (Aygen, 2015). Cross-sectional national survey respondents in Australia with a diagnosis of diabetes, hypertension, and anxiety found that the patients with those diagnosis were more likely to have reduced or stopped alcohol consumption in the past 12 months. The reason of having reduced or ceased alcohol consumption in the past 12 months increased as perceived general health status declined from excellent to poor (Liang & Chikritzhs, 2011).

The behavior of frequent and deliberate use of alcohol to cope with social discomfort is known to increase one's risk of developing alcohol dependence (Carrigan et al., 2008). Impulsivity is

an important risk factor for engaging in alcohol use among college students. Individuals with high negative urgency may consume alcohol in order to ameliorate their emotional distress due to strong desires to increase positive and decrease negative experiences associated with drinking. Personality characteristic remarkably affected impulsive behavior in response to emotionally distressing situations, which is associated with high rates of alcohol use (Anthenien, Lembo & Neighbors, 2017). The research applied personality traits, alcohol attitudes, motivations, and social norms to scrutinize the extent that such measures distinguish across nondrinkers, moderate drinkers, and binge drinkers in college students found that self-report measures are the standard approach in measuring alcohol use. However, response biases attributed to underreporting substance use in self-reports tend to be inconsequential and are unlikely to alter the direction of findings (Lac & Donaldson, 2016). The effectiveness of decreasing coping with anxiety drinking motives among underage heavy episodic drinking college women, indicated that a web-based combined alcohol use and sexual assault risk reduction intervention (Gilmore & Bountress, 2016).

In Thailand, drinking is more prevalent among men than women. However, National Statistical Office reported that the prevalence of female drinkers in women aged 15 years and older has increased from 10.3 percent in 2004 to 12.9 percent in 2014 (National Statistical Office, 2014). This study is consistent with the results from a national household survey of substance and alcohol use, which found that among Thai women, 3.2 million are drinking during the past year, 2.0 million are drinking during the past month and 1.3 million are drinking during the past

week. The survey also found that women aged 25-44 years old were the most drinkers during the past year, followed by women aged 12-24 years old and 45-65 years old, respectively, while women aged 25-44 years old were the most drinkers during the past month followed by women aged 45-65 years old, and 12-24 years old respectively (Assanangkornchai et al., 2010). The study on anger as a motivator for alcohol consumption demonstrated that with a specific anger provocation, women drink more alcohol especially if they expect alcohol to increase their assertiveness, which supports a causal relationship between young women's anger and their specific choice to drink alcohol. However, the mechanism showing how anger affects drinking behavior is still unclear (Morrison, Noel & Ogle, 2012). The study to examine abstinence pathways to in treatment for alcohol use disorder among women. The three most commonly chosen plans are (1) winding down (gradually decreasing quantity then frequency of drinks consumed each week over the first five sessions of treatment), (2) quitting cold turkey (immediate cessation of use), and (3) maintaining abstinence (for those who had stopped drinking between the initial study screen and session (1) showed that women who are presenting to treatment for their alcohol use may benefit from a structured, detailed discussion with their therapist in which a personalized plan for achieving abstinence (Holzhauer et al., 2017).

The social cognitive theory posits a multi faceted causal structure in which self-efficacy beliefs operate together with goals, outcome expectations, and perceived environmental impediments and facilitators in the regulation of human motivation, behavior, and well-being. Belief in one's efficacy to exercise control is

a common pathway through which psychosocial influences affect Health promotion and disease prevention (Bandura, 2004). Readiness to Change Questionnaire (RTCQ) for subsequent drinking was conceptualized as a combination of a patient's perceived importance of a problem and confidence in his or her ability to change. This stage of change model addresses the underlying motivational processes that drive people to modify their behavior and proposes that the process of change, based on progression through distinct qualitative stages of change (Matwin & Chang, 2011).

In this study, the authors of this paper have realized the problem of alcohol drinking among female farmers. The self-efficacy theory was used to build an intervention program to reduce alcohol-drinking behavior in the female farmers in which this theory focuses on the individual's confidence in their own ability. One can manage and do any health behaviors if they believe in their own capability. The experiment was conducted in Buengkok Sub-district, Bangrakam District, Phitsanulok Province.

Research Objective

The main objective of this study is to study the effectiveness of alcohol drinking reduction program among female farmers using self-efficacy theory. The objective includes the comparisons of self-efficacy, outcome expectancy, and alcohol-drinking behavior of the participants in the control and the experimental groups before, after the intervention (0, 4, 8, 12 weeks after intervention), both within-subjects and between-subjects based on the hypotheses that self-efficacy, outcome expectancy, and alcohol-drinking scores would

be different pre- and post- intervention and after 4 weeks, 8 weeks, and 12 weeks after the intervention.

Research Hypothesis

1. The self-efficacy score is higher in the experimental groups after the intervention than before intervention.
2. The outcome-expectancy score is higher in the experimental groups after the intervention than before intervention.
3. The alcohol consumption behavior score is lower in the experimental groups after the intervention than before intervention.

Research Methodology

This study is a quasi-experimental research in two sample groups by using repeated ANOVA. The study was conducted during April 2016 to September 2016

Population and Sample

The population of this study was 258 female farmers age between 20-59 years who consume alcohol in Buengkok Sub-district, Bangrakam District, Phitsanulok Province. The sample size was determined following Dempsey and Dempsey's suggestion (Dempsey, Dempsey & Dempsey, 1992) that the sample size in quasi-experimental study should be at least 60. Therefore, 60 participants were sampled using simple random sampling from the population by the draw and randomly assigned into an experimental group and a control group with 30

participants in each group. The participants who had other drug-related problems or had diagnosed with mental disorders were excluded.

Research Procedure

This quasi-experimental study was a pre- and post-comparison and repeated measure at post-intervention with a control group design. The local administrative officials, community leaders, and the local health center were contacted to inform the objectives of the study. After the participants were sampled, a meeting with the participants was conducted to provide the information of the study, to inform their rights and benefits, and to acquire informed consents from the participants. Thirty participants were randomly assigned to one of two groups. The intervention group received the Self-efficacy enhancement program intervention. The participants in the control group were informed that they could join the Self-efficacy enhancement program after the study is completed.

Research Tools

This study used two sets of tool, which are the self-efficacy enhancement program, and the data collection tools, as the followings;

1. Self-efficacy enhancement program

This program consists of five activities during 5 weeks period.

Activity 1 (Week 1) “Lao Soo Kan Fang” in Thai or “Tell Us Something” in English was an activity that requires the participants to exchange their knowledge and experiences on alcohol

drinking. After that, they were asked to cluster into smaller groups in order to practice emotion and stress management skills by role-playing. Each group discussed to share opinions, feelings, questions and answers about the role-playing. This activity took approximately 2 hours to finish.

Activity 2 (Week 2) “Chewit Di Di Mai Me Lao” in Thai or “What a Good Life without Alcohol” in English was an activity to learn from role models’ experiences who had successfully given up their drinking habits. This activity took approximately 2 hours to finish.

Activity 3 (Week 3) “Lao Rueng Lao” in Thai or “Alcohol Stories” in English was an activity that the participants watched videos about circumstances and behaviors related to alcohol that causes losses. After the video session, they discussed about what they had just watched. This activity took approximately 2 hours to finish.

Activity 4 (Week 4) “Ao Lao Ma Lao” in Thai, or “Talking about Alcohol” in English was an activity that the invited Village Health Volunteers (who passed certified alcohol and narcotic prevention courses) talked about their experiences in the real situations related to the adverse effects of alcohol consumption followed by a question and answer session and a group discussion. This activity took approximately 1.5 hours.

Activity 5 (Week 5) “Phanta Sanya Jai” in Thai, or “Commitment” in English was the recap and the conclusion of all the past four activities followed by a session which the participants mutually set a concrete aim and gave promises to quit alcohol. This activity took approximately 1.5 hours.

Ethical Considerations

All participants provided written informed consent. The study protocol was approved by Naresuan University Institutional Review Board (No. 237/58).

Data Collection

The data collection tools are structured self-administered questionnaires, which can be divided into four parts.

Part 1: General Information Questionnaire is a questionnaire used to collect general information of a participant such as their socio-demographics and drinking patterns.

Part 2: Self-Efficacy Scale is a questionnaire about a participant's self-efficacy in quitting alcohol consumption. This scale is based on Drinking Refusal Self - Efficacy Questionnaire (DRSEQ) by Young et al. (2007) and was translated into Thai by Hemchayat, Homsin and Srisuriyawet (2010). The questionnaire consists of 15 closed-ended questions with 3-level Likert scale.

Part 3: Outcome-Expectancy Scale is a questionnaire designed specifically for this study by the authors based on Albert Bandura's Self-Expectancy Theory (Bandura, 1997) to measure the expectancy of positive outcome in rejecting alcohol consumption. The questionnaire consists of 13 closed-ended questions with 5-level rating scale.

Part 4: Alcohol Consumption Behavior Questionnaire is a questionnaire used to collect information about a participant's alcohol consumption behaviors. This questionnaire was developed based on the Alcohol Use

Identification Test or AUDIT (Babor et al., 2001). The questionnaire consists of 10 checklist closed-ended questions. Each question has four answer options with score ranged from 0 to 4, which makes the total score of this questionnaire 40.

All tools are ensured their content validity using expert judgements. For this purpose, an expert panel consisted of five experts in alcohol consumption study was appointed to provide their viewpoints on the relevancy and the clarity of the items in the tools. The reliability of the tools was tested by trying out with 30 similar female farmers in Wang Ithok sub-district which is a sub-district in the Bangrakam District. The try out scores were computed for internal consistency using Cronbach's alpha coefficient. The alpha of Self-Efficacy Scale was 0.88, Outcome-Expectancy Scale was 0.79, and Alcohol Consumption Behavior Questionnaire was 0.78.

Data Analysis

1. The general information was statistically analyzed with frequencies, percentages, means and standard deviations in both experimental and control groups.

2. The scores from the scales and questionnaires were analyzed with means and standard deviations.

3. The differences of Self-Efficacy Scale, Outcome-Expectancy Scale, and Alcohol Consumption Behavior Questionnaire were analyzed with the independent t-test and repeated measure ANOVA.

4. A significance level of 0.05 was used throughout all inferential analysis.

Results

The study found that the majority of both experimental and control groups had age in the range of 40 to 49 years old with 43.3 and 46.7 respectively. For the marital status, most women in both experimental and control groups were still married with 83.3% and 86.6% followed by widowed/divorced/separated with 16.6% and 13.3%, respectively. For the level of education, the results showed that most women in both experimental and control groups had primary school education with 63.3% and 66.7% followed by high school education with 36.7% and 30.0%. Table 1 shows the analyzed personal information of the participants.

Before the program started, the mean score of self-efficacy, outcome-expectancy, and alcohol consumption behavior between the experimental group and control group were not different as shown in Table 2.

The analysis of the differences of the mean of Self-Efficacy Score found that for the experimental group, before the program they had the average score of 25.43 and after the program, the average score was different at 33.46 ($p < 0.001$). For the control group before the program, they had the average score of 25.40 and after the program, the average score was 25.42 with no difference ($p = 0.573$). Table 3 shows the details of this analysis.

The comparison of the mean of Outcome Expectancy Score found that for the experimental group, before the program they had the average score of 33.46 and after the program, the average score was different at 39.76 ($p < 0.001$). For the control group before the program, they had the

average score of 33.33 and after the program, the average score was 33.43 with no difference ($p = 0.103$). Table 3 shows the details of this analysis on the outcome-expectancy scores in experimental and control group before and after the experiment.

It is noted that both groups had the scores above 20 which suggested in the AUDIT literatures (Babor et al., 2001) that the patient are “clearly warrant further diagnostic evaluation for alcohol dependence.” The comparison of the mean of Alcohol Consumption Behavior Questionnaire score found that for the experimental group, before the program they had the average score of 26.96 and after the program, the average score was different at 19.56 ($p < 0.001$). For the control group before the program, they had the average score of 26.80 and after the program, the average score was 26.86 with no difference ($p = 0.536$). Table 3 shows the details of this analysis on the means of the Alcohol Consumption Behavior Questionnaire scores in experimental and control group before and after the experiment.

After the experiment immediately, the data were analyzed with Repeated measure ANOVA, and the results show that in the experimental group, the Self-Efficacy Score was higher, the Outcome-Expectancy Score was higher, and the Alcohol Consumption Behavior Questionnaire score was lower after the program ($p < 0.001$) as shown in Table 4. The results also show that the Self-efficacy and Outcome-Expectancy scores measured immediately after the experiment, 4 weeks after the experiment, 8 weeks after the experiment, and 12 weeks after the experiment were all higher than the scores measured before the experiment ($p < 0.001$), while the Alcohol

Consumption Behavior Questionnaire score was lower measured immediately after the experiment, 4 weeks after the experiment, 8 weeks after the experiment, and 12 weeks after the experiment than the scores measured before the experiment ($p < 0.001$). As shown in Table 4, all scores in the control groups show no significant improvement at any measurements.

Discussion

This study applied Bandura's Self-Expectancy Theory in developing a program to reduce alcohol consumption among female farmers and the results showed the Self-Efficacy Score, the Outcome-Expectancy Score were higher and the Alcohol Consumption Behavior Questionnaire score was lower in the experimental group after the experiment than before the experiment ($p < 0.001$). The results also showed that the program was effective and the effects of the program continued to affect the participants' behaviors through the end of the experiment. This is because the theory focuses on the one's belief in their ability to control over their health habits.

This focal belief is the foundation of human motivation and action. When people believe they can produce desired effects by themselves, they can have the ability to act in the face of difficulties. In long term, this can reduce the self-perceived of difficulties. The results agree with the study of female participants in alcohol use Disorders treatment trials can show a substantial amount of reduction in drinking during the pretreatment assessment phase, before therapy skills are imparted (Worden, Epstein & McCrady, 2015). Even though the alcohol drinking reduction program in this study yielded the results that reduced the drinking behaviors in the female farmers significantly, but the Alcohol Consumption Behavior Questionnaire was still substantially high according to the AUDIT guideline (Babor et al., 2001). Regularly motivations after the program are also mandatory to ensure the sustainability of the results, because in reality, the subjects are living in the communities with drinking is common and, consequently, has adverse effects to the subjects and can lead to alcohol drinking again.

Table 1*Personal information of subjects categorized by groups*

Personal information	Experimental (n=30)		Control (n=30)	
	N	%	N	%
Age range (year)				
20-29	2	6.6	3	10.0
30-39	8	26.6	7	23.3
40-49	13	43.3	14	46.7
50-59	7	23.3	6	20.0
More than 60	0	0.0	0	0.0
Marital status				
Single	0	0.0	0	0.0
Still married	25	83.3	26	86.6
Widowed/divorced/separated	5	16.6	4	13.3
Level of education				
Primary school	19	63.3	20	66.7
High school	11	36.7	9	30.0
Bachelor degree or higher	0	0.0	1	3.3

Table 2*The comparison of the means of the Self-Efficacy Scores, Outcome-Expectancy Scores, and Alcohol Consumption Behavior Scores between the experimental and the control groups at baseline before the intervention*

Scores	\bar{X}	SD	t	df	p-value
Self-Efficacy					
Experimental (n = 30)	25.43	2.64	1.409	29	0.169
Control (n = 30)	25.40	2.68			
Outcome-Expectancy					
Experimental (n = 30)	33.46	2.55	1.072	29	0.293
Control (n = 30)	33.33	2.42			
Alcohol Consumption Behavior					
Experimental	26.96	3.34	-0.072	58	0.943
Control	26.80	3.31			

Table 3

The comparison of the means of the Self-Efficacy Scores, Outcome-Expectancy Scores, and Alcohol Consumption Behavior Scores in the experimental and the control groups before and after immediately the intervention (N = 60)

Scores	Before		After		t	df	p-value
	\bar{X}	SD	\bar{X}	SD			
Self-Efficacy							
Experimental (n = 30)	25.43	2.64	33.46	2.55	-10.076	29	<0.001*
Control (n = 30)	25.40	2.68	25.42	2.68	.573	29	0.573
Outcome-Expectancy							
Experimental (n = 30)	33.46	2.55	39.76	2.27	-.736	29	<0.001*
Control (n = 30)	33.33	2.42	33.43	2.15	-1.02	29	0.103
Alcohol Consumption Behavior							
Experimental (n = 30)	26.96	3.34	19.56	3.34	-10.764	29	<0.001*
Control (n = 30)	26.80	3.31	26.86	3.14	-.626	29	0.536

*at statistical significance level at .05

Table 4

The means and standard deviations of all of the scores in the study at before the experiment, immediately after the experiment, 4 weeks after the experiment, 8 weeks after the experiment, and 12 weeks after the experiment (N = 60)

Scores	mean (SD)					F	p-value
	Before	After immediately	4 Weeks After	8 Weeks After	12 Weeks After		
Self-Efficacy							
Experimental (n = 30)	25.43 (2.64)	33.46 (2.55)	33.97 (3.51)	33.67 (3.11)	33.50 (2.31)	19.158	<0.001*
Control (n = 30)	25.40 (2.68)	25.42 (2.68)	23.37 (6.10)	24.53 (5.34)	23.63 (6.42)	0.432	0.642
Outcome-Expectancy							
Experimental (n = 30)	33.46 (2.55)	39.76 (2.17)	39.67 (5.31)	39.10 (3.97)	39.40 (3.76)	7.576	<0.001*
Control (n = 30)	33.33 (2.42)	33.43 (2.43)	32.48 (2.11)	33.25 (2.94)	33.16 (3.21)	0.218	0.812

Table 4

The means and standard deviations of all of the scores in the study at before the experiment, immediately after the experiment, 4 weeks after the experiment, 8 weeks after the experiment, and 12 weeks after the experiment (N = 60) (Continue)

Scores	mean (SD)					F	p-value
	Before	After	4 Weeks	8 Weeks	12 Weeks		
		immediately	After	After	After		
Alcohol Consumption Behavior							
Experimental (n = 30)	26.96 (3.34)	19.56 (3.34)	19.17 (5.31)	19.50 (3.97)	19.40 (3.76)	7.596	<0.001*
Control (n = 30)	26.80 (3.31)	26.86 (3.14)	25.41 (4.12)	26.80 (3.42)	26.39 (3.35)	0.781	0.907

*at statistical significance level at .05

Conclusion

This paper proposes a research study to measure the effectiveness of alcohol drinking reduction program among Thai female farmers using self-efficacy theory in Buengkok Sub-district, Bangrakam District, Phitsanulok Province, Thailand. The result shows that after the experiment, the women in the experimental group had higher Self-Efficacy Score, Outcome-Expectancy Score, but decreased Alcohol Consumption Behavior Questionnaire score ($p < 0.001$). The results also show that all scores measured immediately after the experiment, 4 weeks after the experiment,

8 weeks after the experiment, and 12 weeks after the experiment were all higher than the scores measured before the experiment ($p < 0.001$), while all scores in the control groups shows no significant improvement. This study shows that the Self-Efficacy theory is suitable in developing a program for reducing alcohol consumption in female farmers. For future study, regularly motivations after the program are suggested to ensure the sustainability of the results. The results from this study could be applied to other population groups or used by related authorities in order to reduce alcohol consumption in every aspect of the society.



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