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Quantitative Research Article

Effectiveness of a Cognitive-autonomous Motivation Program on Alcohol Consumption Behavior and Coping Ability for Alcohol-Dependent Patients

Kittaya Swangsap[1], Rangsiman Soonthornchaiya[1*], and Lenny Chiang-Hanisko[2]

Abstract

Background/ problem: Retention of behavior changes in alcohol consumption following treatment among alcohol-dependent patients poses a global health challenge. Consequently, it is essential to promote patients' autonomous management and maintenance of long-term behavioral change.

Objective/ purpose: To assess the effectiveness of the cognitive-autonomous motivation program (CAMP) on coping ability, alcohol consumption behavior, and severity of dependence in alcohol-dependent patients in Thailand.

Design and Methodology: A quasi-experimental design with repeated measures was performed. Seventy-one alcohol-dependent patients who met the inclusion criteria and received treatment from the addiction ward of the Thai tertiary care hospital were assigned to either the experimental or the control group. The experimental group received the CAMP with conventional nursing care, while the control group received only conventional care. The hypotheses were analyzed using repeated measures MANOVA.

Results: At 4- and 8-weeks following discharge, the participants in the experimental group demonstrated statistically significant reductions in alcohol consumption and severity of dependence relative to baseline, with significant differences from the control group at both time points (p = .00, $\eta 2$ = .16). Additionally, the experimental group demonstrated significantly greater improvements in coping abilities over time compared to the control group at both time points (p = .00, $\eta 2$ = .53).

Conclusion and Implications: The CAMP significantly enhanced coping abilities and reduced alcohol consumption behavior and severity of dependence among alcohol-dependent patients. These findings suggest that Thai healthcare professionals and behavioral specialists can effectively implement the CAMP as a supportive intervention to promote autonomous self-management and sustained behavioral change in alcohol-related behaviors.

Author Affiliation

[1] Faculty of Nursing, Thammasat University, Thailand.
[2] Christine E. Lynn College of Nursing, Florida Atlantic University, USA.

*Corresponding author e-mail: rangsiman@nurse.tu.ac.th
https://orcid.org/0000-0002-8736-5998

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Retention of behavior change for prevention of alcohol consumption remains a significant challenge in alcohol-dependent patients worldwide (National Institute on Alcohol Abuse and Alcoholism, 2024). Approximately 56.10% of alcohol-dependent patients struggle to regulate self-control, resulting in challenges in maintaining long-term behavior change (Joshi et al., 2022). This aligns with findings from Thailand, where 37.66–46.06 % of alcohol-dependent patients relapse and require readmission to healthcare services (Princess Mother National Institute on Drug Abuse Treatment [PMNIDAT], 2024).

Multiple factors are associated with the retention of behavior change in alcohol consumption. Alcohol-dependent patients often experience decreased intrinsic motivation, diminished attention to behavior regulation, and unreliable self-control, which undermine maladaptive coping ability and failure to retain behavior change in alcohol use (Rupp et al., 2017). These individuals also struggle with impulsivity and coping with undesirable life events after treatment (Sliedrecht et al., 2019; Sripada, 2022). Emotional awareness, particularly the clarity of emotions, is a crucial factor in the early development of emotional competence, which is linked to coping abilities in alcohol-dependent patients. This factor is also associated with maladaptive coping strategies and heightened cravings, which hinder self-control and impede behavioral changes in alcohol consumption (Shanmugam et al., 2021).

Although psychological interventions have demonstrated efficacy in treating alcohol dependence, the prevalence of uncontrolled behavior change remains high, particularly in Thailand. A critical synthesis of existing approaches highlights strengths and limitations, while revealing important gaps in current practices. Cognitive behavioral therapy effectively restructures maladaptive cognitions, enhances coping skills, and builds self-efficacy, contributing to reductions in harmful alcohol use (Magill et al., 2019, 2020; Simawong et al., 2022). However, its limited focus on ambivalence and motivational engagement may impede treatment initiation and long-term adherence. Motivational interviewing helps resolve ambivalence and foster intrinsic motivation. Nevertheless, this approach lacks the specific skills training necessary to translate motivation into sustained behavior change and pays inadequate attention to the motivation continuum, where intrinsic and extrinsic motivations play key roles in long-term behavior change (Conner & Norman, 2022; Weinstein et al., 2013). Intrinsic motivation is a prominent factor in facilitating behavior change in alcohol use.

The self-determination theory (SDT) is a widely acknowledged motivation theory that supports changes in various health behaviors. It emphasizes the continuum of motivation, ranging from extrinsic to intrinsic, highlighting the importance of fostering autonomy, competence, and relatedness to promote sustainable behavior change (Ryan & Deci, 2017). Evidence supports the effectiveness of SDT-based interventions in enhancing autonomous motivation and facilitating behavior change (Herchenroeder et al., 2024; Frielink et al., 2015; Vansteenkiste et al., 2020). A meta-analysis by Sheeran et al. (2020) found that SDT-based interventions produced small but significant effects on reducing alcohol consumption and increasing autonomous motivation, supporting their potential in promoting lasting behavioral change. Overall, the evidence supports the effectiveness of SDT-based interventions in promoting behavior change.

This study presents the cognitive-autonomous motivation program (CAMP), which was developed based on the SDT by Ryan and Deci (2017). The intervention aimed to enhance intrinsic motivation by facilitating the internalization of extrinsic motivators through the fulfillment of basic psychological needs, thereby fostering greater readiness and intention to change behavior (Herchenroeder et al., 2024; Ryan & Deci, 2017; Sheeran et al., 2020; Vansteenkiste et al., 2020). The CAMP incorporates skills training to strengthen self-confidence and autonomous motivation for regulating alcohol use. Self-confidence serves as a key mediator in skills-based interventions, effectively supporting sustained control over alcohol consumption (Magill et al., 2020). These components collectively address previously identified gaps in intervention strategies. Accordingly, this study aimed to examine the effects of the CAMP on alcohol consumption behavior, severity of dependence, and coping ability in alcohol-dependent patients. The findings are expected to contribute to the advancement of comprehensive nursing interventions and the broader field of behavioral science, thereby promoting positive outcomes.

Literature Review

This section provides the research context related to coping ability, alcohol consumption behavior, and the severity of dependence among alcohol-dependent patients. It also provides evidence supporting the use of the self-determination theory (SDT) as the theoretical framework underpinning the study. Additionally, the research hypothesis and conceptual framework guiding the investigation are presented.

Theoretical Background

The self-determination theory (SDT) explains human motivation, focusing on conscious motivation and fulfilling basic psychological needs, including autonomy, competence, and relatedness. These needs are essential for fostering intrinsic motivation, which leads to retention behavior and self-control. The SDT theory asserts that individuals can control their lives, make choices, and achieve success. This theory includes six mini-theories: cognitive evaluation, organismic integration, basic psychological needs, causality orientations, goal contents, and relationship motivation theories (Ryan & Deci, 2017).

A substantial body of research supports the application of SDT in behavior change interventions, with many programs selectively its mini-theories. A recent scoping review identified the satisfaction of basic psychological needs as central to SDT-based experimental designs. These needs are essential for fostering autonomous motivation and sustaining long-term behavioral change (Herchenroeder et al., 2024). Their satisfaction is strongly associated with improved well-being and positive behavioral outcomes (Vansteenkiste et al., 2020). Evidence consistently demonstrates the effectiveness of SDT-informed interventions in promoting and maintaining health-related behavior change (Frielink et al., 2015; Herchenroeder et al., 2024; Sheeran et al., 2020; Vansteenkiste et al., 2020). These interventions enhance autonomous motivation, which contributes to improved health outcomes and sustained behavioral adherence (Sheeran et al., 2020). Furthermore, Courtney et al. (2024) reported that individuals with higher intrinsic motivation exhibited lower levels of alcohol consumption, reinforcing the utility of SDT in addressing substance use behaviors.

Alcohol Consumption Behavior and Coping Ability in Alcohol-Dependent Patients

Failure to maintain retention behaviors remains a significant healthcare challenge, with relapse rates ranging from 37.66 to 56.1 percent among alcohol-dependent patients (PMNIDAT, 2024). Empirical research consistently demonstrates a significant interrelationship between alcohol consumption behavior, severity of dependence, and coping ability. Relapse is frequently linked to low self-confidence and maladaptive coping strategies that increase vulnerability during stressful events (Courtney et al., 2025; Shanmugam et al., 2021; Venkateswaran & Thirumalai, 2024). The severity of dependence further influences these dynamics. This issue impacts individuals at physical, psychosocial, social, and healthcare system levels, contributing to the public health burden of alcohol use (World Health Organization [WHO], 2024).

Despite substantial empirical support for the efficacy of psychological interventions in the treatment of alcohol dependence, sustained behavioral change remains a significant challenge, particularly in Thailand. Analysis reveals strengths, limitations, and gaps in treatment, particularly around those attributed to diminished motivation and self-regulation, low self-confidence, and negative self-perception (Akhajan et al., 2017; Boonyang et al., 2019; Ratsamesuwiwat et al., 2020). These issues have driven the development of the cognitive-autonomous motivation program (CAMP), which emphasizes participant responsibility for behavior change. The program integrates evidence-based strategies derived from the SDT and established behavior change interventions. Its primary aims are to support autonomous behavioral regulation, strengthen coping skills, and reduce both alcohol consumption and the severity of dependence.

Research Hypotheses

The following hypotheses were proposed for this study to study the impact of the cognitive-autonomous motivation program (CAMP):

H1: Alcohol-dependent patients who participate in the CAMP will demonstrate statistically significant reductions in alcohol consumption behavior and severity of dependence at four- and eight-weeks following hospital discharge, compared to their baseline scores.

H2: Alcohol-dependent patients who participate in the CAMP will demonstrate statistically significant reduction in alcohol consumption behavior and severity of dependence compared to those who do not participate in the program.

H3: Alcohol-dependent patients who participate in the CAMP will demonstrate statistically significant improvement in coping ability at four- and eight-weeks following hospital discharge, compared to their baseline scores.

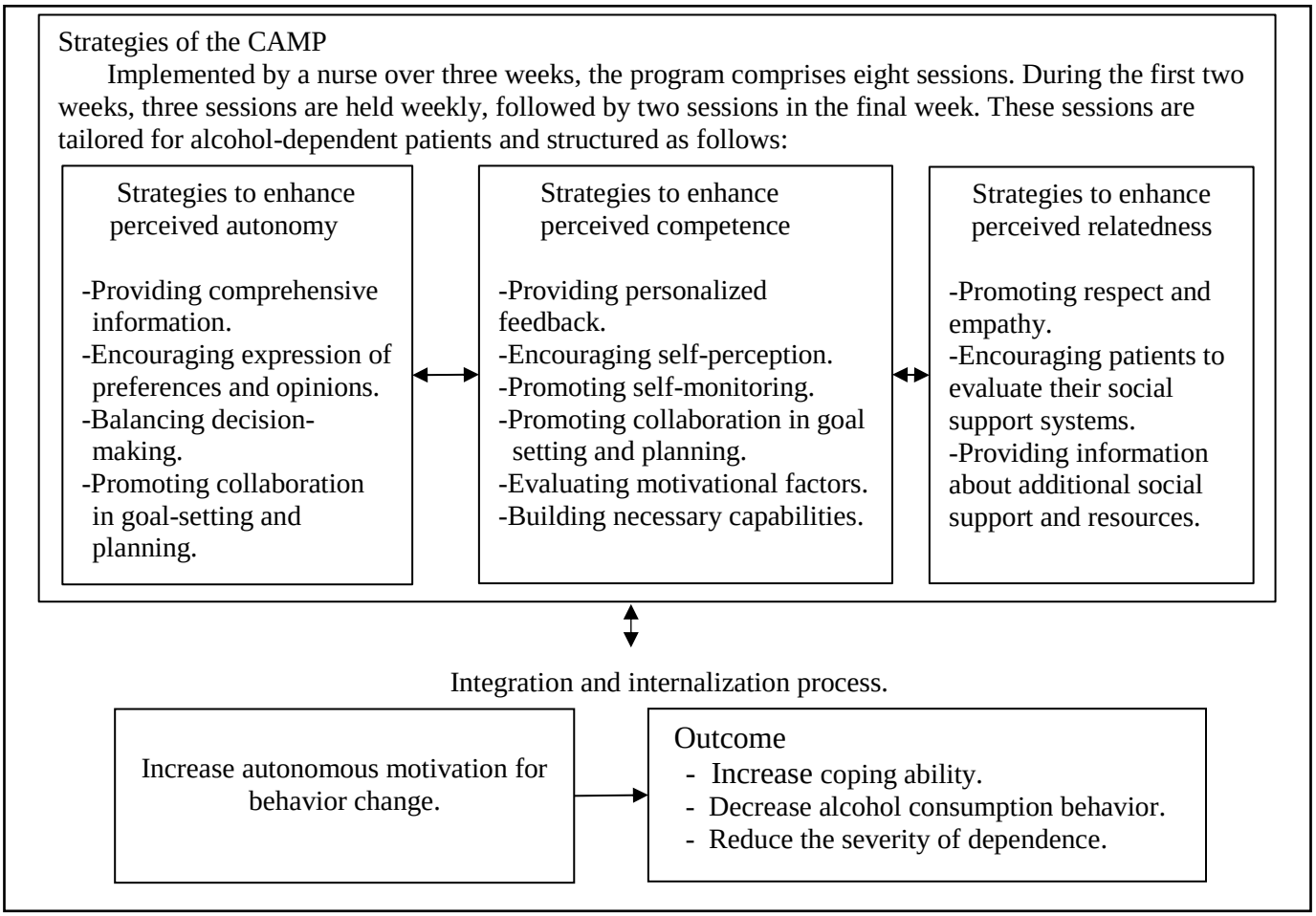
H4: Alcohol-dependent patients who participate in the CAMP will demonstrate statistically significant improvement in coping ability compared to those who do not participate in the program.

Conceptual Framework

The present study was guided by SDT (Ryan & Deci, 2017). The cognitive-autonomous motivation program (CAMP) enhances patients' motivation for behavior change by strengthening satisfaction of basic needs: autonomy, competence, and relatedness. These interconnected needs foster intrinsic motivation by internalizing external values and regulation. This process enables patients to adopt autonomous regulation styles characterized by voluntary, internally-driven behavior change. Upon completing the program, the patients demonstrated improved coping ability, reduced alcohol consumption, and decreased dependence severity, especially when spontaneously confronting undesirable life events and having a sense of autonomy (Chan et al., 2019; Sheeran et al., 2020). This process is illustrated in Figure 1.

Figure 1

Conceptual Framework



Method

Research Design

This study applied a quasi-experimental approach with a repeated measures design (Polit & Beck, 2021). It utilized a pre-posttest and follow-up structure with two participant groups: an experimental group and a control group. Research outcomes were assessed through standardized questionnaires, while participants' verbal and nonverbal communication during program implementation was systematically

observed. Data were collected between December 2023 and May 2024 after obtaining informed consent from all participants.

Research Setting

The study was conducted among Thai alcohol-dependent patients who received treatment at the addiction ward of the Thai tertiary care hospital. The institute is recognized as a leading national center for addiction treatment and operates under the Department of Medical Science, Ministry of Public Health, Thailand. Follow-up data were obtained through structured telephone interviews.

Participants/Sample

The eligible participants in this study were 71 Thai patients diagnosed with alcohol dependence who had completed alcohol detoxification and were receiving treatment in the addiction ward of a tertiary care hospital in Thailand. Inclusion criteria included age between 18 and 59 years, completion of alcohol detoxification, mild alcohol withdrawal symptoms as assessed by the Clinical Institute Withdrawal Assessment for Alcohol–Revised (Sullivan et al., 1989), and no cognitive impairment based on the Thai Mini-Mental State Examination, and the ability to communicate in Thai. Participants were excluded if they had severe physical complications or exhibited psychotic symptoms.

The sample size was determined using G*Power software with an effect size of .26, a statistical power of .95, and a significance level of .05. To accommodate a potential 10% attrition rate, the target sample was increased to 76 participants, evenly allocated to the experimental and control groups. During the outcome measurement phase, three participants withdrew and could not be contacted. Additionally, one outlier from each group was excluded from the analysis, resulting in a final sample of 71 participants, comprising 36 in the experimental group and 35 in the control group.

Sampling and Sample Procedures

Purposive sampling was employed to recruit eligible participants who met the inclusion criteria and consented to participate. Research assistants enrolled the participants and assigned them to groups based on data collection timeframes to reduce the risk of contamination. Data collection for the experimental group (n = 36) took place during the first timeframe, while the control group (n = 35) was assigned to the second, with a two-week gap separating each timeframe. Additionally, participants were matched according to gender distribution and alcohol craving levels to control for potential confounding variables.

Instruments

Screening and Sample Selection Instruments

Mini-Mental State Examination–Thai 2002 (MMSE-Thai 2002). The MMSE-Thai 2002 is the Thai version of the original MMSE developed by Folstein et al. (1975), translated by the department of medical service, ministry of public health, Thailand. It is widely used to assess and detect cognitive impairment across various populations and consists of eleven items that evaluate cognitive function across five key domains.

Thai Version of the Alcohol Craving Questionnaire-Revised (ACQ-R). The ACQ-R is an adaptation of the original ACQ developed by Raabe et al. (2005 as cited in Sonlar & Uthis, 2014) translated and revised the instrument for the Thai population by forward-backward translation. The ACQ-R uses a 7-point scale to measure the intensity of alcohol craving and demonstrates high reliability with a Cronbach's alpha of .99.

Clinical Institute Withdrawal Assessment of Alcohol Scale Revised (CIWA-Ar). Sullivan and colleagues developed this standardized instrument, which consists of ten questions reflecting the symptoms of alcohol withdrawal. This instrument is widely used to measure the severity of alcohol withdrawal symptoms.

Data Collection Instruments

Demographic Data Questionnaire. This instrument developed by the researchers included variables such as age, gender, education level, income, physical history, duration of alcohol use, other substance use, number of readmissions, and family history of alcohol and other substance use.

Brief COPE Inventory Thai Version. The Brief COPE inventory Thai version is designed to assess coping ability. It was developed by Caver et al. (1989) and translated into Thai by Numsang and Tantrarungroj (2018) using forward-backward and dual-panel translation methods. The brief COPE inventory categorizes coping into three dimensions: problem-focused, emotion-focused, and avoidance coping. In this study, the Thai version demonstrated a Cronbach's alpha of .74.

Alcohol Consumption Assessment (ACA). The ACA developed by Suktrakul et al. (2011), is a structured instrument used to evaluate alcohol consumption based on the type, frequency, and quantity consumed. The reliability of the ACA was assessed using the test-retest method, and Pearson's correlation was .87.

Severity of Alcohol Dependence Questionnaire (SADQ). The SADQ developed by Stockwell et al. (1979), is a 20-item scale designed to assess the severity of alcohol dependence with responses scored from 0 to 3. Srikosai et al. (2014) translated the Thai version. This study demonstrated a Cronbach's alpha of .82.

Experimental Instrument

The Cognitive-Autonomous Motivation Program (CAMP). The researchers developed the CAMP based on the principles of SDT (Ryan & Deci, 2017). The content of the CAMP was validated and refined based on feedback from five experts. Subsequently, a pilot study was conducted to assess the feasibility, leading to further revisions to its structure and content prior to implementation in the present study.

This program incorporates the three core components of basic need satisfaction from the SDT: autonomy, competence, and relatedness. These components contribute to a more autonomous regulation style, which reflects an increase in autonomous motivation, enabling individuals to take responsibility for managing behavioral changes in alcohol use. The program was structured over three weeks and follows a group process. It consists of eight sessions, each lasting 45 to 50 minutes. The schedule comprises three sessions per week during the first two weeks and two sessions in the third week. The intervention is organized into two principal components: (1) promoting self-acceptance of alcohol use behaviors, personal strengths, and motivation for behavioral regulation; and (2) providing skills training to develop self-competence in achieving sustained behavior change. A detailed outline of the eight sessions as presented.

Sessions 1-2 focused on enhancing participants' self-awareness and understanding of psychological needs through personalized graphic feedback and behavioral self-assessment. The participants explored life goals and basic psychological needs, engaging in activities to reinforce perception of personal strengths.

Session 3 enhanced participants' understanding of the motivation to regulate behavior change through self-analysis, recall of personal strengths, and review of goal-setting.

Session 4 enhanced participants' perception of locus causality in the relapse to heavy alcohol use through self-analysis about triggers in relapsing to alcohol use, recall of personal strengths, and integration of personal strengths into strategies for driving successful management of triggers.

Sessions 5-7 increased the participants' confidence in the critical skills that help to achieve behavior change in alcohol use, including emotional regulation, drug-refusal skills, social skills, and coping skills through skills training.

Session 8 promoted the participants' sense of self-monitoring through the strategies, including encouraging goal-setting, creating long-term plans based on lessons learned from this program, and supporting basic psychological needs for engaging in real-life behavior change.

Procedure

Following institutional review board (IRB) approval, eligible participants were recruited, with study objectives, confidentiality, and anonymity explained before obtaining verbal assent and written consent. The participants were matched by alcohol craving to control confounding variables. Seventy-six alcohol-dependent patients were assigned to experimental (n = 38) and control (n = 38) groups across two distinct time frames separated by a two-week interval to prevent contamination. Baseline assessments of coping ability, alcohol consumption, and severity of dependence were collected prior to the intervention. The experimental group received the CAMP plus conventional nursing care, while the control group received conventional nursing care alone. Follow-ups occurred via telephone at four- and eight-weeks following hospital discharge. Following the withdrawal of three participants and the exclusion of two due to outlier analysis, the final sample comprised 71 participants, with 36 in the experimental group and 35 in the control group. Manipulation checks assessed motivation to change as a moderator variable.

Data Analysis

Descriptive statistics were used to analyze the participants' characteristics and health history. Chi-square and Fisher's exact tests compared categorical variables, while t-tests assessed continuous variables between groups at baseline. Repeated measures MANOVA evaluated the effects of CAMP on outcomes, with significance set at $p < .05$. Preliminary analyses confirmed assumptions of multivariate normality, linearity, and absence of multicollinearity. Levene's test indicated a violation of homogeneity of variance ($p < .01$); therefore, Pillai's Trace was used to account for this violation (Plichta & Kelvin, 2013).

Ethical Considerations

This study followed ethical guidelines for research. The researcher met with the participants after the ethics committees had granted approval. Before obtaining written informed consent, the researcher provided detailed information about the research protocol, objectives, potential benefits, risks, and confidentiality. The participants were explicitly informed that involvement in the study was voluntary and that they could withdraw at any time without consequence. This information was conveyed through verbal explanations and information sheets.

Results

This section begins with the sample characteristics, followed by a thorough examination of hypotheses testing using repeated-measures multivariate analysis of variance.

Sample Characteristics

The sample consisted predominantly of males (91.50%) with a mean age of 42.80 ± 9.00 years. More than half of the participants (60.56%) reported no underlying health conditions. However, 59.20% had been diagnosed with alcohol use disorder for more than 10 years, and 66.09% reported continuous alcohol consumption for over 6 months. Furthermore, 70.40% had experienced 2-5 hospital admissions related to alcohol use problems. Most participants did not report a family history meeting the criteria for alcohol or other substance use disorders (Table 1).

Hypotheses Testing Results

Alcohol Consumption Behavior and Severity of Dependence

Table 2 presents the results of a repeated measures MANOVA, indicating a statistically significant interaction between time and group on alcohol consumption behavior and severity of dependence (Pillai's Trace = .25, F = 5.64, p = .00). These findings suggest that following the program yielded significant changes occurred over time with the interaction between time and group affecting both alcohol consumption behavior and severity of dependence. A within-subjects comparison was performed whether the changes within the groups over the three time points were statistically significant. The results revealed significant differences across the time periods (Pillai's Trace = .82, F = 76.74, p = .00). Furthermore, significant

differences were observed between the experimental and control groups (Pillai's Trace = .16, F = 6.64, p = .00), suggesting that the intervention had a significant impact on the outcomes.

In the experimental group, the mean score for alcohol consumption behavior and severity of dependence scores at Time 2 were statistically and significantly decreased from Time 1 (mean difference = 541.03, p = .00*;* mean difference = 15.89, p = *.00*, respectively); Time 3 was also statistically and significantly decreased from Time 1 (mean difference = 497.97, p = .00; mean difference = 15.47, p = .00, respectively). On one hand, although the alcohol consumption behavior scores and severity of dependence at Time 3 were slightly increased from Time 2, there were no statistically significant differences (mean difference = –43.06, p = .15; mean difference = –.42, p =. 67, respectively) (Table 3).

At baseline, no statistically significant differences were observed in mean alcohol consumption behavior and severity of dependence between the experimental and control groups (mean difference = –38.85, p = *.59*; mean difference = –.85, p = .48, respectively). In contrast, both variables demonstrated statistically significant differences at Time 2 compared to baseline (mean difference = –222.02, p = *.00*; mean difference = –5.91, p = .01, respectively) and at Time 3 compared to baseline (mean difference = –310.79, p = .00; mean difference = –9.09, p = *.00*, respectively) (Table 3).

Table 1

Characteristics and Health History of the Participants

Demographic Characteristics	Experimental Group (n = 36) n (%)	Control Group (n = 35) n (%)	Total (N = 71) N (%)	Statistical Value	p-value
Gender					
Male	33(91.70)	32(91.40)	65(91.50)	.00[a]	1.00
Female	3 (8.30)	3(8.60)	6(8.50)		
Age					
Mean (SD)	41.61 (9.39)	44.03(8.55)	42.80(9.00)	–1.13[b]	.59
Range	26-59	26–57	26-59		
Health Underlying History					
No	20(55.60)	23(65.70)	43(60.56)	2.45[c]	.29
Yes	16(44.40)	12(34.30)	28(34.44)		
Duration of Diagnosis with AUD					
0–5 years	7(19.40)	4(11.40)	11(15.50)	4.27[c]	.37
6–10 years	10(27.80)	8(22.90)	18(25.40)		
≥ 11 years	19(52.80)	23(65.7)	42(59.20)		
Duration of Continuous Alcohol Use					
< 1 months	2(5.60)	2(5.70)	4(5.63)	.50[c]	.99
1–3 months	6(16.70)	5(14.30)	11(15.49)		
4–6 months	5(13.90)	6(17.10)	11(15.49)		
≥ 7 months	23(63.9)	22(62.8)	45(66.09)		
Frequency of Admission					
First time	11(30.60)	10(28.60)	21(29.60)	.03[a]	1.00
2–5 times	25(69.40)	25(71.40)	50(70.40)		
Other SUD					
No	10(27.80)	10 (28.57)	20(28.17)	2.11[a]	.15
Yes	26(72.20)	25(71.43)	51(71.83)		
Family History of AUD					
No	32(88.90)	21(60.0)	53(74.60)	7.82[a]	.01
Yes	4(11.10)	14(40.0)	18(25.40)		
Family History of SUD					
No	35(97.20)	29(82.90)	64(90.10)	4.12[a]	.04
Yes	1(2.80)	6(17.10)	7(9.90)		

Note. a = Fisher's Exact Test, b= Independent *t*-test, C = Chi-square, AUD = Alcohol use disorder, SUD = Substance use disorder.

Table 2

Repeated Measure MANOVA of Alcohol Consumption and Severity of Dependence Score

Effect	Pilai's Trace	*F*	Hypothesis *df*	Error *df*	*p*-value	Partial Eta Square
Between Subjects						
Group	.16	6.64	2	68.00	.00	.16
Within Subjects						
Time	.82	76.74	4	66.00	.00	.82
Time*Group	.25	5.64	4	66.00	.00	.25

Table 3

Comparison of the Mean Scores for the Alcohol Consumption Behavior and Severity of Dependence Across Time Points by Time and Group

Variables /Time	Group	Between Groups Mean (SD)	Mean difference	*p*-value	*F*	Within Group Mean difference Time 1	Time 2	Time 3
Alcohol Consumption								
Time 1	EG	779.78(297.88)	–38.85	.59	.29	–	541.03(.00)	497.97(.00)
	CG	818.63(306.33)				–	357.86(.00)	226.03(.00)
Time 2	EG	238.75(193.19)	–222.02	.00	16.35	541.03(.00)	–	–43.06(.15)
	CG	460.77(264.88)				357.86(.00)	–	–131.83(.00)
Time 3	EG	281.81(246.05)	–310.79	.00	24.55	497.97(.00)	–43.06(.15)	–
	CG	592.60(281.79)				226.03(.00)	–131.83(.00)	–
Severity of Dependence								
Time 1	EG	35.61(5.05)	–.85	.48	.51	–	15.89(.00)	15.47(.00)
	CG	36.46(4.87)				–	10.83(.00)	7.23(.00)
Time 2	EG	19.72(11.10)	–5.91	.01	6.46	15.89(.00)	–	–.42(.67)
	CG	25.63(8.23)				10.83(.00)	–	–3.60(.00)
Time 3	EG	20.97(11.92)	–9.09	.00	15.66	15.47(.00)	–.42(.67)	–
	CG	29.23(6.62)				7.23(.00)	–3.60(.00)	–

Note. EG = Experimental group, CG = Control group, Time 1 = Baseline, Time 2 = Week 4 following hospital discharge, Time 3 = Week 8 following hospital discharge.

Coping Ability

This study categorized coping ability into three distinct dimensions: problem-focused coping, emotional-focused coping, and avoidance coping. The results presented in Table 4 reveal a statistically significant interaction between time and group for each dimension of coping ability (problem-focused, emotional-focused, and avoidance coping) (Pillai's Trace = .47, F = 9.52, p = .00). Additionally, significant differences were found between the experimental and control groups across measurement time (Pillai's Trace = .53, F = 24.67, p = .00)

Table 4

Repeated Measure MANOVA of Each Dimension of Coping Ability

Effect	Pilai'sTrace	*F*	Hypothesis *df*	Error *df*	*p*-value	Partial Eta Square
Between Subjects						
Group	.53	24.67	3	67	.00	.53
Within Subjects						
Time	.63	17.95	6	64	.00	.63
Time*Group	.47	9.52	6	64	.00	.47

In the experimental group, the mean score for problem-focused coping ability scores exhibited significant improvements at Time 2 and Time 3 compared to Time 1 (mean difference = –.40, p = .00; mean difference = –.42, p = .00, respectively). However, the improvement from Time 2 to Time 3 was not statistically significant (mean difference = –.02, p = .77).

Emotion-focused and avoidance coping ability scores showed a significant decrease over time. At Time 2, scores were significantly lower than at Time 1 (emotion-focused coping ability: mean difference = .20, p = *.00*; avoidance coping ability: mean difference = .54, p = .00). Similarly, scores at Time 3 remained significantly lower than at Time 1 (emotion-focused coping ability: mean difference = .19, p = .00; avoidance coping ability: mean difference = .53, p = .00).

Considering the difference between groups, the mean scores for problem-focused, emotion-focused, and avoidance coping abilities between the experimental and control groups were not statistically significant at baseline. However, at Times 2 and 3, the experimental group demonstrated a statistically significant increase in problem-focused coping ability compared to the control group (mean difference = .20, p = .04*;* mean difference = .22, p = .04, respectively). In contrast, the mean scores for emotion-focused and avoidance coping abilities at Times 2 and 3 exhibited statistically significant reductions in the experimental group compared to the control group (emotion-focused coping ability: mean difference = –.26, p = .00; mean difference = –.40, p = .00 and; avoidance coping ability: mean difference = –.52, p = .00; mean difference = –.60, p = .00, respectively) (see Table 5).

Table 5

Comparison of the Mean Scores for Each Dimension of Coping Ability Across Time Points by Time and Group

Variables/Time	Between Groups					Within Group		
	Group	Mean (SD)	Mean difference	*p*-value	F	Mean difference		
						Time 1	Time 2	Time 3
Coping Ability								
Problem-Focused Coping Ability								
Time 1	EG	2.29(.35)	–.05	.69	.16	–	–.40(.00)	–.42(.00)
	CG	2.34(.55)				–	–.15(.12)	–.15(.12)
Time 2	EG	2.69(.39)	.20	.04	4.20	–.40(.00)	–	–.02(.77)
	CG	2.49(.42)				–.15(.12)	–	.00(1.00)
Time 3	EG	2.71(.37)	.22	.04	4.12	–.42(.00)	–.02(.77)	–
	CG	2.49(.51)				–.15(.12)	–.15(.12)	–
Emotional-Focused Coping Ability								
Time 1	EG	2.38(.36)	–.12	.17	1.85	–	.20(.00)	.19(.00)
	CG	2.50(.38)				–	.06(.91)	-.04(.47)
Time 2	EG	2.18(.31)	–.26	.00	11.25	.20(.00)	–	-.01(.70)
	CG	2.44(.36)				.06(.91)	–	-.10(.03)
Time 3	EG	2.19(.29)	–.40	.00	20.24	.19(.00)	–.01(.70)	–
	CG	2.54(.36)				–.04(.47)	–.10(.03)	–
Avoidance Coping Ability								
Time 1	EG	2.57(.34)	–.09	.23	1.42	–	.54(.00)	.53(.00)
	CG	2.65(.34)				–	.10(.11)	.01(.81)
Time 2	EG	2.03(.24)	–.52	.00	51.43	.54(.00)	–	–.01(.02)
	CG	2.55(.37)				.10(.11)	–	.09(.12)
Time 3	EG	2.04(.19)	–.60	.00	82.40	.53(.00)	–.01(.02)	–
	CG	2.64(.34)				.01(.81)	–.09(.12)	–

Note. EG = Experimental group, CG = Control group**,** Time 1 = Baseline, Time 2 = Week 4 following hospital discharge, Time 3 = Week 8 following hospital discharge.

Discussion and Conclusion

Discussion of Main Results

This study investigated the effectiveness of the cognitive-autonomous motivation program (CAMP) on coping ability, alcohol consumption behavior, and severity of dependence in alcohol-dependent patients in Thailand. The study findings indicate that the experimental group showed significant improvements in coping ability and reductions in alcohol consumption behavior and severity of dependence from baseline. These improvements were significantly greater than those observed in the control group at week 4- and 8 following hospital discharge ($p < .05$). Both groups exhibited slight improvements in problem-focused coping after completing the CAMP; however, the scores of the experimental group were significantly higher than the control group at both follow-ups ($p < .05$). Additionally, the experimental group demonstrated significant reductions in emotion-focused and avoidance coping compared to the control group over time ($p < .05$).

The CAMP grounded in the SDT aims to improve coping abilities, reduce alcohol consumption, and decrease severity of dependence by fulfilling core psychological needs. By fostering intrinsic motivation, the program supports individuals in making lasting changes to alcohol use, enhancing coping skills, and mitigating the severity of dependence. These improvements contribute to long-term health and well-being, emphasizing the importance of motivation and psychological well-being in overcoming alcohol dependence. This process is further discussed as follows:

The CAMP prioritizes enhancing patients' autonomy alongside developing competence, a core element of psychological need satisfaction in SDT initiated through self-awareness and acceptance of alcohol use, while fostering autonomy and engagement in behavior change (Chan et al., 2019; Sheeran et al., 2020). Key strategies include self-evaluation of strengths, analysis of relapse triggers, and integration of motivational sources to support behavioral intention. These strategies enable patients to address change barriers and seek self-directed support (Beaulieu et al., 2024; Sheeran et al., 2020). The program also promotes a meaningful rationale for change through reflection on motivational drivers, past coping, and personal goals, thereby enhancing intrinsic motivation through positive external feedback and supporting sustained behavior change.

Skills training in emotional regulation, drug refusal, social interaction, and coping have been shown to enhance coping abilities and strengthen self-competence. These skills were practiced repeatedly until the participants reported confidence in their use. Upon completion of each session, the participants exhibited improved self-competence, as evidenced by the ability to recognize emotions, apply appropriate coping strategies, and effectively manage challenging situations. These outcomes suggest an increased capacity to implement learned skills when facing adverse life events. In support of the above findings, the evidence identified self-confidence as a key mediator in skills-based interventions that promote sustained control over alcohol consumption (Magill et al., 2019; Magill et al., 2020).

Ultimately, the program was concerned with establishing a robust support system encompassing sources that promote the perceived relatedness of the participants. Most patients reported that their families encouraged reduced alcohol consumption and offered informational support during stressful periods. However, some perceived family interactions as detrimental, citing a lack of understanding and pressure from loved ones as contributing factors to stress and relapse. The program enables individuals to access practical assistance and adopt effective coping strategies, fostering greater confidence in managing alcohol use following discharge. Additionally, social-emotional support is a key determinant of health outcomes and the sustained adoption of healthier behaviors through the provision of critical coping resources (Enns & Orpana, 2020; Shanmugam et al., 2021).

Another noteworthy point of this study is that the research collected data from alcohol-dependent patients in the same environment but at different time frames, which limited control over external factors. The timing of the study coincided with the Songkran Festival, a significant cultural event marking the Thai

new year, which may have influenced alcohol consumption among some participants in both the experimental and control groups. One participant noted that the festival's social context led to increased drinking, as alcohol was seen as essential for enjoyment. Ratsamesuwiwat et al. (2020) identified community drinking norms and festive occasions as significant factors contributing to relapse.

The above information indicates that the CAMP targets three key concepts of basic need satisfaction, which encourages patients to enhance a sense of autonomy, competence, and relatedness. These improvements foster increased autonomous motivation, whereby patients engage in behavior changes related to alcohol use based on internal, self-determined reasons. Consistent with the study by Courtney et al. (2024), individuals with higher levels of autonomous motivation for alcohol consumption reported a lower risk of problematic alcohol use.

Limitations

The study limitation included generalizability to other populations. The program was tested only among alcohol-dependent patients in the inpatient department of only one center for drug addiction treatment and rehabilitation under the Department of Medical Science in Thailand. There were no comparisons with other contexts. These results can be applicable in populations with similar contexts and treatments. Therefore, the study findings must be adjusted to fit the specific context.

Furthermore, the study measured outcome variables at four- and eight-weeks following hospital discharge, which provided insights into the trends in alcohol use behavior change among the alcohol-dependent patients. However, future research should prioritize ensuring participants' sustained commitment to these behavioral changes, particularly for long-term follow-up interventions. This is particularly important for interventions extending beyond six months.

Implications for Behavioral Science

Alcohol-dependent patients need continuous care for all disease trajectories as they encounter various factors that influence the ability to manage behavior change. The CAMP program enhances autonomous motivation by addressing patients' basic psychological needs, thereby promoting and sustaining behavior change in alcohol use. The program bridges the gap between theoretical frameworks and nursing practice, facilitating an intervention primarily executed by nurses. To integrate these findings into nursing practice and other behavioral science, healthcare providers require training in therapeutic communication and holistic care for patients with alcohol and substance use disorders, with expert-led psychological care training essential for effective implementation.

Furthermore, the CAMP program enables patients to autonomously modify alcohol-related behaviors, supporting strategic models for addiction treatment and rehabilitation. Policymakers should integrate the CAMP strategy into service plans, ensuring continuous treatment from initiation to behavior maintenance, thereby enhancing service quality and standards of care. Policy evaluation research is crucial post-implementation to assess outcomes and processes, with findings guiding necessary improvements to optimize effectiveness.

Conclusion

This study aimed to examine the effectiveness of the cognitive-autonomous motivation program (CAMP) on coping ability, alcohol consumption behavior, and dependence severity in individuals with alcohol dependence. The findings demonstrated that the program significantly reduced alcohol consumption and dependence severity while enhancing patients’ coping abilities. Furthermore, the large effect size observed suggests that CAMP has practical value for healthcare professionals by supporting patients in autonomously managing behavior changes related to alcohol use. Future research should prioritize long-term evaluation of behavioral outcomes to assess the sustainability of behavior change. Additionally, while the CAMP intervention leveraged participants' perceptions of social support, it did not incorporate direct social support within the program. To further enhance motivation and promote sustained

behavior change, future studies should integrate collaborative social support mechanisms. In conclusion, while the CAMP demonstrated effectiveness in promoting behavior change among alcohol-dependent individuals, further research is necessary to adapt the program to different contexts and to address the identified limitations for improved long-term outcomes.

Declarations

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Conflicts of Interest: The authors declare no conflicts of interest.

Ethical Approval Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of Thammasat University (Science) (protocol code COA No. 66NU093, dated 11 September 2024), and Princess Mother National Institute on Drug Abuse Treatment (protocol code COA No. 66038, dated 24 November 2024) for studies involving humans subjects.

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