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ALCOHOL-DEPENDENT INPATIENTS IN NORTHERN VIETNAM

A Follow-Up Study on Relapse and Co-Occurring Psychiatric Disorders**

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Background: The prevalence of alcohol dependence has been increasing in several countries in the world as well as in Vietnam. This study aims to describe relapse among alcohol-dependent inpatients in Northern Vietnam and some co-occurring psychiatric disorders in these patients.
Methods: This study followed 53 alcohol-dependent patients who were treated for six months at the Vietnam National Institute of Mental Health. At the point of one month, three months, and six months after being discharged from the hospital, the patients were monitored for their alcohol consumption, relapse into alcohol dependence, and co-occurring psychiatric disorders by clinical psychiatrists, using the International Classification of Diseases, the 10th edition, Hamilton depression rating scale, Hamilton anxiety rating scale, Pittsburgh Sleep Quality Index, and the EQ-5D-5L Life Quality Assessment.
Results: The prevalence of relapse into alcohol dependence was 81.1%. The highest relapse rate was found in the first month after alcohol withdrawal (46.5%), then it decreased gradually. 53.9% of the relapsed patients had at least four alcohol withdrawals; they mainly used home-brewed alcohol. The average daily alcohol intake was fairly high: 14.4 ± 8.5 standard drinks. Mental disorders such as depression, anxiety, and sleep disorder were very prevalent among patients with relapsed alcohol dependence.
Conclusions: The rate of relapsed alcohol dependence in Northern Vietnam was very high. It is important to detect and treat psychiatric disorders simultaneously with alcohol dependence to achieve better treatment effectiveness and reduce relapse rates.
Keywords: alcohol dependence; relapse; co-occurring psychiatric disorders

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1. Introduction

Alcohol dependence is a chronic relapsing pathology, the relapse rate is relatively high, ranging from 60% to 90% (Thompson et al. 2018; Walitzer & Dearing 2006). A number of studies around the world found that most alcohol-dependent patients relapsed within three to six months after being discharged, with the risk of relapse being highest in the first two months (Prochaska et al. 1992; Zywiak et al. 2006). Although in recent years, many countries have adopted policies and educational programs about the harmful effects of alcohol dependence, as well as detox and treatment measures against alcohol relapse, the number of alcohol-dependent cases has continuously risen. In 2017, twenty percent of the adults were heavy episodic drinkers (compared with 1990 when it was estimated at 18.5%), and this prevalence is expected to increase to 23% in 2030 (the prevalence of heavy episodic drinking was estimated with fractional response regressions using survey data from 118 countries) (Manthey et al. 2019). This is partly due to the number of new users or newly diagnosed subjects with alcohol dependence, and on the other hand, due to many people, returning to alcohol dependence at various levels after the alcohol rehab time.

The relapse into alcohol dependence is likely to result from a combination of various factors. Parameters involved in relapse include biological, psychological, social and spiritual factors. Some studies show that psychiatric comorbidity, alcohol dependence severity, craving, use of other substances, health and social factors are consistently significantly associated with alcohol dependence relapse. Conversely, supportive social network factors, self-efficacy, and factors related to purpose and meaning in life, are protective against alcohol dependence relapse. Particularly in clinical settings, a detectable, chronic alcohol use and relapse in patients are associated with mental disorders (Sliedrecht et al. 2019). An alcohol-dependent patient is 3.8 times more likely to suffer from schizophrenia and four to eight times more likely to have an anti-social personality disorder than a non-alcohol-dependent patient (American Psychiatric Association 2013; Ramesh Shivani et al. 2002). Approximately 30–40% of alcohol-dependent patients meet the diagnosis criteria of depressive disorder at a certain time throughout their lives and vice versa (Boden & Fergusson 2011; Sadock et al. 2015). Meanwhile, the rate of bipolar disorder in alcohol-dependent patients is only about 13.4%, usually lower than the rate of alcohol dependence among patients diagnosed with bipolar disorder. Twenty-five to fifty percent of those with alcohol-related disorders have anxiety disorders, especially phobias and panic disorders (Sadock et al. 2015). Clinicians are challenged to diagnose such comorbidities, since psychiatric symptoms can be a direct consequence of excessive consumption which partially subside with abstinence, or are inconspicuous with alcohol use but become conspicuous only after abstinence from alcohol. It is important to recognize the dual disorders as early warning signs of the potential for alcohol dependence relapse after remission and perhaps trigger preventive or more intensive continuing care, because early intervention may reduce the severity of both disorders, improve the eventual outcome, and reduce health care costs.

This research aims to describe the current situation of relapse and some co-occurring mental disorders among alcohol-dependent patients who have been detoxified in Northern Vietnam.

2. Methods

2.1. Study design

This is a prospective study. The alcohol dependent patients were monitored during the time they were admitted to Vietnam National Institute of Mental Health[1] – Bach Mai Hospital[2], at the points of one month, three months, and six months after being discharged from the hospital.

2.1.1. Study settings

Bach Mai Hospital in Hanoi is the key hospital in Northern Vietnam which is equipped with 1900 beds, with 55 affiliated units, including three institutes, eight centres, twelve functional departments, twenty-three clinical departments, six paraclinical departments and Bach Mai Medical College, Journal of Clinical Medicine and Service Unit (Bach Mai Hospital main page, n.d.).

The Vietnam National Institute of Mental Health belongs to Bach Mai Hospital. The Institute consists of eight clinical departments (Out-patient, Stress-Related Disorder, Child Psychiatry, Schizophrenic Disorder, Mood Disorder, Substance Abuse, Psychogeriatric and Clinical Psychology) with 257 inpatient beds. On average, the Institute examines and treats 250280 inpatients and 300-350 out-patients per day (National Institute of Mental Health main page, n.d.).

2.1.2. Inclusion criteria

We selected the patients who were admitted to the Vietnam National Institute of Mental Health-Bach Mai Hospital with alcohol dependence according to the International Classification of Diseases, the 10th edition (ICD-10).

2.1.3. Exclusion criteria

Excluded from the study were the participants who suffered from severe medical problems.

[1] National Institute of Mental Health main page: http://www.nimh.gov.vn/.
[2] Bach Mai Hospital main page: http://bachmai.gov.vn/.

2.2. Participants

Seventy Vietnamese patients with mental and behavioural disorders caused by alcohol use who met the criteria for the diagnosis of alcohol dependence according to ICD-10, were admitted to Vietnam National Institute of Mental Health-Bach Mai Hospital in 2018 and agreed to participate in the study. All the patients live in Northern Vietnam. The reasons for hospitalization were the symptoms of withdrawal syndrome or alcohol psychosis or sleeplessness, etc. A total of 53 patients were observed for a period of six months, 17 patients dropped out due to various reasons, including not wanting to continue to participate in the study, inconvenience due to the long distance between/ their home and the hospital, etc.

2.3. Measures

2.3.1. Variables used

The background characteristics of study participants were: age, gender, educational background, occupation and marital status. Variables related to alcohol dependence and relapse consisted of alcohol consumption (number of standard drinks), type of alcohol use, the common drinking place, relapse into alcohol dependence, time of relapse after discharge, the reasons for relapse, time of alcohol withdrawal, and co-occurring mental disorders.

2.3.2. Study tools

A standard drink was defined as containing 10g of pure alcohol (equivalent to 12.5ml of pure alcohol). A standard drink was equivalent to 285 ml full-strength beer (4.8% alcohol), 425 ml low strength beer (2.7% alcohol), 275 pre-mix spirits (5% alcohol), 100 ml wine (13.5% alcohol), 30 ml spirits (40% alcohol) (World Health Organization, 2009).

Relapse into alcohol dependence was defined as whether the patient met the criteria for the diagnosis of alcohol dependence according to ICD-10 following a period of abstinence.

Clinical psychiatrists diagnosed alcohol dependence, relapse, and mental disorders co-occurring with alcohol dependence using the International Classification of Diseases, the 10th edition (ICD-10). Depression was defined using the Hamilton depression rating scale (HDRS). The total score ranges from 0 to 52. Score 0–7: no depression. Score 8–13: mild depression. Score 14–18: moderate depression. Score 19–22: severe depression. Score over 23: very severe depression (Hamilton 1960; Sharp 2015). Anxiety was defined using the Hamilton anxiety rating scale (HARS). HARS consists of 14 questions. The points present five corresponding levels from 'none' to 'very severe': 0. none; 1. mild; 2. moderate; 3. severe; 4. very severe. The total score under 14: no anxiety; score 14–17: mild anxiety; score 18–24: moderate

anxiety; score 25–30: severe anxiety, score over 30: very severe anxiety (Thompson 2015). Sleep disorder was defined using the Pittsburgh Sleep Quality Index (PSQI). The rating scale is a self-assessment table consisting of 19 items, which are evaluated by levels from 0 (no difficulty) to 3 (very difficult). The total score ranges from 0 to 21. The total score of 5 or greater indicates sleep disorder (Grandner et al. 2006). These psychological tests were verified by Cronbach's alpha with good and acceptable reliability. The reliability of the HDRS was 0.879. The reliability of the HARS was 0.897. The reliability of the PSQI was 0.771. And the reliability of the EQ-5D-5L was 0.848.

The general quality of life was assessed using the EQ-5D-5L Life Quality Assessment. This set of tools evaluates the quality of life in five aspects: walking ability, self-care ability, daily workability, pain/discomfort and anxiety/sadness (van Reenen & Janssen 2015). This was validated and widely used in Vietnam (Tran et al. 2012).

2.3.3. Data collection

During the time they were admitted to the hospital, the patients were interviewed to gather information about alcohol use and related situations. Qualified psychiatrists assessed the patients via a comprehensive clinical examination using ICD-10 to get the final diagnosis of alcohol dependence and co-occurring psychiatric disorders. The selected patients then performed psychological tests to detect depression, using the Hamilton depression rating scale, the accompanying anxiety using the Hamilton anxiety rating scale, sleep disorders using the Pittsburgh sleep quality index (PSQI), and general quality of life using EQ-5D-5L when they cooperated. During hospitalized detoxification, all participants received pharmacological therapies for symptomatic and supportive treatment, which were up to the physicians; the researchers did not interfere with the treatment process. All participants were given general health education to encourage them to maintain abstinence or come to further clinical assessment for their relapse at the follow-up interviews. At the points of one month, three months, and six months after being discharged from hospital, the patients were monitored for alcohol consumption, relapse into alcohol dependence, co-occurring psychiatric disorders using ICD-10, the Hamilton depression rating scale, the Hamilton anxiety rating scale, the Pittsburgh sleep quality index, and EQ-5D-5L in the hospital or in their home. Qualified psychiatrists and psychologists did the total data collection process.

2.4. Statistical analysis

Data analyses were performed using Stata 13 software. Descriptive statistics included the estimates – (variables with normal distribution) or Sign test (variables with non-normal distribution) were used for comparing psychological test scores each time after the patients were discharged from hospital to the scores gained while they were in hospital. Associations between depressive disorder, anxiety disorder, sleep disorder and the

binary outcome of alcohol dependence relapse were examined with multiple logistic regression models, producing adjusted odds ratios and 95% of the confidence intervals.

2.5. Ethical considerations

Patients were clearly explained the objectives and methods of the study, and signed a consent form to participate in the study; they also had the right to withdraw from the study without explanation. They were informed that no discrimination in treatment would happen if they declined to participate in the study at any time. The patients' information was coded and kept confidential.

The study was approved by the Ethics Committee-Hanoi Medical University (decision number 09NCS17/HMU IRB).

3. Results

3.1. Socio-demographic characteristics

Of the 53 participants in the study, the majority of alcohol-dependent patients were male (98.11%), mainly employed (96.23%). Within that segment, the group of patients with high school education accounted for the highest proportion (39.62%). 77.4% of the patients were married. The average age of study subjects was: 47.2 ± 8.4. The average age at first use of alcohol was 19.6 ± 5.0. The rate of alcohol relapse was 81.13% (*Table 1*).

Table 1
Socio-demographic characteristics of study participants

Characteristics		*n*	*(%)*
Sex	Male	52	(98.11)
	Female	1	(1.89)
Occupation	Employed	51	(96.23)
	Unemployed	2	(3.77)
Academic Level	Primary school	4	(7.55)
	Secondary school	16	(30.19)
	High school	21	(39.62)
	College, university, postgraduate	12	(22.64)
Marital status	Married	41	(77.36)
	Single, separated / divorced	12	(22.64)
Alcohol relapse		43	(81.13)
Age (mean ± SD)		47.23 ± 8.37	
Age at the first time of alcohol use (mean ± SD)		19.55 ± 4.99	

3.2. Alcohol use and relapse into alcohol dependence

The rate of relapse was highest in the first month after detoxification (46.51%), then decreased over time. Among alcohol relapse groups, 53.85% of the patients had at least four detoxification periods before entering the hospital. The type of alcohol used the most was 30–40° alcohol; most of them were manually-brewed/ homemade alcohol. About four-fifth of the patients drank at home (76.9%), several times a day, both during meals and outside meals. The mean number of standard drinks for the total sample was 14.4±8.5 (*Table 2*).

Table 2
Alcohol use and relapse into alcohol dependence

Characteristics	*Less than 1 month*		*1-<3 months*		*3-<6 months*	
	n	*(%)*	*n*	*(%)*	*n*	*(%)*
Relapse	20	(46.51)	13	(30.23)	10	(23.26)
Times of alcohol withdrawal						
0	3	(15)	1	(7.69)	1	(10)
1	5	(25)	4	(30.77)	3	(30)
2	3	(15)	1	(7.69)	2	(20)
3	0	(0)	0	(0)	1	(10)
>= 4	9	(45)	7	(53.85)	3	(30)
Type of alcohol used						
Liquor 30-40°	17	(85)	11	(84.62)	9	(90)
Wine	2	(10)	0	(0)	1	(10)
Beer 4-5°	5	(25)	4	(30.77)	1	(10)
Handmade	17	(85)	11	(84.6)	9	(90)
Distillery-made	6	(30)	4	(30.8)	2	(20)
Time of drinking alcohol during the day						
Morning	8	(40)	5	(38.46)	7	(46.51)
Noon	17	(85)	11	(84.62)	8	(80)
Afternoon	8	(40)	9	(69.23)	6	(60)
Evening	15	(75)	8	(61.54)	8	(80)
During meal time	15	(75)	9	(69.23)	6	(60)
Outside meal time	10	(50)	8	(61.54)	6	(60)
Working time	1	(5)	1	(7.69)	0	(0)
Outside worktime	11	(55)	9	(69.23)	5	(50)
Average amount of alcohol per day (standard drinks) (mean ± SD)						14.4 ± 8.5
Drinking places						
Home	15	(75)	10	(76.92)	1	(10)
Workplace	1	(5)	0	(0)	1	(10)
Eateries	12	(60)	6	(46.15)	1	(10)
Festivals, celebrations	5	(25)	4	(30.77)	3	(30)

3.3. Psychiatric disorders co-occurring with alcohol dependence at the time of hospitalization

Psychiatric disorders co-occurring with alcohol dependence in the study were depressive disorder, anxiety disorder, and sleep disorder. Qualified psychiatrists diagnosed these disorders, using ICD-10. The patients then performed psychological tests and the results showed that 62.26% of alcohol-dependent patients in the study had a depressive disorder, 41.51% had an anxiety disorder, and 67.92% had a sleep disorder (*Table 3*).

Table 3
Psychiatric disorders co-occurring with alcohol dependence at the time of hospitalization

Psychiatric disorders	*Level*	*n*	*(%)*
Depression	None	20	(37.74)
	Mild	14	(26.42)
	Moderate	10	(18.87)
	Severe	4	(7.55)
	Very severe	5	(9.43)
Anxiety	None	31	(58.49)
	Mild	5	(9.43)
	Moderate	11	(20.75)
	Severe	5	(9.43)
	Very severe	1	(1.89)
Sleep disorder	Non-sleep disturbance	17	(32.08)
	Sleep disturbance	36	(67.92)

3.4. Psychological tests at different time points

The mean scores of the Hamilton depression rating scale, the Hamilton anxiety rating scale, and the Pittsburgh Sleep Quality Index in the relapse group were higher than the non-relapse group. The mean scores of the EQ5D5L in the relapse group were lower than in the non-relapse group (*Figure 1–4*).

In the relapse group, the mean scores of the Hamilton depression rating scale, the Hamilton anxiety rating scale, and the Pittsburgh Sleep Quality Index, were all high during the hospitalization, and then gradually decreased in the first month after discharge and tended to increase progressively in three and six months intervals after

discharge. The mean score of the EQ5D5L was lowest during hospitalization, then increased in the first month after discharge and tended to decrease over time in three and six months intervals after discharge (*Figure 1–4*).

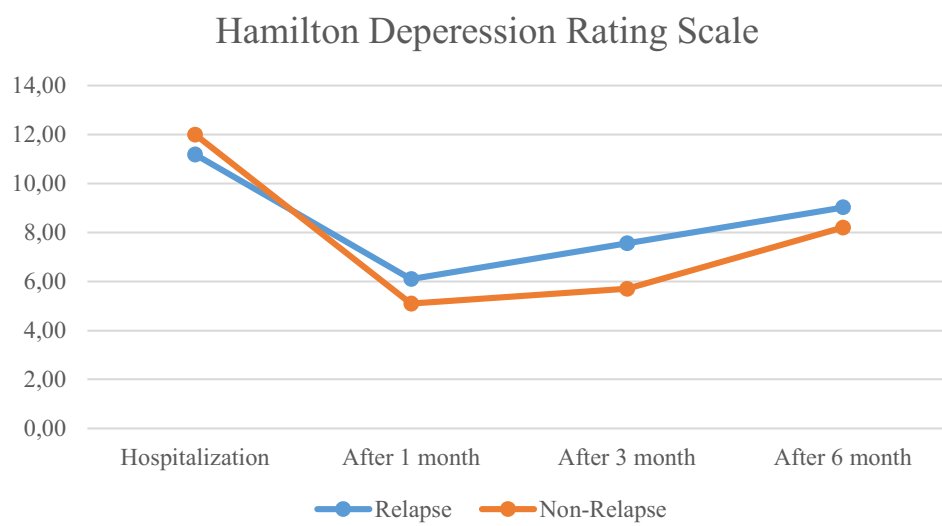

Figure 1
The changes on the Hamilton depression rating scale of the two groups over time

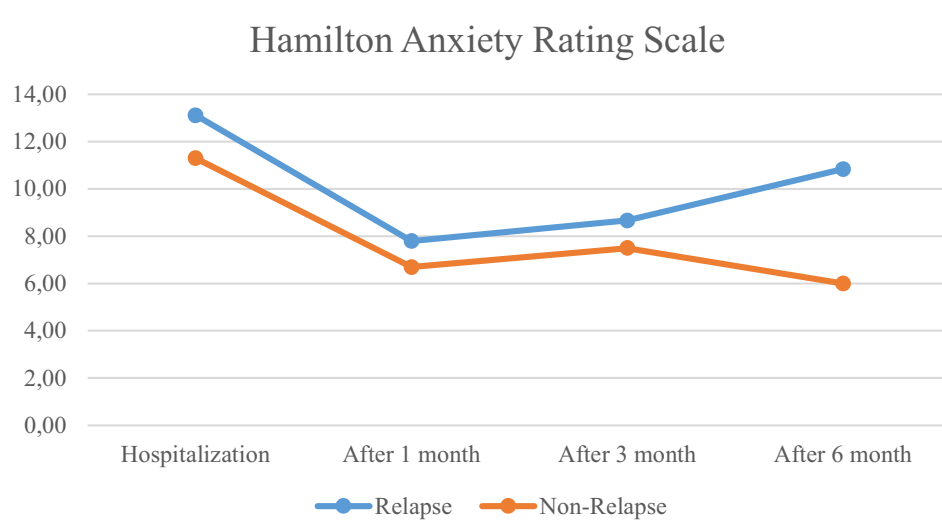

Figure 2
The changes on the Hamilton anxiety rating scale of two groups over time

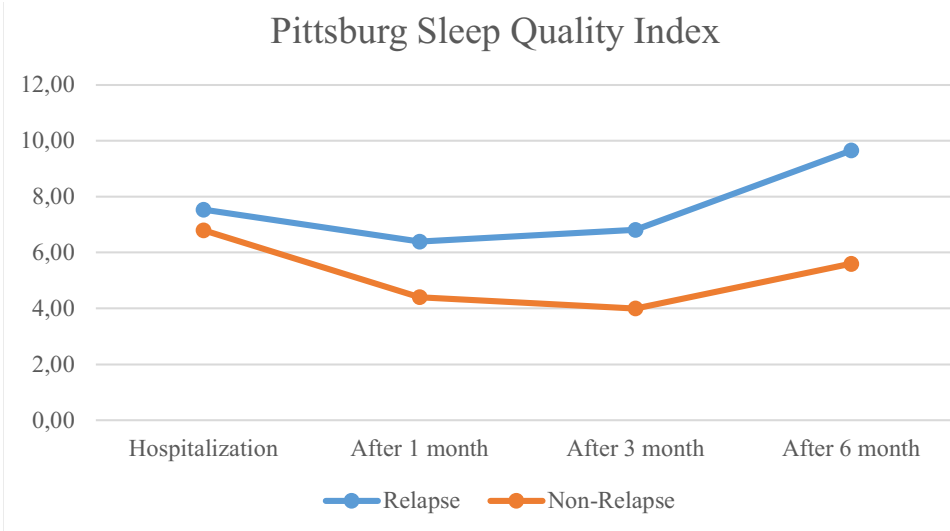

Figure 3
The changes on the Pittsburgh Sleep Quality Index of the two groups over time

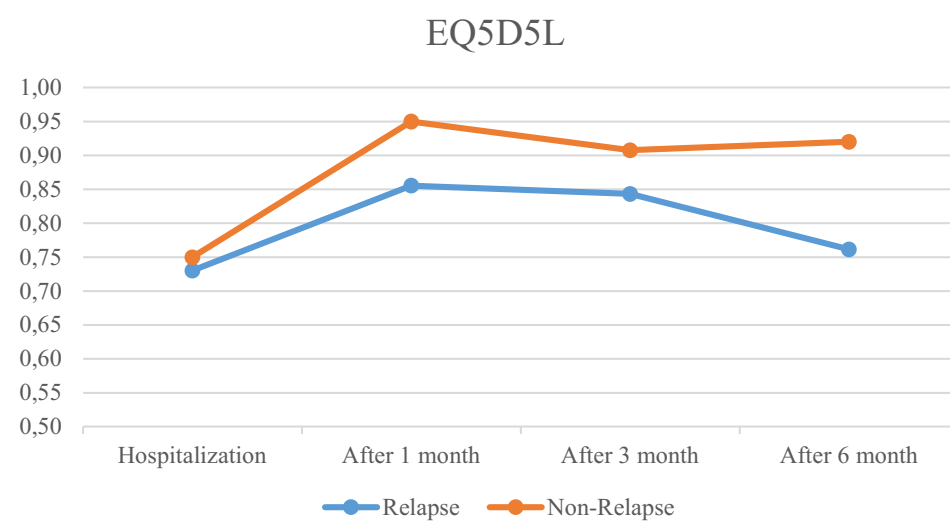

Figure 4
The changes on the EQ5D5L scale of the two groups over time

3.5. Association between co-occurring psychiatric disorders and alcohol dependence relapse at the time of relapse

There was a significant association between co-occurring psychiatric disorders (depression, anxiety disorder and insomnia disorder) and alcohol dependence relapse in our study. Depression and insomnia disorder increased the risk of relapse in alcohol-dependent patients. Anxiety disorder also decreased the risk of relapse in alcohol-dependent patients (*Table 4*).

Table 4
Association between co-occurring psychiatric disorders and alcohol dependence relapse at the time of relapse

Psychiatric disorders	*Odds ratio*	*95% CI*		*p-value*
Depression (Yes/No)	75.12	1.563439	3609.203	0.029
Anxiety (Yes/No)	0.01	2.23E-04	0.9768085	0.049
Sleep disorder (Yes/No)	41.53	1.720121	1.00E+03	0.022

4. Discussions

4.1. Alcohol dependence relapse

As reported by Thompson and colleagues (2018), Nguyen and Nguyen (2013), the rate of relapse was 60 to 90% despite the treatment intervention. Walitzer and Dearing's (2006) research also found this rate to be around 70%. According to our study, 81.13% of patients had a relapse after the cessation. The rate of relapse was relatively high in general. The highest relapse rate was in the first month after alcohol cessation, accounting for about 46.51%. The rate then gradually decreased with time milestones. These findings were consistent with the research of Neto and colleagues (2008). This implies the need for positive treatment measures to prevent relapse for alcohol-dependent patients immediately after detoxification.

Among those patients who relapsed into alcohol dependence, 53.85 have been detoxified four times or more, accounting for the highest percentage. According to the research of Zywiak and colleagues (2006), 44% of alcohol dependent patients have been detoxified and relapsed into alcohol dependence four times or more, for an average of 3.2 ± 1.7 times. Our findings and those of Zywiak and colleagues showed that numerous alcohol dependent patients have detoxified and then re-addicted to alcohol many times, proving alcohol is an addictive substance that is difficult to give up and easy to relapse with.

The average amount of alcohol consumed per day by subjects who had relapsed to alcohol, calculated according to a standard drink, was 14.4 ± 8.5. This demonstrates

an alarming issue regarding alcohol dependence and alcohol relapse repetition in Vietnam nowadays, because of the high level of alcohol consumption. The rate has far exceeded the safe use of alcohol recommended by the World Health Organization, and many other countries (World Health Organization 2009).

Two types of white alcohol exist in Vietnam, which are homemade/privately brewed alcohol and alcohol produced by the distillery. Homemade alcohol has a low price and is easily accessible on the market. However, this kind of alcohol often does not satisfy the food safety standards because of its high aldehyde content, the recipes mostly based on the personal experience of the makers. Moreover, unsafe and low-quality alcohol has been reported to be sold in markets because of the profit, as well as the lack of knowledge and the sensibility of adherence to law. This has directly affected people's lives and community health. No change was detected in the alcohol types before and after the relapse in our study. The most common was still 30–40° white alcohol, mostly manually-brewed alcohol/homemade alcohol. The patients mainly drank at home (accounting for 76.9%) and many times per day, both during and after the mealtime.

4.2. Psychiatric disorders co-occurring with alcohol dependence

Thirty to forty percent of alcohol-dependent patients met the criteria for the diagnosis of major depression disorder at a certain point in their lives (Boden & Fergusson 2011; Sadock et al. 2015). Twenty-five to fifty percent of the alcohol-dependent patients met the criteria for the diagnosis of anxiety disorder. Agoraphobia and panic disorder were extremely common among these people (Sadock et al. 2015). Community-based epidemiological studies showed that the risk of anxiety disorder stood 2.2 times higher in alcohol-dependent patients than in the general population. The lifetime prevalence of anxiety disorders in alcohol-dependent patients was 6-20%; the highest risk was for social phobia and agoraphobia (Dom & Moggi 2014). A multicentre study in France involving 257 disordered patients with alcohol use found that 73.5% of patients had sleep disorders (Perney et al. 2015). Our research results also found a high rate of depression, anxiety, and sleep disorders co-occurring with alcohol dependence (62.26%, 41.51%, and 67.92%, respectively). Although it was difficult to determine whether these mental disorders occur before or during alcohol dependence, or after cessation, the occurrence of both alcohol dependence and these disorders caused the related disorders to be more severe and increased the tendency to recur (Bloch & Singh 2001).

The studies of Korlakunta and colleagues (2012), and Driessen (2001) observed that depression increased the risk of alcohol dependence relapse. Besides depression, many researchers also concluded that the rate of relapse was higher in the patients who simultaneously had anxiety disorders and alcohol dependence (Driessen 2001). In addition, a significant relation exists between insomnia and relapse into alcohol dependence, in which insomnia increases the risk of alcohol dependence relapse (Brower 2003; Brower et al. 2001; 2011). Therefore, the early

detection and treatment of simultaneous psychiatric disorders in alcohol-dependent patients will contribute to reducing the risk of relapse. There was a significant association between co-occurring psychiatric disorders (depression, anxiety disorder and insomnia disorder) and alcohol dependence relapse in our study. Depression and insomnia disorder increased the risk of relapse in alcohol-dependent patients. However, anxiety disorder decreased the risk of relapse in alcohol-dependent patients. This could be due to our sample size not being large enough. With a larger sample size, the association between co-occurring psychiatric disorders and alcohol dependence relapse will be more conspicuous and more similar to other studies around the world.

Surveying the changes in psychological tests of the relapse and non-relapse groups, we found that the scores of the Hamilton Depression rating scale, the Hamilton Anxiety rating scale, and the Pittsburgh Sleep Quality Index in the relapse group were higher than the non-relapse group, whereas the scores of the EQ5D5L in the relapse group were lower than in the non-relapse group. Therefore, the relapse group often had more severe depression, anxiety, and sleep problems than the non-relapse group. It was easy to notice that the quality of life of relapse patients was lower than those who did not re-addict. In addition, in the relapse group, the high-level scores of scales after hospitalization gradually decreased in the first month after discharge and tended to increase gradually at the points of three and six months after discharge. At the same time, the scores of EQ5D5L – the lowest rate after hospitalization – increased gradually in the first month after discharge and tended to decrease gradually at the points of three and six months after discharge. The patients immediately stabilized in terms of mental activity and gradually improved in quality of life after discharge. However, after a while some disorders showed signs of returning gradually and the quality of life decreased due to the poor adherence to treatment, the return to alcohol, the pressures in life, etc. Therefore, it is necessary to provide effective and long-term interventions and support for patients when they return to their families and communities.

5. Conclusions

The rate of relapse among alcohol-dependent inpatients in Northern Vietnam remains at a high level. They relapsed rapidly after their discharge from the hospital, with the average amount of daily alcohol consumption being much greater than the safe level recommended by the World Health Organization, and many countries.

Depression and insomnia disorders increased risk of relapse in alcohol dependent patients. Therefore, early detection and concomitant treatment for co-occurring psychiatric disorders are needed to achieve better treatment efficacy and reduce relapse rates.

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