Alcohol dependence and the psychological factors leading to a relapse: a hospital-based study in Vietnam

Nhat Van Trieu, Penpaktr Uthis and Sunisa Suktrakul

Faculty of Nursing, Chulalongkorn University, Bangkok, Thailand

Abstract

Purpose – To study the situation of alcohol relapse and to investigate the relationship between psychological factors and alcohol relapse in persons with alcohol dependence in Thai Nguyen hospitals, Vietnam.

Design/methodology/approach – A correlation study was conducted among 110 patients. Data were collected through structured interviews and were analyzed using descriptive statistics and Spearman's correlation coefficient (r_s).

Findings – More than two-thirds of the participants were found to relapse more than once ($\bar{X} = 2.04$, SD = 0.86). Positive outcome expectancies, cravings, negative emotional states, and maladaptive coping were positively associated with relapse ($r_s = 0.550, 0.522, 0.497; p = 0.000$ and $r_s = 0.217, p < 0.05$, respectively). While, motivation to change with three subscales had a negative correlation to relapse including recognition ($r_s = -0.199, p < 0.05$), ambivalence ($r_s = -0.331, p = 0.000$), and taking steps ($r_s = -0.606, p = 0.000$). Adaptive coping, self-efficacy, and social support were also found to be negatively correlated to relapse ($r_s = -0.535, -0.499, -0.338; p = 0.000$, respectively). However, negative outcome expectancies ($r_s = -0.024$, $p = 0.805$) and positive emotional states ($r_s = 0.081, p = 0.399$) were not significantly related to relapse.

Practical implications – The findings of this study are significant implications for relapse prevention strategies. It suggests that the essential parts of relapse prevention are through: changing alcohol expectations, increase drinking refusal self-efficacy, coping skills training, enhancing motivation to change, managing alcohol craving and expanding social support.

Originality/value – This is the first study in Vietnam which investigated the relationship between psychological factors and alcohol relapse in individuals with alcohol dependence.

Keywords Alcohol dependence, Alcohol relapse factors, Vietnam

Paper type Research paper

Introduction

In western countries, alcohol is consumed because of its quality and in order to appreciate and enjoy the beverage [1]. In the case of Vietnam, drinking is also socially accepted as evidenced by the popular catch-phrase "guests coming home were invited to tea or alcohol" [2]. Drinking is also seen as an opportunity to display masculinity as seen in the Vietnamese quote: " A man without alcohol is like a flag without wind" [3]. Needless to say, alcohol consumption is a normal part of daily life in Vietnam.

A study of alcohol consumption showed that 80% of Vietnamese males were reported as alcohol drinkers, and amongst the 80%, 40% were considered heavy drinkers [4].

This is a large burden to Vietnam both in terms of the cost of medical treatment and the social issues created by a heavy drinking culture[5]. In Vietnam, 7.3% of all deaths were estimated as being related to alcohol consumption in 2016 [6]. In the same year, nearly 10% of men aged 50 to 69 years old were reported to have died of alcohol-related liver cancer [7].

Despite preventive efforts, many people relapsed after a period of abstinence from alcohol drinking [8]. Alcohol relapse is a term used to describe the return to previous levels of drinking and is a complex phenomenon [9]. Various factors are correlated to alcohol relapse such as self-efficacy [10], outcome expectancies [11], coping strategies [12], emotional states [13], motivation [14], cravings [15] and social support [16].

After many decades of study, alcohol relapse is a common occurrence during the recovery process. This is found to be consistent in a study in Vietnam, where it was reported that 62.8% of alcohol-dependent patients had relapsed after treatment completion [17]. This is a worrying statistic as relapse causes various problems related to individual health, family conflict, public health and social problems [18].

In Vietnam, Thai Nguyen province has a high prevalence of alcohol consumption [19]. Residents believe that alcohol is an indispensable part of socializing and refusing to drink is even regarded as rude or worse [20]. In 2010, 19.7% of problem drinkers displayed alcohol dependence symptoms [21]. This number is higher compared to other provinces [22, 23]. Further, statistics from Thai Nguyen Psychiatric Hospital showed that the number of patients hospitalized due to alcohol dependence occupied nearly 42.6% of total patient beds. Furthermore, most patients (70%) unfortunately returned to drinking after treatment completion [24].

Understanding factors related to relapse allows clinicians to develop effective relapse prevention strategies [25]. Although there have been a number of studies conducted on the topic, factors correlating to relapse were varied and not consistent among different groups of peoples and cultures [26–28]. Conducting a context-specific study could provide information on the local relapse situation. There is one study in Vietnam that has explored alcohol relapse but it did not evaluate the association between alcohol relapse and its related factors [17].

Therefore, this study was designed to explore the relapse situation and to investigate the relationship between alcohol relapse and the several psychological factors amongst the Vietnamese with alcohol dependence in Thai Nguyen province.

Methods

Research design

A correlational design was used to investigate the relationship between self-efficacy, outcome expectancies, cravings, motivation, coping, emotional states, social support and alcohol relapse.

Settings

Thai Nguyen is a mountainous province in the northern region of Vietnam. The natural land area is more than 3,500 square kilometers with a population of around 1.2 million [29]. There are eight provincial hospitals and one national hospital. However, there is no specific hospital for the treatment of alcohol addiction. Patients with alcohol dependence are treated at general psychiatric hospitals or general medical hospitals.

Thai Nguyen National Hospital is a national general hospital with 1200 beds offering a wide spectrum of services. It has a psychiatric department with 24 beds that provides treatment for people with psychiatric disorders and alcohol dependence.

There are also three general provincial hospitals that provide general services for local people including Thai Nguyen A Hospital (510 beds), Thai Nguyen C Hospital (510 beds), and Thai Nguyen Gang Thep Hospital (350 beds). In these hospitals, the General Medical Department provides treatment for persons with alcohol dependence. Additionally, this department also provides treatment for patients with liver and gastrointestinal diseases due to alcohol consumption.

There are five more specialist hospitals in the area including a Psychiatric hospital, a Tuberculosis and Lung Disease hospital, a Traditional Medicine hospital, an Orthopedic and Rehabilitation hospital, and an Eye hospital. Of these, Thai Nguyen Psychiatric Hospital (150 beds) is the only hospital that caters to alcohol-dependent patients. The Male Department (50 beds) is the department providing treatment for alcohol dependence, as well as other psychiatric disorders such as schizophrenia and depression.

Although there are hospitals for patients with alcohol dependence, the current treatment in both psychiatric and general hospitals are heavily biased toward treatment such as detoxification, managing alcohol withdrawal symptoms, electrolyte rehydration and nutrition. It is noticeable that alcohol-dependent patients in the general hospital are transferred to the psychiatric hospital if they have more severe psychotic disorders such as delusions, hallucinations or agitation.

Similarly, nursing interventions provided to patients with alcohol dependence are limited to medical technological interventions such as injection, infusion and physical examination. Relapse prevention training and nursing education are rarely provided. There is also no follow-up service. As a result, most of the alcohol-dependent patients have no guidance to avoid relapse after discharge [20].

Participants
A purposive sampling method was used. Patients with alcohol dependence were enrolled following a presentation at the selected hospitals. Participants aged more than 60-years-old were screened for their mental status using the 6-item cognitive impairment test [30].

The sample size was calculated using a power analysis with an alpha of 0.05, power of 0.80 and the effect size of 0.28. To account for the missing data, we included an additional 10% increase in subjects. Therefore, the number of subjects required for this study totaled 110 patients (Table I). In each hospital, there is only one department which admits patients with alcohol dependence and the researcher purposely chose these departments from which to recruit the participants.

The participants were selected using the following inclusion criteria:

(1) Age at least 18 years old

(2) Fulfilled the criteria for alcohol dependence based on the ICD-10 (*F1x0.2*: Dependence syndrome)

(3) Had at least one relapse

No	Hospital	Number of patients	Sample
1	Thai Nguyen National Hospital	65	33
2	Thai Nguyen Psychiatric Hospital	60	31
3	Thai Nguyen A Hospital	40	21
4	Thai Nguyen C hospital	30	15
5	Thai Nguyen Gang Thep Hospital	20	10
Total		*215*	*110*

Table I.
Sample size of
participants

(4) Absence of psychiatric disorders

(5) Had good cognitive function (if age was more than 60-years-old)

(6) Able to speak, read, and understand the Vietnamese language

(7) Willingness to participate in the study

To minimize the collection bias, the researchers purposely selected the participants from the same population and used the same inclusion criteria in the five hospitals.

Instruments

A General Information Form was used to collect the demographic characteristics of the participants.

Alcohol relapse was defined as the number of patients with a re-emergence of alcohol dependence syndrome as per the International Classification of Disease Tenth Version (ICD-10) diagnostic criteria after a period of abstinence for at least one month in the last 12 months [31]. *The measurement of alcohol relapse* was developed by researchers. Cohen's Kappa (κ) was used to test for reliability and indicated a substantial agreement ($\kappa = 0.68$) [32].

Drinking Refusal Self-Efficacy Questionnaire [21] with 20 items was used to measure the ability to refuse alcohol in three different situations: social pressure to drink, opportunistic drinking and emotional relief gained from the effects of alcohol. Each item was rated on a 4-point Likert scale. The higher the score, the better is the self-efficacy. The Cronbach's alpha was 0.86.

Drinking Expectancy Questionnaire (DEQ) [33] listing with 37 items was used to measure outcome expectancies. There were two subscales: positive and negative outcome expectancies. Each item was assessed on a 5-point Likert scale. Higher scores indicated more positive outcome expectancies. The Cronbach's alpha of the DEQ's subscales was 0.88 and 0.74.

Penn Alcohol Craving Scale [34] with 5 questions was used to measure alcohol cravings. This scale measured the frequency, intensity, duration, resistance and the average level of alcohol craving. Each question was scaled from 0 to 6. Higher scores indicated more frequent and more severe cravings. The Cronbach's alpha was 0.98.

Stage of Change Readiness and Treatment Eagerness Scale version 8 for alcohol (SOCRATES-8A) [35] with 19 items was used to measure motivation to change drinking behaviors. It comprised three subscales: recognition; ambivalence and taking positive steps. Each item was scored using a 5-point Likert scale. The higher the score, the better is the motivation. The Cronbach's alpha of three subscales of SOCRATES-8A was 0.77, 0.76 and 0.89.

Coping Behaviors Inventory (CBI) [36] including 36 items was used to measure coping strategies. There were two subscales: adaptive and maladaptive coping. Each item was rated on a 4-point Likert scale. The higher score indicated a higher frequency of use. The Cronbach's alpha of the CBI's subscales was 0.79 and 0.80.

Positive Affect and Negative Affect Schedule [37] was used to identify the emotions that caused patients to be more likely to drink. This scale consisted of 10 items of Positive Affect (PA) and 10 items of Negative Affect (NA). The responses used a 5-point Likert scale. The higher scores indicated a higher effect of PA or NA on drinking. The Cronbach's alpha of PA and NA was 0.74 and 0.83.

Multidimensional Scale of Perceived Social Support [38] including 12 items was used to assess social support from friends, family and significant others. Items were measured on a 7-point Likert scale. The higher the scores, the stronger is the support. The Cronbach's alpha was 0.83.

Ethical consideration
This study was submitted for ethical approval to the Institutional Review Board (IRB) of
Hanoi University of Public Health, Vietnam. Approval was granted on January 31, 2019. The
IRB code was 019-010/DD-YTCC.

Data collection
Data were collected from March 1, 2019 to April 1, 2019, using structured questionnaires and
face-to-face interviews. Before collecting data, the researcher gathered permission to collect
data from the Directors of each hospital in Thai Nguyen, Vietnam. After that, nurses were
asked to identify patients with alcohol dependence. Following that, selected patients were
asked if they would be willing to participate in this study and those who met the inclusion
criteria were recruited to join the study. If patients consented, the researcher would proceed to
explain all steps and human rights protection, and subsequently interviewed the participants
using all the selected questionnaires. The duration of the interview was about 30–45 minutes.

Data analysis
Data were analyzed using the Statistical Package for Social Sciences, version 17.0 (SPSS 17.0).
Descriptive statistics and Spearman's correlation coefficient were used.

Results
Characteristics of the participants
All participants were males, with a mean age of 49.08 (SD = 0.76). Most of them (75.5%) were
from Thai Nguyen province and 98.2% were married. Nearly two-thirds (64.5%) had
attended secondary school. Approximately 65% were farmers, and 62.7% had a monthly
income greater than the minimum standard of daily living. Participant's mean age of first
alcoholic drink was 17.9 years old (SD = 2.4), with 11.4 years (SD = 5.2) mean duration of
alcohol dependence. Of all participants, 77.3% of participants reported a positive family
history of drinking (Table II).

Characteristics of dependent and independent variables
Alcohol relapse was the dependent variable. The number of alcohol relapses ranged from 1 to
4 with a mean (SD) of 2.04 (0.86). In the study, 34 participants (30.9%) reported relapsing just
once in the previous 12 months. Notably, 69.1% of the participants relapsed more than once.
In particular, 42 (38.2%) relapsed twice, 30 (27.3%) thrice, while 4 (3.6%) participants
relapsed four times (Table III).

Regarding independent variables, self-efficacy was at a moderate level with a mean (SD) of
46.79 (4.54). The mean of positive and negative outcome expectancies was 72.25 (9.25) and 46.48
(6.58), respectively. Craving was at a moderate level with a mean of 17.10 (7.42). Motivation to
change was at a low level. The mean of recognition, ambivalence, and taking positive steps
subscales was 22.75 (3.69), 12.80 (2.82), and 25.84 (5.31), respectively. While the mean of
adaptive coping and maladaptive coping was 14.68 (4.12) and 15.42 (5.14), respectively. The
mean of positive and negative emotional states was 17.00 (3.27) and 24.74 (4.56), respectively.
Social support was at a moderate level with a mean of 49.90 (6.42) as shown in Table IV.

Relationship between independent variables and alcohol relapse
There was a positive relationship between alcohol relapse and positive outcome expectancies,
cravings, negative emotional states and maladaptive coping (r_s = 0.550, 0.522, 0.497;
p = 0.000 and r_s = 0.217, $p < 0.05$). Motivation to change drinking behavior within the three

Social-demographic characteristics	Frequency	%
Age (years) (min-max = 32–67 years old, $\bar{X}$ = 49.08, SD = 7.63)		
<40	10	9.1
40–59	89	80.9
≥60	11	10
Gender		
Male	110	100
Female	0	0
Region (province)		
Bac Kan	7	6.4
Cao Bang	8	7.3
Lang Son	12	10.9
Thai Nguyen	83	75.5
Marital status		
Single	2	1.8
Married	108	98.2
Education levels		
Primary school	18	16.4
Secondary school	71	64.5
High school	16	14.5
College/University	5	4.5
Occupation		
Officer and government officer	2	1.8
Own business	1	0.9
Worker	8	7.3
Farmer	71	64.5
Laborer	24	21.8
Other (retired)	4	3.6
Income (USD/month) (min-max = 0–301.7, $\bar{X}$ = 96.3, SD = 71.4)		
≤56	41	37.3
>56	69	62.7
Age of first drink (years) (min-max = 13–25, $\bar{X}$ = 17.9, SD = 2.4)		
≤15	14	12.7
16–20	82	76.4
≥21	12	10.9
Duration of alcohol dependence (years) (min-max = 4–25, $\bar{X}$ = 11.4, SD = 5.2)		
<5	4	3.6
6–10	67	60.9
11–15	17	15.5
16–20	20	18.2
≥21	2	1.8
Family history of alcohol consumption		
Yes:	85	77.3
-Father	3	3.5
-Siblings	82	96.5
No	25	22.7

Table II.
Social-demographic characteristics of participants (*n* = 110)

subscales had a negative relationship with alcohol relapse at a low to a high level: recognition ($r_s = -0.199$, $p < 0.05$), ambivalence ($r_s = -0.331$, $p = 0.000$), and taking positive steps ($r_s = -0.606$, $p = 0.000$).

Similarly, adaptive coping, self-efficacy and social support were negatively correlated to alcohol relapse ($r_s = -0.535$, -0.499, -0.338; $p = 0.000$). In contrast, negative outcome expectancies ($r_s = -0.024$, $p = 0.805$) and positive emotional states ($r_s = 0.081$, $p = 0.399$) were not significantly related to alcohol relapse (Table V).

Dependent variable	Frequency	(%)
Alcohol relapse (min-max = 1–4, $\bar{X}$ = 2.04, SD = 0.86)		
1 relapse	34	30.9
2 relapses	42	38.2
3 relapses	30	27.3
4 relapses	4	3.6

Table III.
Characteristics of
alcohol
relapse ($n = 110$)

Independent variables	Frequency (%)	Mean	SD
Self-efficacy			
Low perception	10 (9.1)	36.80	1.54
Moderate perception	100 (90.9)	47.79	3.37
High perception	0	0	0
Overall	110 (100)	46.79	4.54
Outcome expectancies			
Positive outcome expectancies		72.25	9.25
Negative outcome expectancies		46.48	6.58
Craving			
Slight craving	48 (43.6)	9.71	2.89
Moderated craving	16 (14.5)	17.69	1.70
High craving	46 (41.8)	24.61	2.74
Overall	110 (100)	17.10	7.42
Motivation			
Recognition		22.75	3.69
Ambivalence		12.80	2.82
Taking steps		25.84	5.31
Coping			
Adaptive coping		14.68	4.12
Maladaptive coping		15.42	5.14
Emotional states			
Positive emotional states		17.00	3.27
Negative emotional states		24.74	4.56
Social support			
Low social support	0	0	0
Moderated social support	99 (90)	48.34	4.58
High social support	11 (10)	63.91	2.12
Overall	110 (100)	49.90	6.42

Table IV.
Characteristics of
independent
variables ($n = 110$)

Variables	Correlation coefficients*	p-value	Interpretation
Self-efficacy	−0.499	0.000	Moderate
Outcome expectancies			
Positive outcome expectancies	0.550	0.000	Moderate
Negative outcome expectancies	−0.024	0.805	No relationship
Craving	0.522	0.000	Moderate
Motivation			
Recognition	−0.199	0.037	Very weak
Ambivalence	−0.331	0.000	Weak
Taking steps	−0.606	0.000	Strong
Coping			
Adaptive coping	−0.535	0.000	Moderate
Maladaptive coping	0.217	0.023	Weak
Emotional states			
Positive emotional states	0.081	0.399	No relationship
Negative emotional states	0.497	0.000	Moderate
Social support	−0.338	0.000	Weak
Note(s): *2-tailed			

Table V.
Relationship between independent variables and alcohol relapse (*n* = 110)

Discussion

Characteristics of participants

The majority of participants (89%) were 40- to 59-years-old. This indicates that alcohol dependence and relapse was more prevalent among individuals in the late-adult group. This finding is supported by a population survey in Vietnam which reported drinking to be common among those between the age of 46–54 years old [39].

A possible explanation for the large proportion of male alcohol consumers can be attributed to the Vietnamese culture where women are not expected to consume alcohol. Furthermore, there is a high expectation for men to drink with a common belief that a man who does not drink is considered a coward [3].

Most participants (98.2%) were married and 62.7% reported a monthly income greater than the minimum income for daily living. This could mean that the patients were not living in poverty, were financially independent and were more able to purchase alcohol. These findings were in accordance with a study in Vietnam which reported that the majority of the drinkers were currently married and lived independently within their community [40].

Most participants (76.4%) started to consume alcohol in their youth (16–20-years-old). The mean duration of alcohol dependence was 11.4 years, where 60.9% reported having experienced alcohol dependence for 5–10 years. These findings were supported by previous Vietnamese researchers who reported that most drinkers had been dependent for more than 5 years [41].

It was also observed that 77.3% of participants had a family member who also drank alcohol. This finding was congruent with other studies that indicated a positive history of alcohol use among people with alcohol relapse [42, 43].

The situation with alcohol relapse

The findings showed that more than two-thirds of the participants (69.1%) had experienced more than one relapse in the last 12 months. Previous studies indicate that the greater the number of alcohol relapses, the more the severity of any relapse situation [42, 44].

These findings were supported by a study conducted in Hanoi, Vietnam which reported that 62.8% of alcohol-dependent patients had relapsed after one year of discharge [17].

The high rate of alcohol relapse could be explained by the following reasons. Firstly, in Thai Nguyen, no alcohol restriction measure has been imposed. Alcohol is easy to buy in street stalls, through vendors, and at restaurants. Further, the cost of alcohol is comparatively low. People believe that drinking is commonplace, and alcohol plays an important role in Vietnamese society. As stated earlier, there is still a lack of hospital alcohol addiction treatment. Therefore, alcohol-dependent individuals have little help or skills in knowing how to avoid a relapse [20].

The relationship between independent variables and alcohol relapse
The findings showed that of the twelve factors hypothesized in correlating with alcohol relapse, ten factors showed a significant relationship at the alpha level of 0.05.

At first, *positive outcome expectancies* were considered as the most important contributor with the strongest association to alcohol relapse ($r_s = 0.550, p = 0.000$). The more individuals that valued the outcome of drinking, the more likely it was for them to engage in drinking and increase the probability of relapse [45]. Furthermore, it is no surprise that Vietnamese people have a strong belief in the positive effects of drinking. In the countryside, alcohol is commonly consumed during the new year period and at weddings and anniversaries [3] thereby creating limited awareness of alcohol's adverse effects. This finding was similar to a previous Japanese study which reported that high positive alcohol outcome expectancies significantly predicted a worse treatment outcome when eventually suffering from alcohol dependence [46].

Adaptive coping was the second main contributor to alcohol relapse ($r_s = -0.535$, $p = 0.000$). The reason is that individuals with adaptive coping had active and effective coping strategies that increased the ability to deal with stressful situations including the risk of alcohol reconsumption that, in turn, decreased the probability of relapse [47]. It is noteworthy that Vietnamese drinkers with alcohol dependence had to face the pressure to drink when they engaged in social events [3, 20]. Therefore, the use of adaptive coping strategies would significantly help them to avoid alcohol relapse.

Also, there was a positive relationship between maladaptive coping and alcohol relapse in this study ($r_s = 0.217, p < 0.05$). The findings of coping strategies are seen as parallel with previous studies that found individuals who had abstained from alcohol tended to use a greater number of effective coping strategies than those who had relapsed [26, 44].

Craving was the third factor that contributed to alcohol relapse ($r_s = 0.522, p = 0.000$). Alcohol craving is very difficult to stop or avoid and can easily cause an unplanned return to alcohol consumption [48]. Further, most alcoholics may never completely avoid experiencing craving, even during the treatment period [49]. This finding is supported by a study conducted in Vietnam which reported that craving was the most common reason that caused relapse after one year of discharge [17]. Other studies also indicated that there was a positive relationship between craving and alcohol relapse [15, 50].

Self-efficacy with a moderate correlation to alcohol relapse ($r_s = -0.499, p = 0.000$) was the fourth contributor. It indicated that the higher the level of drinking refusal self-efficacy, the lower is the probability of alcohol relapse. A possible explanation is that alcohol-dependent individuals who have low levels of self-confidence and were not successful at abstinence also had a historically higher level of alcohol abuse. After a failed first attempt, their drinking habit often continued to a full relapse [25]. This finding is similar to a study conducted in Malaysia which highlighted that self-efficacy had a negative association with relapse ($r = -0.790, p < 0.05$) [51].

The fifth contributor to alcohol relapse among Vietnamese alcohol-dependents was *negative emotional states* ($r_s = 0.497, p = 0.000$). One possible explanation here is that

individuals could have had previous experiences where alcohol had helped relieve their negative mood states. Because of the long duration of alcohol dependence, the relief of negative emotional states by drinking was formed. Therefore, alcohol that was consumed as a relief from negative memories proved to be a hard habit to break [52]. Also, negative emotional states such as anger were significantly related to decreased self-control of individuals that might result in maladaptive behaviors including alcohol consumption [53].

This finding was supported by a study conducted in Vietnam which indicated that depression was one of the reasons for alcohol relapse [17]. Similarly, other researchers reported that depression and anxiety symptoms had a significant correlation to drinking with a Pearson's correlation of 0.35 and 0.39 ($p < 0.05$) [54].

Social support was another contributor to alcohol relapse ($r_s = -0.338$, $p = 0.000$). The reason is that high social support has empowered individuals to overcome the adverse effects of stress and reduce exposure to risk situations of drinking that would help decrease the probability of relapse [55]. Furthermore, individuals with high levels of social support perceived that they might receive support from their family, friends, and others and were more able to cope with negative life stressors [56]. This finding was supported by a study in China that found a positive relationship between social support and resilience ($r = 0.484$, $p < 0.01$) [16].

Regarding *motivation*, taking positive steps had a high negative correlation with alcohol relapse ($r_s = -0.606$, $p = 0.000$), followed by ambivalence and recognition of habits and patterns ($r_s = -0.331$, $p = 0.000$, and $r_s = -0.199$; $p < 0.05$, respectively). The findings reveal that increased awareness of drinking problems and taking part in more activities that included engaging in the change of one's drinking behavior lengthened periods of abstinence. It also suggested that motivation to change is a critical factor for the success of alcohol abstinence. These findings were consistent with a previous study that reported that the higher the score of motivation to change, the better the treatment outcome of alcohol addiction [14].

Contrary to the hypotheses, *negative outcome expectancies* were not significantly related to alcohol relapse ($r_s = -0.024$, $p = 0.805$). In this instance, whether participants had low or high negative expectations toward the effects of drinking, there was still no difference in the rate of relapse. A possible explanation is that the participants in this study were always under peer pressure to drink. (77.3% reported a positive family history of drinking), so although participants recognized the harmful effects of alcohol consumption, they had to drink to gain respect, complacency, and not to lose face [57].

Similarly, *positive emotional states* had a nonsignificant association with alcohol relapse ($r_s = 0.081$, $p = 0.399$). This means that although the participants used alcohol when they had positive emotions, these drinks were not related to their relapses. This may be because positive emotional states were not the leading cause of alcohol consumption among the participants in this study.

Recommendations

The researchers suggest some interventions for the nurses who provide services for persons with alcohol dependence in Thai Nguyen as below.

Alcohol education. Firstly, nurses should provide education that could help the patients to understand that relapse is a normal part of the recovery process. Also, the patients must be taught to recognize the warning signs of relapse such as cravings and negative emotional states. The nurse should then support patients to develop coping skills to prevent relapse.

Similarly, it is necessary to reframe the perception of alcohol outcome expectancies among patients. The objective is to reduce the high expectation of the outcomes of drinking and help clients to identify the adverse effects of alcohol, as well as the impact that it has on a person's health, family and society.

In addition, nurses could provide education to enhance the motivation to change drinking behaviors by providing appropriate medical information related to current drinking habits and their health status. In this way, patients would be guided in exploring their experience, feelings and their capacity to change their drinking problems.

Skills training. At first, most participants showed a low level of self-efficacy in refusing to drink, especially when in social pressure situations. Therefore, the patients should be trained on how to say "no" to alcohol and develop strong internal resilience skills to stay away from alcohol.

Secondly, there was a high-frequency use of maladaptive coping when patients experienced the risk situation of relapse. It is suggested that nurses and doctors provide information on effective coping strategies during depressive or angry situations and give patients a chance to practice these strategies in the hospital. Also, the participants reported a moderate level of craving. Thus, the nurses should teach patients how to deal with the cravings as they occur by practicing meditation and exercise as suggested examples. Also, the healthcare system in Thai Nguyen should provide aftercare services for alcohol-dependent individuals as alcohol addiction does not stop after the treatment period ends.

Conclusions

Positive outcome expectancies, adaptive coping and cravings are important determinants of relapse. Other variables such as negative emotional states, self-efficacy, motivation, maladaptive coping and social support were found to be significant contributors to relapse. The findings are useful in guiding healthcare providers to develop essential interventions to prevent relapse. It also suggests future experimental studies on relapse prevention in Vietnam.

References

1. Jiang L. Comparison of the difference between Chinese and western drinking culture. Asian Soc Sci. 2011; 7(5): 251-7. doi: 10.5539/ass.v7n5p251.

2. Van Son H. From alcohol addiction behavior of students and young adults in Viet Nam looking at the Vietnamese cultural life. Int J Humanit Soc Sci. 2014; 4(7): 102-7.

3. Lincoln M. Alcohol and drinking cultures in Vietnam: a review. Drug Alcohol Depend. 2016 Feb; 159: 1-8. doi: 10.1016/j.drugalcdep.2015.10.030.

4. Van Bui T, Blizzard CL, Luong KN, Van Truong NL, Tran BQ, Otahal P, *et al.* Alcohol consumption in Vietnam, and the use of 'standard drinks' to measure alcohol intake. Alcohol Alcohol. 2016 Mar; 51(2): 186-95. doi: 10.1093/alcalc/agv082.

5. World Health Organization [WHO]. Global status report on alcohol and health 2014. Geneva: WHO; 2014.

6. World Health Organization [WHO]. Global health observatory data repository: alcohol-attributable fractions, all-cause deaths by country. 2016. [updated 2018 Jun 9; cited 2019 Mar 20]. Available at: http://apps.who.int/gho/data/node.main.A1091?lang=en&showonly=GISAH.

7. Vietcetera. Alcohol consumption in Vietnam: truths and trends. 2018. [updated 2018 Jun 2; cited 2019 April 5]. Available at: http://vietcetera.com/alcohol-consumption-in-vietnam-truths-and-trends/.

8. Evren C, Durkaya M, Dalbudak E, Çelik S, Çetin R, Çakmak D. Factors related with relapse in male alcohol dependents: 12 months follow-up study. Dusunen Adam. 2010; 23(2): 92-9. doi: 10.5350/DAJPN2010230203t.

9. Dawson DA, Grant BF, Stinson FS, Chou PS, Huang B, Ruan WJ. Recovery from DSM-IV alcohol dependence: USA, 2001-2002. Addiction. 2005 Mar; 100(3): 281-92. doi: 10.1111/j.1360-0443.2004.00964.x.

10. Nikmanesh Z, Baluchi MH, Motlagh AAP. The role of self-efficacy beliefs and social support on prediction of addiction relapse. Int J High Risk Behav Addict. 2017; 6(1): e21209. doi: 10.5812/ijhrba.21209.

11. Anthenien AM, Lembo J, Neighbors C. Drinking motives and alcohol outcome expectancies as mediators of the association between negative urgency and alcohol consumption. Addict Behav. 2017 Mar; 66: 101-7. doi: 10.1016/j.addbeh.2016.11.009.

12. Metzger IW, Blevins C, Calhoun CD, Ritchwood TD, Gilmore AK, Stewart R, et al. An examination of the impact of maladaptive coping on the association between stressor type and alcohol use in college. J Am Coll Health. 2017 Nov-Dec; 65(8): 534-41. doi: 10.1080/07448481.2017.1351445.

13. Oliva F, Nibbio G, Vizzuso P, Jaretti Sodano A, Ostacoli L, Carletto S, et al. Gender differences in anxiety and depression before and after alcohol detoxification: anxiety and depression as gender-related predictors of relapse. Eur Addict Res. 2018; 24(4): 163-72. doi: 10.1159/000490046.

14. Gaume J, Bertholet N, Daeppen JB. Readiness to change predicts drinking: findings from 12-month follow-up of alcohol use disorder outpatients. Alcohol Alcohol. 2017 Jan; 52(1): 65-71. doi: 10.1093/alcalc/agw047.

15. Stohs ME, Schneekloth TD, Geske JR, Biernacka JM, Karpyak VM. Alcohol craving predicts relapse after residential addiction treatment. Alcohol Alcohol. 2019 Mar; 54(2): 167-72. doi: 10.1093/alcalc/agy093.

16. Yang C, Xia M, Han M, Liang Y. Social support and resilience as mediators between stress and life satisfaction among people with substance use disorder in China. Front Psychiatry. 2018; 9: 436. doi: 10.3389/fpsyt.2018.00436.

17. Mai NTP, Viet NK. Study on alcohol relapse situation in patients who were detoxificated. After 12 months discharging from national institute of mental health. 2014. [updated 2014 Mar 3; cited 2019 May 19] (in Vietnamese). Available at: http://suckhoetamthanvn.blogspot.com/2014/03/nghien-cuu-thuc-trang-tai-nghien-sau.html.

18. Nicosia N, Pacula RL, Kilmer B, Lundberg R, Chiesa J. The economic cost of methamphetamine use in the United States, 2005. Santa Monica, CA: RAND Corporation; 2009.

19. Go VF, Minh NL, Frangakis C, Ha TV, Latkin CA, Sripaipan T, et al. Decreased injecting is associated with increased alcohol consumption among injecting drug users in northern Vietnam. Int J Drug Policy. 2013 Jul; 24(4): 304-11. doi: 10.1016/j.drugpo.2012.12.003.

20. Hershow RB, Zuskov DS, Vu Tuyet Mai N, Chander G, Hutton HE, Latkin C, et al. "[Drinking is] like a rule that you can't break": perceived barriers and facilitators to reduce alcohol use and improve antiretroviral treatment adherence among people living with HIV and alcohol use disorder in Vietnam. Subst Use Misuse. 2018 Jun; 53(7): 1084-92. doi: 10.1080/10826084.2017.1392986.

21. Hang DTL. Factors influencing alcohol drinking behavior among adults in Thai Nghuyen city, Vietnam. Chonburi, Thailand: Burapha University; 2010.

22. Phuong HT. The current status, factors influencing and harmful effects of alcohol abuse in some ecological regions of Vietnam. Hanoi: National Institute of Hygiene and Epidemiology; 2009.

23. Son HV, Hanh MM, Hao QT. The dipsomaniac levels of male students and young adults in Ho Chi Minh City nowadays. Ho Chi Minh City Univ Edu J Sc. 2014; 55(89): 173-83. (in Vietnamese).

24. Phuong T. Alcohol-induced mental disorders. 2017. [updated 2017 Dec 14; cited 2019 Mar 22]. Available at: http://www.baothainguyen.org.vn/tin-tuc/suc-khoe-cong-dong/roi-loan-tam-than-do-nghien-ruou-251096-46249.html.

25. Hendershot CS, Witkiewitz K, George WH, Marlatt GA. Relapse prevention for addictive behaviors. Subst Abuse Treat Prev Policy. 2011 Jul; 6(17): 17. doi: 10.1186/1747-597X-6-17.

26. Sureshkumar K, Kailash S, Dalal PK, Reddy MM, Sinha PK. Psychosocial factors associated with relapse in patients with alcohol dependence, Indian J Psychol Med. 2017 May-Jun; 39(3): 312-5. doi: 10.4103/0253-7176.207337.

27. Korlakunta A, Chary SRS, Reddy PKC. Reasons for relapse in patients with alcohol dependence. Andhra Pradesh J Psychol Med. 2012; 13(2): 108-14.

28. Kuria MW. Factors associated with relapse and remission of alcohol dependent persons after community based treatment. Open J Psychiatr. 2013; 3: 264-72. doi: 10.4236/ojpsych.2013.32025.

29. Anh NTK. Public health service quality at Thai Nguyen national general hospital. Iloilo, Philippine: Central Philippine University; 2016.

30. Katzman R, Brown T, Fuld P, Peck A, Schechter R, Schimmel H. Validation of a short orientation-memory-concentration test of cognitive impairment. Am J Psychiatry. 1983 Jun; 140(6): 734-9.

31. World Health Organization [WHO]. The ICD-10 classification of mental and behavioural disorders: clinical descriptions and diagnostic guidelines. Geneva: WHO; 1992.

32. McHugh ML. Interrater reliability: the kappa statistic. Biochem Med (Zagreb). 2012; 22(3): 276-82.

33. Lee NK, Oei TP, Greeley JD, Baglioni AJ, Jr. Psychometric properties of the drinking expectancy questionnaire: a review of the factor structure and a proposed new scoring method. J Stud Alcohol. 2003 May; 64(3): 432-6. doi: 10.15288/jsa.2003.64.432.

34. Flannery BA, Volpicelli JR, Pettinati HM. Psychometric properties of the penn alcohol craving scale. Alcohol Clin Exp Res. 1999 Aug; 23(8): 1289-95.

35. Miller WR, Tonigan JS. Assessing drinkers' motivation for change: the stages of change readiness and treatment eagerness scale (SOCRATES). Psychol Addict Behav. 1996 Jun; 10(2): 81-9. doi: 10.1037/0893-164x.10.2.81.

36. Litman GK, Stapleton J, Oppenheim AN, Peleg M. An instrument for measuring coping behaviours in hospitalized alcoholics: implications for relapse prevention treatment. Br J Addict. 1983 Sep; 78(3): 269-76.

37. Watson D, Clark LA, Tellegen A. Development and validation of brief measures of positive and negative affect: the PANAS scales. J Pers Soc Psychol. 1988 Jun; 54(6): 1063-70.

38. Zimet GD, Dahlem NW, Zimet SG, Farley GK. The multidimensional scale of perceived social support. J Pers Assess. 1988; 52(1): 30-41.

39. International Alliance for Responsible Drinking [IARD]. Unrecorded alcohol in Vietnam: results of a population survey. London: IARD; 2018.

40. Mylona L, Huy NV, Ha PN, Riggi E, Marrone G. Factors associated with risky alcohol consumption among male street laborers in urban Vietnam. Subst Use Misuse. 2017 Jul; 52(9): 1170-80. doi: 10.1080/10826084.2017.1302480.

41. Tuan LA. Analysing and evaluating factors directly related to alcohol abuse and alcohol dependence. Journal Practical Medicine Vietnam. 2010; 2: 28-30.

42. Sarada K, Archana V, Radharani S. A study to compare the relapse precipitants between abstinent and relapsed individuals with alcohol dependence. IOSR Journal of Dental and Medical Sciences. 2016; 5(11): 53-6. doi: 10.9790/0853-1511045356.

43. Chauhan VS, Nautiyal S, Garg R, Chauhan KS. To identify predictors of relapse in cases of alcohol dependence syndrome in relation to life events. Ind Psychiatry J. 2018 Jan-Jun; 27(1): 73-9. doi: 10.4103/ipj.ipj_27_18.

44. Kaundal PK, Sharma I, Jha T. Assessment of psychosocial factors associated with relapse in patients with alcohol dependence: a retrospective observational study. Int J Basic Clin Pharmacol. 2016; 5(3): 969-74. doi: 10.18203/2319-2003.ijbcp20161554.

45. Nicolai J, Moshagen M, Demmel R. A test of expectancy-value theory in predicting alcohol consumption. Addict Res Theory. 2018; 26(2): 133-42. doi: 10.1080/16066359.2017.1334201.

46. Sawayama T, Yoneda J, Tanaka K, Shirakawa N, Sawayama E, Ikeda T, et al. The predictive validity of the drinking-related cognitions scale in alcohol-dependent patients under abstinence-oriented treatment. Subst Abuse Treat Prev Policy. 2012 May; 7: 17. doi: 10.1186/1747-597X-7-17.

47. Carver CS. You want to measure coping but your protocol's too long: consider the brief COPE. Int J Behav Med. 1997; 4(1): 92-100.

48. Marlatt GA, Parks GA, Witkiewitz K. Clinical guidelines for implementing relapse prevention therapy: a guideline developed for the behavioral health recovery management project. Seattle, WA: University of Washington; 2002.

49. Oslin DW, Cary M, Slaymaker V, Colleran C, Blow FC. Daily ratings measures of alcohol craving during an inpatient stay define subtypes of alcohol addiction that predict subsequent risk for resumption of drinking. Drug Alcohol Depend. 2009 Aug; 103(3): 131-6. doi: 10.1016/j.drugalcdep.2009.03.009.

50. Schneekloth TD, Biernacka JM, Hall-Flavin DK, Karpyak VM, Frye MA, Loukianova LL, et al. Alcohol craving as a predictor of relapse. Am J Addict. 2012 Nov; 21(Suppl 1): S20-6. doi: 10.1111/j.1521-0391.2012.00297.x.

51. Ibrahim F, Kumar N, Samah BA. Self efficacy and relapsed addiction tendency: an empirical study. Soc Sci. 2011; 6(4): 277-82.

52. Baker TB, Piper ME, McCarthy DE, Majeskie MR, Fiore MC. Addiction motivation reformulated: an affective processing model of negative reinforcement. Psychol Rev. 2004 Jan; 111(1): 33-51. doi: 10.1037/0033-295X.111.1.33.

53. Denson TF, Pedersen WC, Friese M, Hahm A, Roberts L. Understanding impulsive aggression: angry rumination and reduced self-control capacity are mechanisms underlying the provocation-aggression relationship. Pers Soc Psychol Bull. 2011 Jun; 37(6): 850-62. doi: 10.1177/0146167211401420.

54. Armeli S, Sullivan TP, Tennen H. Drinking to cope motivation as a prospective predictor of negative affect. J. Stud. Alcohol Drugs. 2015 Jul; 76(4): 578-84. doi: 10.15288/jsad.2015.76.578.

55. Dixit S, Chauhan VS, Azad S. Social support and treatment outcome in alcohol dependence syndrome in armed forces. J Clin Diagn Res. 2015 Nov; 9(11): VC01-VC5. doi: 10.7860/JCDR/2015/14142.6739.

56. Osmany M, Ali MS, Rizvi S, Khan W, Gupta G. Perceived social support and coping among alcohol/cannabis dependants and non-dependants. Delphi Psych J. 2014; 17(2): 375-82.

57. Nguyen TTH, Sendall MC, White KM, Young RM. Vietnamese medical students and binge drinking: a qualitative study of perceptions, attitudes, beliefs and experience. BMJ Open. 2018 Apr; 8(4): e020176. doi: 10.1136/bmjopen-2017-020176.

Corresponding author

Nhat Van Trieu can be contacted at: nhathoang2601@gmail.com, trieuvannhat@tump.edu.vn