Alcohol Dependence Assessment in South Korea and Mainland China

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This study aimed at using design-thinking to surmount globally harmful drinking dynamics, as identified in South Korea and alcohol research-scarce China. The prevalence rate of 12-month diagnoses of the Rapid Alcohol Problem Screen 4 (RAPS4) on alcohol dependence in South Korea and China were compared using the Emergency Department (EDs) surveys, sponsored by the World Health Organization (WHO), conducted on 4,509 adults visiting the Korean and Chinese EDs. Weighted prevalence estimates of alcohol dependence were cross-tabulated using chi-square tests and dependence relationships across sociodemographic characteristics were established using linear logistic regression analysis. Psychiatric disarrays were shown by researchers to indicate alcohol dependence associated with drinking norms, evidencing a higher proportion of alcohol dependence in South Korea (17.5%), as compared to limited alcohol dependence sampling tied to prevalence and correlates of alcohol consumption in China (13.7%). The odds of alcohol dependence for males were statistically significant and high in both countries, being four times higher in South Korea [4.9% (95% CI, 3.6% – 6.8%)] than China [2.6% (95% CI, 1.9% – 3.6%)]. In both countries, alcohol dependence was more salient in younger ages (18 – 24 and 25 – 34) and extensively greater for males in the oldest age group, along with highest heavy episodic drinking among ages 25 – 34 in China. Future investigators would benefit by attending precisely to measures for alcohol dependence as well as for alcohol consumption.

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Ⅰ. Introduction

Alcohol dependence refers to a complex genetic predisposition that has become one of the most important global diagnostic health issues in both the young and old, which has been associated with deleterious and unequivocal health consequences including heart disease, cancer, accidents, suicide, notably shorter life spans, hepatitis, cirrhosis, pancreatitis, gastritis, ulcers, fractures and peripheral neuropathy (Dawson, 2000, p.72; Hahn, Woolf-King, & Muyindike, 2011, p.172; Mayfield, Harris, & Schuckit, 2008, p.275). The clinical diagnoses of alcohol dependence are identified warning signs, such as chemical tolerance, physical withdrawal, impaired control, and unsuccessful attempts to reduce drinking behavior (Hingson & Zha, 2009, p.1478). The International Classification of Diseases and Health Problems, tenth revision (ICD-10) also describes this dependence as a "multitude of behavioral, cognitive, and physiological manifestations; a tenacious and progressive pattern to insensitivity, excessive drinking despite harmful consequences and/or higher priorities given to alcohol use than other activities and obligations" (Esser et al., 2014, p.4; WHO, 2011). Aggregate studies have considered alcohol dependence a serious public health concern that contributes to 1.8 million deaths annually around the globe and a major cause of comorbidity; its biggest contributor being alcohol-drinking patterns (Agrawal et al, 2009, p.2047; Swahn, Ali, Palmier, Sikazwe, & Mayeya, 2011, p.1; Swahn, Palmier, & Kasirye, 2013, p.1).

A drinking volume defined as excessive consumption is associated with morbidity and mortality-related alcohol dependence (Dawson, 2000, p.72; WHO, 2010) and myriad other health and social complications including an onset of HIV infections, Sexually Transmitted Diseases (STDs) and unintended pregnancies (Dawson, 2011, p.144; Naimi, Lipscomb, Brewer, & Gilbert, 2003, p.1136; Schneider, Neuman, Chersich, & Parry, 2012, p.1; Shield, Parry, & Rehm, 2013, p.155; Testino, 2011, p.314; Testino & Borro, 2010, p.322). Worldwide, harmful drinking, which leads to alcohol dependence, has been linked to more than 60 non-communicable diseases

(NCDs) and injuries, and claiming 2.5 million deaths annually (WHO, 2011).

Numerous public health scientific journals and statistical materials indicate that high-risk drinking, in all probability, has reached epidemic proportions in South Korea and China, though no research evidence were shown so far to relate its formal relationship with alcohol dependence. The WHO (2011) describes the harmful use of alcohol as "a physical or mental addiction that may lead to alcohol dependence – also known as alcoholism or alcohol dependence syndrome." Alcohol dependence is classified within the Alcohol Use Disorder (AUD) of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), and carried over to the DSM-V (WHO, 2014). In 2013, alcohol abuse and alcohol dependence were defined as a single, but distinctly addressed disorder (American Psychiatric Association, 2013; Tang et al., 2013, p.270).

A main concern from this rests largely on the burden of alcohol consumption in South Korea and China. Despite the knowledge of global alcohol consumption irregularities, research to date is largely limited to mortality and alcohol-related chronic illnesses (Han et al., 2015, p.316; Ryu, Crespi, & Maxwell, 2013, p.183). Some researchers show higher peculiar apprehension levels of alcohol dependence dynamics in South Korea compared to other countries (Kang, Kim, Cho, & Park, 2014, p.1; Min, et al., 2008, p.1). Although elevated health-related results of alcohol dependence prevail in both South Korea and China, this has not been made a priority. The prevalence of alcohol dependence as a health problem precursor is underrated (Min et al., 2008,p.1), and there seems to be no estimate on the prevalence of alcohol dependence for ages 15 and above using the RAPS4, a screening instrument that Cherpitel (2000), found as surpassing other ED screening instruments for alcohol dependence at both sensitivity and specificity levels. The objective of our study includes assessing alcohol dependence in South Korea and China using the RAPS4.

II. Background

1. Alcohol dependence in South Korea

Alcohol dependence rates in South Korea's history has a national lifetime prevalence of 11.7% in rural settlements, being as high as 22.4% for males and only 0.7% for females - in some cases higher than the western hemisphere and several other Asian countries (Ryu et al., 2013, p.184; Min et al., 2008, p.1). The WHO (2004) evidenced alcohol dependence in South Korea at 12.8% in men and 3.7% in females by using the CAGE (Cut, Annoyed, Guilty, Eye-opener),a four-item alcohol dependence screening instrument traditionally used in EDs. Besides the CAGE, long and short version screening instruments, such as the BMAST, AUDIT, and TWEAK, have been used in EDs for diagnostic tests, and their performance have varied significantly. This disparity called forth the subsequent development of the RAPS. This test's ability to identify a high percentage of all patients with (the sensitivity) and without (the specificity) problem drinking, out-performed the outcome of existing screening instruments across several minor categories (Cherpitel, 2000, p.447). A further four-item version of the RAPS, the RAPS4, improved the effectiveness of the parent instrument owing to its brevity and the fact that patients in the ED, irrespective of gender or ethnicity, need not be asked additional items after screening positive on any one of the four items (Cherpitel, 2002, p.1686).

In South Korea, increasing trends for alcohol dependence prevalence, consumption rates, drinking frequency at early developmental stages, substance abuse, prevalence of elevated elderly chemical dependence, general frequency of, and consistent adulthood binge drinking, are observed; all suggestive of unlimited alcohol availability (Han et al., 2015, p.320; Kim, Wiechelt, & Kim, 2010, p.327). This notion is reflective of a study suggesting that alcohol ingestion is highly prevalent in South Korea, from being central to personal relationships and meal participation (Kim & Jeon, 2011, p.457), thus implying South Korea alcohol use is a socio-cultural

phenomenon (Han et al., 2015, p.320).

According to Oh (2009) and Kim, Chu, Kim, and Moon (2011), alcohol's easy availability in South Korea has resulted in excessive alcohol consumption. South Korea appears among the highest-ranking nations in alcohol consumption, with 63.4% of the total population consuming more than five servings of alcohol at a time (WHO, 2004). Kim and Jean (2011) and the WHO (2011) have also reported that South Korea drinks yearly enough to account for nearly 15L of ethanol per person above the age of 15 years, and most of the consumption is ascribed to middle-aged men.

2. Alcohol dependence in China

Harmful alcohol drinking in China that contributes to mental health problems and alcohol dependence has reached higher epidemic levels, particularly in urban settlements (Kim, et al., 2011, p.1; Hao et al., 2004, p.49). Through the WHO (2011), researchers have identified China's alcohol dependence as a recurrent health issue leading to mental and physical health-related complications. Still, there is a lack of national alcohol dependence sampling in China. Only isolated trials and a few professional primary health-care workers trained in the diagnosis and treatment of alcohol dependence and other alcohol-related disorders are readily available (Tang et al., 2011, p.273). As such, it is challenging to capture the entire scope of alcohol dependence and its ensuing fragile social consequence in this nation. One is mostly left relying on the WHO's public health review data. Despite the limitations, Hao et al. (2004), evidenced a considerably higher 33:1 male to female ratio of alcohol dependence when compared to developed countries. Consequently, aggregate studies in China have been shown to suggest that alcohol dependence is more prevalent than alcohol abuse, and significantly higher in urban than rural settings (Zhou et al., 2011, p.339; Zhou et al., 2009, p.1770).

Ⅲ. Materials and Methods

1. Sampling

A cross-sectional assessment of alcohol dependence was conducted on injured patients visiting EDs in South Korea and China using the WHO collaborative study. Research data was pooled from 4,509 men and women aged 15 – 55 from 2008 to 2009 from five EDs in Mainland China and four EDs in South Korea, at geographically diverse regions. The sample was selected according to an observed alcohol dependence prevalence of 44.1% Koreans and 55.9% Chinese. Research was supervised by the Sahmyook University Institutional Review Board (IRB# SYU08-00001).

2. Measurements

A. Alcohol dependence assessment

In the baseline survey questionnaire, participants were asked a set of four questions by a trained practitioner using an ED-approved RAPS4 screening instrument for detecting alcohol dependence in the past 12 months. Long and short version screening instruments, such as the CAGE, BMAST, AUDIT, and TWEAK, have been used in EDs for Alcohol Use Disorders diagnostic tests and their performance have varied significantly. This disparity led to the subsequent development of the RAPS. The RAPS identified a percentage of all patients with (sensitivity) and without (specificity) problem-drinking and surpassed the performance of the existing screening instruments across several minor categories. A shorter four-item version of the RAPS (the RAPS4) improved the effectiveness of the parent instrument as a result of its brevity and that patients in the emergency room, irrespective of gender or ethnicity need not be asked additional items after

screening positive on any one of the four items. The RAPS 4 screening responses are not averaged; a single yes for any of the four questions qualifies for alcohol dependence (Cherpitel & Clark, 1995, p.628; TobuTT, 2012, p.147). The four items (remorse, amnesia or blackout, perform, starter or eye opener) on the RAPS4 questionnaire preferred for this study are assessed as follows, correspondingly: (1) During the last year have you felt guilt or remorse after drinking? (2) During the last year has a friend or family member ever told you about things you said that you could not remember? (3) During the last year have you failed to do what was normally expected from you because of drinking? (4) Do you sometimes drink first thing in the morning after waking up? An affirmative response to any one of the four questions was considered positive for alcohol dependence.

B. Demographics

Sociodemographic characteristics assessed in this study were gender, age groups (18–24, 25–34, 35–44, 45–54, ≥55), academic level attainment (elementary, high school, college, graduate school), and employment status (currently employed for more than 30 hours or otherwise).

C. Statistical Analysis

Our analyses were conducted using the SPSS version 22 (SPSS, Chicago., IL). Basic analyses using Pearson's Chi-square were conducted on categorical data to examine differences between the characteristics of patients recruited from both countries. Values of $p<0.05$ were accepted as statistically significant. Characteristics compared included demographics and the RAPS4 for alcohol dependence. SPSS regression odds ratios (ORs) models with 95% confidence intervals (CIs) were computed on all prevalence estimates for country-specific alcohol dependence valuations.

Ⅳ. Results

1. Descriptive

Table 1. Respondents Characteristic in the Republic of Korea and Mainland China, N(%)

	Korean (n = 1,989)		China (n = 2,540)		Total (n = 4529)		p-value[b]
	N[a]	%	N	%	N	%	
Sex							
Male	1,220	(61.3)	1,642	(64.6)	2,862	(63.2)	p<0.012
Female	769	(38.7)	898	(35.4)	1,667	(36.8)	
Age							
18 - 24	314	(15.8)	609	(24.0)	923	(20.4)	
25 - 34	438	(22.0)	760	(29.9)	1,198	(26.5)	
35 - 44	420	(21.1)	566	(22.3)	986	(21.8)	p<0.000
45 - 54	399	(20.1)	316	(12.4)	715	(15.7)	
55+	418	(21.0)	289	(11.4)	707	(15.6)	
Education							
Elementary	206	(10.4)	338	(13.3)	544	(12.0)	
High School	872	(43.8)	1,388	(54.6)	2,260	(49.9)	p<0.000
College	882	(44.3)	753	(29.6)	1,635	(36.1)	
Graduate School	29	(1.5)	61	(24.4)	90	(2.0)	
Employment Status							
Employed	1,065	(53.5)	1,641	(64.6)	2,706	(59.7)	p<0.000
Otherwise	924	(46.5)	899	(35.4)	1,823	(40.3)	

[a]N represents the total sample in Korea and Mainland China
[b]t-test results between Korea and China are all statistically significant @p<0.05

 Table 1 represents the classification of South Korea and China respondents according to their sociodemographic characteristics. The sample comprised of 43.9% Koreans and 56.1% Chinese; 63.2% were males and 36.8% females. The highest percentages from all the sample ages in both South Korea and China fell in the 25 - 34 years bracket at 22.0% and 29.9%, respectively. Of interest, most respondents from South Korea had completed college (44.3%) and comprised more than a quarter

of the total sample, while most respondents from China had completed high school, comprising more than 50% of the total sample. The percentage of those employed was more than the unemployed for both countries, with corresponding employment rates being 53.8% in South Korea and, a notably higher ratio, 65.0% in China.

2. Alcohol Dependence

Table 2 shows the overall prevalence of RAPS4-evaluated 12 month alcohol dependence. Instrument questions align with the RAPS4 ED screening tool mainly for alcohol dependence, so the analysis of the RAPS4 result is not based on average responses, since a yes to any of the four questions qualifies as alcohol dependence.

Table 2. Alcohol Dependence Characteristic in the Republic of Korea and Mainland China

	Not Dependent		Dependent		p-value
	N	%	N	%	
Country: Korea					
Sex					
Male	920	56.1	300	86.2	p<0.000
Female	721	43.9	48	13.8	
Age					
18 - 24	269	16.4	45	12.9	
25 - 34	354	21.6	84	24.1	
35 - 44	338	20.6	82	23.6	p<0.001
45 - 54	311	18.9	88	25.3	
55+	369	22.5	49	14.1	
Education					
Elementary	174	10.6	32	9.2	
High School	696	42.4	176	50.6	
College	747	45.5	135	38.8	p<0.049
Graduate School	24	1.5	5	1.4	
Employment Status					
Employed	829	50.8	236	68.2	p<0.000

	Not Dependent		Dependent		*p*-value
	N	%	N	%	
Otherwise	804	49.2	110	31.8	
Country: China					
Sex					
Male	1,419	62.6	223	81.4	*p*<0,000
Female	847	37.4	51	18.6	
Age					
18-24	559	24.6	50	18.3	
25-34	668	29.5	92	33.6	
35-44	496	21.9	70	25.5	*p*<0.024
45-54	276	12.2	40	14.6	
55+	267	11.8	22	8.0	
Education					
Elementary	306	13.5	32	11.7	
High School	1,231	54.3	157	57.3	*p*<0.074
College	680	30.0	73	26.6	
Graduate School	49	2.2	12	4.4	
Employment Status					
Employed	1,446	64.2	195	71.2	*p*<0.013
Otherwise	806	35.8	79	28.8	

N represents the number of alcohol dependent and not dependent respondents retrieved from RAPS4, a 4-question tool used in EDs

t-test results between Korea and China are all statistically significant @p<0.05; except in the China education variable deviations. Not all levels of education analysis results met the statistical significance level, p< 0.05.

3. Odds Ratios

As shown in previous studies, Table 3 indicates that the odds of alcohol dependence for men are significantly higher and surpass all other variables. Irrespective of common drinking behavioral norms in South Korea and China, the odds of any 12-month alcohol dependence was four times more likely higher among males in South Korea [4.9% (95% CI, 3.6% - 6.8%)] than in China [2.6% (95%

CI, 1.9% – 3.6%)]. The employment status variable was in South Korea approximately 2.1 times more likely and China 1.4 times more likely related to alcohol dependence. Age was statistically significant to alcohol dependence among the 55+age bracket both in South Korea [2.1% (95% CI, 1.5% – 3.1%)] and China [1.8% (95% CI, 1.0% – 3.0%)] compared to other age groups. Early-drinking onset was associated with alcohol dependence in adulthood and may affect people aged 45-54 years. Those aged above 55 years are more likely to be close to a retirement age, suggesting that since they could be pensioners with unstructured schedules and have more opportunities for unmitigated alcohol consumption. Presumably, this group would be more susceptible to allostatic load, which would also lead to higher vulnerability for alcohol dependence. Compared with other education levels, elementary school variables from both countries showed greater odds of alcohol dependence [1.3% (95% CI, 0.9% – 2.1%)] and [1.2% (95% CI, 0.8% – 1.8%)] in South Korea and China, respectively. The odds of alcohol dependence were significantly higher for respondents who had completed college in China [2.3% (95% CI, 1.1% – 4.9%)] than other education levels.

Table 3. Prevalence and Adjusted[a] Odds Ratio of Alcohol Dependence and Sociodemographic Characteristics, by Country

	South Korea		China	
	n (SE)	OR [95% CI]	n (SE)	OR [95% CI]
Country	348 (0.09)	1.8 [1.5-2.1][b]	274 (0.1)	1.0 [Reference]
Sex				
Male	292 (0.16)	4.9 [3.6-6.8][b]	231 (0.16)	2.6 [1.9-3.6][b]
Female	55 (0.15)	1.0 [Reference]	44 (0.14)	1.0 [Reference]
Age				
18-24	53 (0.20)	1.8 [1.2-2.6][b]	42 (0.25)	1.7 [1.0-2.8][b]
25-34	98 (0.20)	1.8 [1.3-2.7][b]	78 (0.26)	1.7 [1.0-2.7][b]
35-44	85 (0.15)	1.0 [Reference]	67 (0.22)	1.0 [Reference]
45-54	72 (0.22)	1.3 [0.8-2.0]	56 (0.27)	1.1 [0.6-1.8]

	South Korea		China	
	n (SE)	OR [95% CI]	n (SE)	OR [95% CI]
55+	40 (0.19)	2.1 [1.5-3.1][b]	31 (0.28)	1.8 [1.0-3.0][b]
Education				
Elementary	36 (0.21)	1.3 [0.9-2.1]	28 (0.20)	1.2 [0.8-1.8]
High School	186 (0.21)	0.9 [0.6-1.4]	147 (0.22)	1.0 [0.7-1.6]
College	116 (0.53)	1.1 [0.4-3.2]	92 (0.37)	2.3 [1.1-4.9][b]
Graduate	10 (0.19)	1.0 [Reference]	7 (0.19)	1.0 [Reference]
Employment Status				
Employed	241 (0.10)	1.0 [Reference]	190 (0.12)	1.0 [Reference]
Otherwise	106 (0.13)	2.1 [1.6-2.7][b]	83 (0.14)	1.4 [1.1-1.8][b]

[a]adjusted odds ratio; [b]statistically significant; P values: [P] < 0,05; CI = confidence interval; OR = odds ratio; SE = standard error.

V. Discussion

Many studies have identified an intrinsic relationship between alcohol consumption and alcohol dependence. Drinking initiated at early ages is not only associated with alcohol-induced brain damage and neurocognitive deficits, but may also increase the risk of progression to AUDs (Hingson, Heeren, & Winter, 2006, p.743). Bierut et al. (2002, p.208), and Mayfield et al. (2008, p.817), suggest that alcohol dependence is a manifestation of underlying traits and genetic inclination. Whereas most reviewed research tends to focus on comparing South Korea to the US or some other developed country, our analysis has focused on a global-regional comparison with China, which, along with South Korea, are two among the main alcohol consumption countries. South Korea and China have a similar and contemporary tenet of alcohol consumption, for men in particular, that includes drinking at mealtime, supposedly to enhance social relations with friends and business companions, advance good associations between supervisors and employees,

relieve stress, or initiate a blissful and friendly mood for adults (Jiang et al., 2015, p.e190; Han et al., 2015, p.316; Millwood et al., 2013, p.817).This calls for an infrastructure dynamic strong enough to establish a change in the drinking paradigm. In trying to understand the adverse health effects of alcohol abuse and dependence on humans from earlier and recent studies, limited data is available on Asian populations (Kang et al., 2014, p.1)

Our study has examined the prevalence of alcohol dependence using the RAPS4 among respondents visiting EDs in South Korea and China. Of note, 13.7% of the total sample, 17.5% Koreans and 10.8% Chinese were shown to be alcohol dependent. The non-alcohol dependence component may be judicially attributed to alcohol abuse categories. That 17.5% prevalence of alcohol dependence in South Korea was higher than the WHO (2004) South Korea rural population rate results (11.7%). Similarly, China's alcohol dependence was 10.8%, also exceeding their 5.2% WHO (2004) delimited provincial survey results. Findings are suggestive that alcohol dependence has not been studied as extensively as it should be for both China and the South Korea. Moreover, the alcohol dependence research reports in both countries are from restricted areas with sporadic international associations. In China, previous studies examined alcohol dependence on a small scale within some areas in the country and never nationally or internationally. Furthermore, community-based treatment and legitimately accepted medication for alcohol dependence may not be available (Tang et al., 2013, p.273). The data samples were almost similar in both ROK and China.

The WHO (2004) reported at least 12.8% males to 3.7% females in South Korea and 9.2% males to 0.6% females in China with prevalence of alcohol dependence. In this study, alcohol dependence male to female ratios were significantly higher among Koreans (4.9%) than their Chinese counterparts (2.6%). Consistent with gender differentials on alcohol dependence, this study has been shown to yield greater odds of alcohol dependence among men than in women (4.9% and 2.6%, respectively), in both nations. Traditionally, alcohol drinking in South Korea is

largely male-driven, with consumption rates of about 18L a year compared with only 1L for women, and approximate estimations of 22% men and 1% women lifetime rates of alcohol dependence in rural settlements (WHO, 2004). In China, Li et al. (2011) reported widespread magnitudes of harmful drinking at 62.7% for men and 51.0% for women. Further, previous research has shown that Asians tend to report lower levels of alcohol consumption (Mahoney, Graham, Cottrell & Kim, 2012, p.469).

Also of note is the plausibility that the rising economy in both South Korea and China may have increased alcohol consumption levels among women (Kim, & Kim, 2008, p.1078; Tang et al., 2013, p.271). Unlimited societal alcohol drinking among women in the ROK reached 59.5% in 2001; paralleling women employment levels (Lee et al., 2010, p.297; Ryu et al., 2013, p.189; Mahoney et al., 2012, p.469).

Our study could be used to suggest a reorientation of the approach of policy makers towards alcohol dependence. This is a public health issue ever increasing in importance, and thorough measures should be taken to address it. South Korea and China should adopt more rigorous policy measures, such as those at the European commission (Babor et al., 2010, p.771; Rehm, Shield, Gmel, Rehm, & Frick, 2013, p.89; WHO, 2012). The lack of information, peer-reviewed research and awareness initiatives would be potential challenges.

As a solution to the lack of information and extensive research on alcohol dependence, it is imperative for the governments of both countries to develop, support, and maintain a common evidence-based alcohol dependence commission. This should assist in obtaining comparable information on alcohol consumption, especially for the younger age brackets; further, evident definitions on alcohol consumption dependence, drinking patterns, cultural influences, added ingredients, social and health effects of alcohol, and the impact of alcohol consumption in productivity and socio-economic development. This information, when gathered, can be used as a basis to inform, educate, and raise awareness on the impact of alcohol dependence, and on appropriate consumption patterns. Broad and carefully

implemented health and life-skills education programs, beginning in early childhood and ideally continued throughout adolescence, can raise awareness and have an impact on risk behaviour (Botvin, Griffin, & Murphy, 2010, p.289; Griffin & Botvin, 2010, p.505). Such interventions should address both risk factors related to alcohol and developmental periods of risk,particularly adolescence, and protective factors reflected in changes of lifestyle and behaviour.

VI. Conclusion

We have clearly shown a rising trend of alcohol dependence in both South Korea and China compared to the WHO studies in 2004. Conclusively, alcohol dependence male to female ratios are significantly higher among Koreans than their Chinese counterparts. Further research is recommended for RAPS4 analysis in settings other than where our data was collected, thus adding to this growing body of knowledge. In China, AUDs have been identified, but not extensively studied. Further studies addressing alcohol dependence as a nationwide phenomenon are needed. Overall, both countries need to implement the WHO's global strategic approach designed to alleviate alcohol-related problems.

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한국과 중국의 응급실 내방 손상환자의 알코올 의존자 비율 비교 연구

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　본 연구는 한국과 중국의 응급실에 손상으로 내방한 성인을 대상으로 알코올의존의 정도를 측정하고 두 국가 간 알코올의존의 차이를 규명하고자 하는 목적에서 수행되었다. 세계보건기구의 유해음주감소를 위한 응급실연구의 프로토콜의 절차와 방법에 따라 두 국가에서 자료를 수집하였다. 알코올의존에 대한 측정은 RAPS4를 활용하여 지난 12개월동안의 음주 상태를 질문하여 의존을 측정하였다. 분석대상은 모두 4,509명이었으며, 비율의 차이를 검정하기 위해 교차분석을 실시하였으며, 선형 로지스틱 회귀분석을 통해 결론을 유도하였다. 응급실에 손상으로 내방한 환자의 알코올의존의 비율이 한국은 17.5%로 중국의 13.7%보다 통계적으로 유의하게 높았다. 양국 모두에서 남성의 알코올의존에 대한 확률은 높았고 또한 두 나라 사이에 유의한 차이가 나타났다. 즉 한국[4.9% (95%CI, 3.6%-6.8%)]에서 중국[2.6% (95%CI, 1.9%-3.5%)]보다 4배 더 높게 나타났다. 일반적으로 알코올의존은 어린 나이에서 두드러진 특징을 보였으나 (한국 18-24세, 중국 25-34세), 남성들의 경우 나이가 가장 많은 그룹에서 알코올의존이 특이하게 높았고, 중국의 경우 25-34세 집단에서는 빈번한 폭음에 의한 알코올의존이 큰 것으로 나타났다. 알코올소비를 감소시킬 대책뿐 아니라 알코올의존에 대한 대책이 필요한 것으로 판단된다.

주요 용어: 알코올 의존, 응급실, 한국, 중국, RAPS4