

The Influence Factors of Suicidal Ideation of Patients with Alcohol Dependence

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Abstract: *The objective of this study is to research the effects of hopelessness and insight on the suicidal ideation of the hospitalized male patients with alcohol dependence. The research subjects were total 162 patients diagnosed with alcohol dependence in accordance with the DSM-5 diagnosis standard. As a descriptive research, this study verified the general characteristics and the characteristics related to drinking and suicide. This study also used the Beck Hopelessness Scale (BHS) for hopelessness, the Hanil Alcohol Insight Scale (HAIS) for insight, and the Scale for Suicide Ideation (SSI) for suicidal ideation. The results of this study are as follows. The subjects' hopelessness were shown as normal 36.4%, slight hopelessness 19.8%, medium level 21.6%, and severe hopelessness 22.2%, while the insight level was shown as negative insight 27.2%, partial formation of insight 50.0%, and formation of insight 22.8%. The score of suicidal ideation was average 10.14(±8.28), and in accordance with the score, the suicidal ideation was shown as normal 48.8%, light suicidal ideation 12.9%, heavy suicidal ideation 6.2%, and severe suicidal ideation 32.1%. The suicidal ideation of the subjects was different in accordance with the matter of employment, economic state, family history related to drinking, the number of hospitalization related to drinking, the number of suicide attempt, and the degree of hopelessness. The suicidal ideation had correlations with the number of suicide attempt ($r=.346, p<.001$), and hopelessness ($r=.485, p<.001$). And the influence factors of suicidal ideation included the hopelessness, the number of suicide attempt, and 1-2 times of suicide attempt experience, and the explanatory power of the model was 34% ($F=28.19, p<.001$). For patients with alcohol dependence, it would be necessary to have the intervention for the recovery of hopelessness and a special care for the first suicide attempters.*

Keywords: *Alcohol Dependence, Hopelessness, Insight, Hanil Alcohol Insight Scale (HAIS), Suicidal Ideation*

I. INTRODUCTION

It is known that the patients with alcohol dependence show the high suicide risk [1], which is related to the negative emotions such as depression, hostility, and guilt [2]. Moreover, the patients with alcohol dependence suppress and feel difficult to express their emotions with limited methods to express them [3], so that there should be the interest in emotional problems of patients with alcohol dependence. However, the patients with alcohol dependence choose drinking as a method to solve this emotional problem. In other words, they use drinking as a means to relieve stress and negative emotions [4]. The depression which is the representative negative emotion experienced by the patients

with alcohol dependence means the degree of hopelessness and demotivation caused by depression and emotional lethargy [5], and the low expectation and negative attitude toward the future are the characteristics of hopelessness. As a negative belief, the hopelessness cognitively concludes that there is no hope for the future. Also, as a factor predicting the intake of drinking [6], the hopelessness is known as a factor mediating the relation between depression and suicidal ideation, and also closely correlating with suicidal ideation [5]. The people with alcohol dependence and the past experience in suicide attempt reported the higher hopelessness than ordinary people [7], which shows that the hopelessness experienced by patients with alcohol dependence could have effects on their suicidal behavior. Therefore, it would be necessary to understand the hopelessness which could be an important factor of depression, out of negative mental state of patients with alcohol dependence.

Meanwhile, the insight of patients with alcohol dependence could work as a factor having effects on the recovery [8]. The low insight level of patients with alcohol dependence disturbs the early intervention and focuses more on the treatment of physical complications than drinking itself, so that the treatment and recovery are not easy [9]. The insight could be an ability to understand/accept the cause and meaning of his/her own drinking condition. On top of having effects on the emotional/psychological areas of patients with alcohol dependence, it also works as an essential variable on the motivation for treatment and prognosis [10]. Thus, the insight could have effects on the emotion of patients with alcohol dependence. However, even though there are preceding researches revealing the significant correlations between mental health and insight of patients with alcohol dependence [11] [12], there are not many researches on the insight and hopelessness of patients with alcohol dependence, and especially, it is rare to find researches targeting the patients with severe alcohol dependence required to be hospitalized. There was a research reporting the relation between insight and depression of alcohol dependence, and the depression was reported as the main symptom [13]. Especially, as the depression and the use of alcohol are grabbing attention as the risk factors of suicide, the disabled with the use of alcohol shows such high suicide risk, good enough to say that more than 50% of the whole suicide attempts are related to the alcohol abuse [14]. Therefore, this study aimed to understand the effects of hopelessness and insight on the suicidal ideation of the hospitalized patients with alcohol dependence.

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II. PROPOSED METHODS

This is a descriptive research using the self-report survey method. The research subjects are the male patients diagnosed with alcohol dependence by DSM-5 in an alcohol treatment hospital of Gyeonggi-do in Korea. After explaining the purpose and methods of this study to the department head and the charge nurse of the institute, the permission and cooperation for the performance of this research were obtained. Also, the research subjects were directly explained for asking for the cooperation of data collection. They were explained that the results of survey would be statistically processed, and they would not be used for other than the purpose. They were also explained that the anonymity of subjects would be maintained, the participation could be stopped in the middle of filling out the questionnaire, and there would be no disadvantages by it. After receiving the written consent including such contents, the researcher directly collected the questionnaires and then provided gifts to the subjects who completed the survey.

In order to secure the power of this study, the G*Power 3.1 Program was used. In the results of calculating through the multiple regression analysis (significance level: .05, medium-size effect: .15, power: .95), the number of required subjects was 119 people. Based on it, total 170 questionnaires were distributed by considering the response rate and dropout rate of questionnaire, and total 162 questionnaires were used for the final analysis after excluding eight questionnaires with lots of no-responses or insincere responses.

2.1. Research Tools

For the hopelessness, the Beck Hopelessness Scale (BHS) [15] was used. The total score includes from 0point to 20points. The higher score means the higher hopelessness. The division of each subject in accordance with the score level is like the normal level (0~3), the slight hopelessness (4~8), the medium level of hopelessness (9~14), and the severe condition of hopelessness (15~20). In this study, the Cronbach's α value was .928.

The insight was measured by the Hanil Alcohol Insight Scale (HAIS) [16]. This tool is composed of 20 questions including positive and negative questions. In case when the total score is three or up, the insight is evaluated as lacking. In case when the total score is 16 or up, the insight is evaluated as good. In this study, the Cronbach's α value was .883.

The suicidal ideation was measured by the Scale for Suicide Ideation (SSI) developed by Beck et al. [17], and the

suicidal ideation/behavior currently felt in daily life were measured by total 19 questions, composed of the 3-point likert Scale. Depending on the added score, it is judged as severe suicidal ideation for 15 or up, moderate suicidal ideation for 12-14, mild suicidal ideation for 9-11, and normal for less than 8. The reliability of the Scale for Suicide Ideation showed the Cronbach's α as .923.

2.2. Data Analysis

Using the SPSS/WIN 20.0 Program, the collected data was analyzed through t-test and ANOVA by calculating the percentage, frequency analysis, mean, and standard deviation. The Duncan test was used for its post-test. The correlation was analyzed through the Pearson correlation coefficient. The factors having effects on the suicidal ideation were analyzed by using the multiple linear regression analysis.

III. RESULTS AND DISCUSSION

3.1. General Characteristics and Characteristics Related to Drinking and Suicide of Subjects

As shown in table 1, regarding the age, the subjects in their 50s (40.3%) were the most while the high school graduates (46.3%) were the most in the academic background. The subjects without occupations were 72.8%, and the subjects living alone were 46.9%. The 66.0% of the subjects said that they were in difficult economic state. Regarding the characteristics related to drinking, the initial drinking period was average 19.19(\pm 4.64)-year old. The 90.1% of the subjects perceived their own drinking problem. The case of family history of alcohol dependence included 48.8%, and the case of voluntary hospitalization included 58.6%. The number of hospitalization was shown as 1~2 times 34.0%, 3~5 times 25.3%, and six times or up 40.7%. Regarding the characteristics related to suicide, the case with suicide attempt experience included 40.7%, which was higher than a preceding research showing the 39% rate of suicide attempt of patients with alcohol dependence [18] [19]. Out of the people with experience in suicide attempt, the number of suicide attempt was shown as once 45.3%, twice 39.1%, and three times or up 15.6%, and the 37.5% of the subjects said that their suicide attempts were not informed to anybody. The case of experiencing the suicide of surrounding people included 35.2%, and out of the suicide attempters, the friend (61.4%) was the most, and the parents and siblings were 17.5%.

TABLE 1. DEMOGRAPHIC CHARACTERISTICS, CHARACTERISTICS RELATED TO DRINKING AND SUICIDE (N=162)

	Variables	Categories	n (%) or Mean \pm SD
Demographic Characteristics	Age (year)	\leq 30s	13 (8.0)
		40s	32 (19.8)
		50s	67 (40.3)
		\geq 60s	50 (21.5)
	Education level	Elementary school	15 (9.3)
		Middle school	34 (21.0)



		High school	75 (46.3)
		College	18 (11.1)
		≥Graduate school	20 (12.3)
	Occupation	Have not	118 (72.8)
		Have	44 (27.2)
	Living with	None	76 (46.9)
		Others (family)	86 (53.1)
	Religion	Yes	75 (46.3)
		NO	87 (53.7)
	Types of health insurance	National health insurance	61 (37.7)
		Medical care	84 (51.9)
		Others	17 (10.5)
	Economic level	Poor	107 (66.0)
		Moderate	48 (29.6)
		Wealthy	7 (4.3)
Characteristics Related to Drinking	Initial drinking period	(years)	19.19 ±4.64
	Awareness about the drinking problem	Yes	146 (90.1)
		No	16 (9.9)
	Family history	Yes	79 (48.8)
		No	83 (51.2)
	Type of admission	Consent	55 (34.0)
		Voluntary	95 (58.6)
Involuntary		12 (7.4)	
Frequency of admission	1~2 times	55 (34.0)	
	3~5 times	41 (25.3)	
	≥6 times	66 (40.7)	
Period of abstinence	<1month	28 (17.3)	
	1~5 months	58 (35.8)	
	6~11 months	31 (19.1)	
	12~ 23 months	21 (13.0)	
	≥24 months	24 (14.8)	
Characteristics Related to Suicide	Suicideattempt history	Yes	96 (59.3)
		No	64 (40.7)
	Frequency of suicide attempt(n=64)	1 time	29 (45.3)
		2 times	25 (39.1)
		≥3 times	10 (15.6)
Suicide attempters (surrounding people)	No	105 (64.8)	
	Yes	57 (35.2)	
Type of suicide attempters (n=57)	Friends	35 (61.4)	
	Cousin	12 (21.1)	
	Family (parents andsiblings)	10 (17.5)	
Suicidal attempt notification (n=64)	A person who can help	26 (40.6)	
	A person who can't help	14 (21.9)	
	Not informed to anybody	24 (37.5)	

3.2. Level of Hopelessness, Insight, and Suicidal Ideation of Subjects

Level of hopelessness, insight, and suicidal ideation of subjects are shown in table 2. The score of hopelessness of the subjects was average 7.88(±6.35) points, which was the same

with the research using the same hopelessness scale [20]. Depending on the level, it was like normal (36.4%), mild hopelessness (19.8%), moderate level (21.6%), and



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severe hopelessness (22.2%).

The score of insight was average $4.48(\pm 3.80)$ points, and the level of insight was poor insight (27.2%), fair insight (50.0%), and good insight (22.8%). It was lower than the $9.02(\pm 8.03)$ points in a research verifying the insight score targeting the hospitalized patients with alcohol dependence [8].

The score of suicidal ideation of the subjects was average $10.14(\pm 8.28)$ points. Even though the subjects in the normal score (8 points or lower) were 48.8%, the patients with alcohol dependence in suicidal ideation showing the possibility of suicide were 83 subjects (51.3%), which was higher than the 41.3% in a preceding research using the same SSI tool [18].

TABLE 2. LEVEL OF HOPELESSNESS, INSIGHT, AND SUICIDAL IDEATION OF SUBJECTS

Variables	Categories	n (%) or Mean \pm SD
Hopelessness		7.88 \pm 6.35
	Normal (0~3)	59 (36.4)
	Mild (4~8)	32 (19.8)
	Moderate (9~14)	35 (21.6)
	Severe (15~20)	36 (22.2)
Insight		4.48 \pm 3.80
	Intellectual scores	2.25 \pm 2.92
	Emotional scores	3.65 \pm 3.45
	Poor (-20~3)	44 (27.2)
	Fair (4~15)	81 (50.0)
	Good (16~20)	37 (22.8)
Suicidal ideation		10.14 \pm 8.28
	Normal (\leq 8)	79 (48.8)
	Mild (9~11)	21 (12.9)
	Moderate (12~14)	10 (6.2)
	Severe (\geq 15)	52 (32.1)

3.3. Suicidal Ideation in Accordance with the Characteristics of Subjects

Differences in the suicidal ideation in accordance with the characteristics of subjects are shown in table 3. Out of the characteristics of the subjects, in accordance with the

TABLE 3. DIFFERENCES IN THE SUICIDAL IDEATION IN ACCORDANCE WITH THE CHARACTERISTICS OF SUBJECTS

Variables	Categories	Mean \pm SD	t or F	p	
Demographic Characteristics	Age (year)	\leq 30s	8.38 \pm 6.16	0.78	.506
		40s	11.91 \pm 9.45		
		50s	10.13 \pm 8.47		
		\geq 60s	9.48 \pm 7.74		
	Education level	Elementary school	11.27 \pm 8.55	0.15	.962
		Middle school	9.79 \pm 6.83		
High school		10.13 \pm 8.61			
College		9.28 \pm 7.32			
	\geq Graduate school	10.70 \pm 10.38			

occupation ($t=4.20$, $p<.001$), economic state ($F=6.64$, $p=.002$), family history related to drinking ($t=2.13$, $p=.035$), the number of hospitalization related to drinking ($F=3.62$, $p=.029$), suicide attempt experience ($t=-4.19$, $p<.001$), and the experience in suicide of surrounding people ($t=-3.25$, $p<.001$), there were differences in the suicidal ideation. Such results could be interpreted in the same context with the preceding research on the high suicidal ideation rate in accordance with the matter of employment and the type of medical security [19] [21]. A research on the economically-active population of Korea also showed that the risk of suicidal ideation got higher when the personal income level was lower [22], so that the economic level would be closely related to the suicidal ideation. A preceding research on the influence factors of suicidal behavior showed the differences in accordance with the experience in suicide of surrounding people [23], which accorded with this study. As the suicide risk of patients with alcohol dependence is higher than the one of ordinary people, the urgency and importance of intervention in the patients with alcohol dependence who have experienced the suicide of surrounding people are implied.

In case of the suicidal ideation in accordance with the level of hopelessness of the subjects, the ordinary people showed the lowest, and it was high in the group of slight hopelessness, the group of medium-level hopelessness, and the group of severe hopelessness in order ($F=16.32$, $p<.001$). Even though this study could not verify the effects of alcohol dependence on the suicidal ideation, in relation to the result showing the high suicidal ideation in case of severe hopelessness of patients with alcohol dependence, it is in the same context showing the complete mediating role of hopelessness in a research on the effects of drinking problem on the suicidal ideation of university students, and a research on the effects of stress on the suicide incidents of university students [24] [25].

	Occupation	Have not Have	11.54 ±8.53 6.39 ±6.25	4.20	<.001
	Living with	None Others (family)	11.11 ±8.38 9.29 ±8.15	1.40	.165
	Religion	Yes NO	9.47 ±8.24 10.72 ±8.33	-0.96	.337
	Types of health insurance	National health insurance Medical care Others	10.13 ±8.13 10.02 ±8.35 10.76 ±8.96	0.06	.946
	Economic level	Poor Moderate Wealthy	11.71 ±8.60 ^a 7.54 ±7.03 ^{ab} 4.00 ±2.77 ^b	6.64 (a>b)	.002
Characteristics Related to Drinking	Awareness about the drinking problem	Yes No	9.99 ±8.17 11.56 ±9.47	-0.72	.472
	Family history	Yes No	11.54 ±8.45 8.81 ±7.94	2.13	.035
	Type of admission	Consent Voluntary Involuntary	10.18 ±8.26 10.53 ±8.34 6.92 ±7.93	1.01	.366
	Frequency of admission	1~2 times 3~5 times ≥6 times	7.75 ±7.28 ^a 11.15 ±9.25 ^b 11.52 ±8.12 ^b	3.62 (a<b)	.029
	Period of abstinence	<1month 1~5 months 6~11 months 12~ 23 months ≥24 months	9.89 ±7.83 10.69 ±8.56 11.13 ±8.16 10.71 ±8.69 7.33 ±7.97	0.89	.470
Characteristics Related to Suicide	Suicide attempt history	Yes No	7.93 ±7.30 13.36 ±8.62	-4.19	<.001
	Frequency of suicide attempt(n=64)	1 time 2 times ≥3 times	12.41 ±8.57 14.08 ±8.11 16.90 ±8.79	1.08	.345
	Suicide attempters (surrounding people)	No Yes	8.63 ±7.91 12.93 ±8.30	-3.25	.001
	Type of suicide attempters (n=57)	Friends Cousin Family (parents and siblings)	14.09 ±8.10 9.50 ±7.67 13.00 ±9.40	1.38	.260
	Suicidal attempt notification (n=64)	A person who can help A person who can't help Not informed to anybody	11.65 ±9.68 9.64 ±8.07 9.88 ±8.02	0.52	.597
Hopelessness		Normal Mild Moderate Severe	5.37 ±5.26 ^a 11.16 ±7.98 ^b 11.34 ±6.92 ^b 15.89 ±9.60 ^c	16.32 (a<b<c)	<.001
Insight		Poor Fair	11.93 ±9.35 9.21 ±7.69	1.55	.215

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		Good	10.05 ±8.08	
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3.4. Correlations between Research Variables

As shown in table 4, in the results of verifying the correlations of the initial drinking period, the number of suicide attempt, hopelessness, insight, and suicidal ideation, out of the characteristics of the subjects, there were correlations with the initial drinking period ($r=-.189$, $p=.016$), the number of suicide attempt ($r=.346$, $p<.001$), and

hopelessness ($r=.485$, $p<.001$). In other words, when the initial drinking period was earlier, when the number of suicide attempt was more, and when the hopelessness was higher, the suicidal ideation was higher. Such results support the preceding researches suggesting the correlation with the suicidal ideation of patients with alcohol dependence [19] [20] [21] [26].

TABLE 4. CORRELATIONS BETWEEN RESEARCH VARIABLES

	Initial drinking period r (p)	Frequency of suicide attempt r (p)	Hopelessness r (p)	Insight r (p)
Suicidal ideation	-.189* (.016)	.346** ($<.001$)	.485** ($<.001$)	-.080 (.310)
Initial drinking period	1	-.153 (.052)	-.098 (.216)	-.111 (.161)
Frequency of suicide attempt		1	.092 (.246)	.074 (.348)
Hopelessness			1	-.120 (.128)
Insight				1

3.5. Influence Factors on the Suicidal Ideation of Subjects

Influence factors on the suicidal ideation are shown in table 5. In the results of putting the matter of employment, economic state, family history related to drinking, the number of hospitalization related to drinking, suicide attempt experience, experience in suicide of surrounding people, the initial drinking period, the number of suicide attempt, and hopelessness, showing statistically significant differences in the suicidal ideation, out of the demographic characteristics, and the characteristics related to drinking and suicide, in order to verify the factors having effects on the suicidal ideation of the subjects, the hopelessness ($t=6.69$, $p<.001$), the number of

suicide attempt ($t=4.76$, $p<.001$), and 1-2 times of suicide attempt experience ($t=-2.30$, $p=.023$) had effects on the suicidal ideation, and the explanatory power of this model was 34% ($F=28.19$, $p<.001$). In other words, when the hopelessness was higher, and when the number of suicide attempt was more, the suicidal ideation was higher. In case of 1-2 times of suicide attempt experience, the suicidal ideation was low. It is in the similar context with the results of a preceding research verifying that the hopelessness is an element accelerating the suicide intention [27] [28] as the high hopelessness increases the suicidal ideation [20].

TABLE 5. INFLUENCE FACTORS ON THE SUICIDAL IDEATION

	B	SE	β	t	p	VIF
(Contents)	4.885	1.012		4.83	$<.001$	
Hopelessness	0.569	0.085	.436	6.69	$<.001$	1.030
Frequency of suicide attempt	2.272	0.477	.307	4.76	$<.001$	1.009
Suicide attempt (1~2 times)	-2.598	1.132	-.149	-2.30	.023	1.022

IV. CONCLUSION

In the results of this study, first, the suicide risk of the hospitalized patients with alcohol dependence was very high. Second, there were significant differences in the suicidal ideation in accordance with the matter of employment, economic state, family history related to drinking, the number of hospitalization, suicide attempt experience, and the experience in suicide of surrounding people of the patients with alcohol dependence. Third, the factors having effects on the suicidal ideation included the hopelessness, the number of suicide attempt, and the suicide attempt experience (1~2 times). Based on the results of this study, it would be necessary to have the intervention for decreasing the hopelessness of the hospitalized patients with alcohol

dependence, and also the approach to the subjects with many suicide attempts, and especially, it would be necessary to provide a special care to the subjects with 1~2 times of suicide attempt experience for preventing their suicide attempts again.

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