

Workplace Drinking Environment and Women's Drinking in Korea

Sulki Chung

(Department of Social Welfare, Chung-Ang University)

Hyun Jin Jun

(Seoul Foundation of Women and Family)

Seung Soo Kim

(Department of Social Welfare, Graduated School, Chung-Ang University)

Introduction

Changes in the economy opened the workplace to greater participation by women worldwide, and Korea is not an exception. Female labor market participation has increased from 42.8% in 1980 to 50.3% in 2006 (Korea National Statistical Office, 2007). This has led to increased opportunities for women to drink. The recent statistics reporting the rate of female current drinkers to be 67.4% (compared to 23.0% in 1989) testifies to this effect (Korea Institute for Health and Social Affairs, 2006). Drinking at workplace is still very commonplace in Korean society. Although workers may not necessarily drink during the work hour, company sponsored after work gathering that usually involve drinking is considered an important part of work life, which affects one's career life as well as social life at the workplace. A relatively recent study on alcohol use among workers in Korea found that 96% of those in the labor force drank at after-work gatherings, and the average frequency of drinking occasion was found to be 5.4 times a month (Choi et al., 2001). The frequency and consumption was higher

compared to average adults 19 and older, indicating that workers are at greater risk of developing alcohol-related problems.

The discussion of workplace drinking including employment and problem drinking, the loss of productivity, and increased injuries has been documented in the western literature (Ames & Janes, 1987; Trice, 1992; Rice, Longabaugh & Stout, 1997); however, the subject has received very limited attention in Korea. Likewise, studies that focus specifically on women's drinking is quite scarce. This study, therefore, attempts to examine sociocultural factors related to working women's risky drinking. At an era of increased female workforce participation, understanding the relationship is expected to serve two purposes. One, it will build a ground for future research efforts in women and alcohol in Korea. Two, the knowledge will provide a more accurate reflection of the relationship between workplace environment and drinking.

Women and alcohol

Research on alcohol has only begun to receive attention in Korea in the past decade or so. Among these, only few studies focus on specifically on women. Even in the western world where alcohol research has gained popularity, research efforts on women's alcohol use became more common in 1960s and early 1970s (Schmidt, Klee, & Ames, 1990). Women are more vulnerable than men to adverse consequences of alcohol consumption. Physically, women achieve higher concentrations of alcohol in the blood, which leads to more impairment than men given the equivalent amount of alcohol (Ammendola et al., 2000; Graham et al., 1998; Pfefferbaum et al., 2001; Schweinsburg et al., 2003). Compared to men, women are also more susceptible to alcohol-related risks such as physical harm, interpersonal violence, and accidents. In the

past, alcohol was known to be metabolized almost entirely in the liver. Recent studies, however, found that as much as 30% of the alcohol consumed is metabolized in the stomach, whereas for women, only half that amount of breakdown occurs in the stomach. Therefore, greater amount of alcohol will enter the bloodstream for women (Kinney, 2003). This indicates that women are more likely to experience adverse effects of alcohol compared to men (Brienza & Stein, 2002; Angove & Fothergill, 2003; Kinney, 2003; Wilsnack et al., 2000).

Heavy drinking among women is said to increase the risk for breast cancer (Smith-Warner et al., 1998), drinking during menstrual period will increase the absorption speed of alcohol due to changes in sexual hormones (Kinney, 2003), and drinking during pregnancy may result in Fetal Alcohol Syndrome (Schmidt et al., 1990). Women are more susceptible to developing alcohol-induced liver disease over a shorter period of time compared to men (Angove & Fothergill, 2003), and heavy drinking women are more prone to developing breast cancer (WHO, 2005). A study of female college students reported that there is a positive relationship between the amount of alcohol consumed and sexual victimization (Gross & Billingham, 1998). All these results point to stronger vulnerability to alcohol for women than for men, which indicate a need for gender-specific examination of factors involved with alcohol problems

Workplace environment and alcohol involvement

The workplace is an environment where one's drinking habits can be developed and modified as well as one's drinking norm. It is also a source of social support and a ground for developing social network (Rice et al., 1997). Workplace drinking culture

that accepts or encourages alcohol use is said to influence one's drinking (Ames & Janes, 1992). A workplace's tolerance of drinking can be influenced by many factors including the enforcement of alcohol-related policy, gender mix of its workers, and rate of drinkers among employees (NIAAA, 1999). Workplace settings with higher proportion of male workers are more likely to hold heavy drinking culture, since drinking is used to build solidarity and conformity to the group (Trice, 1992). In female dominated occupations, both male and female are reported to drink less and have lower rate of alcohol problems compared to their counterparts (Kraft, Blum, Martin, & Roman, 1993).

Workplace alcohol policies also influence employee's drinking practices. Although there is a wide variation in alcohol policies, Ames and Janes (1992) reported that most managers and supervisors were not aware of the company's policy toward alcohol. Moreover, only when the alcohol use was interfering with the productivity were managers motivated to enforce drinking policies. This implies that not only the existence of alcohol policy but the company's intention to enforce the policy is an important factor in reducing alcohol-related problems at the workplace.

Korean workplace is characterized by frequent after work gatherings. In many occasions, participation in these gatherings is not a voluntary option. Although held after work hours, after work gatherings are considered an extension of work, and those who don't participate are frowned upon. This is a problem because at the drinking gatherings, there is usually the pressure to drink, and especially when this is coming from the superiors or close co-workers, the potential to drink increases regardless of one's personal intention (Kim and Kim, 2004). It is through these gatherings that workplace drinking cultures are formulated. Drinking subcultures within the workplace

is correlated with possibility of developing alcohol-related problems (Yang, Yang, & Kawachi, 2001). It could be said, therefore, the risk of developing alcohol related problems or alcohol abuse is likely to be higher among those workplaces with more frequent after work gatherings (Kweon, 2005).

Despite these potential problems in drinking culture at workplace, only few studies have examined the workplace environment and drinking practices in Korea. These studies indicated the work types, work hours, manager or supervisor's attitude toward alcohol, drinking subculture among employees, and the frequency of after work gatherings as influential factors of alcohol consumption and drinking frequencies among employees (Kim TW, 2001, Kweon, 2005, Korean Alcohol Research Foundation, 2006). Among these, the frequency of work related gatherings after work is pointed out as the strong predictor of increase in drinking frequencies (KARF, 2006). In a study by Lee and Chegal (2002), 58.4% of the employees responded their managers hold a very permissive attitude toward drinking, which in return affects the drinking practices of the employees. Korean culture values the group solidarity and group identity, which makes easier for colleagues' drinking culture to influence other members within the work community.

Knowledge on women and alcohol is still at an elementary level in Korea. Even in the west, alcohol knowledge was based on findings from male subjects until several decades ago. Interest in alcohol regarding its effects on women has just begun to receive attention in Korea. However, no studies have been done in the area of workplace environment and women. The aforementioned studies on workplace environment and drinking practices have not examined men and women separately, although current knowledge in alcohol suggest that women and men differ in regard to alcohol-related

risks. This study is expected to contribute to current knowledge by focusing on workplace environment regarding alcohol and its effect specifically on women's drinking behavior.

Methodology

Sample

The sampling frame for the study was adult females who are active in the workforce in Seoul and adjacent area. The range of work type is quite broad, and for the purposes of homogeneity of the sample, the selection was limited to white-collar workers (i.e., office workers). A convenient sample of 209 women from 23 different workplaces was included, and data were collected by filling out a self-administered questionnaire between March and May of 2007.

Description of Variables

The variables analyzed in this study included demographic characteristics of the female workers, positive and negative alcohol expectancies, workplace drinking culture, workplace environment regarding alcohol use, and two problematic drinking indicators, namely, risky drinking and binge drinking frequency.

Alcohol expectancy. Although the focus of this study is to examine workplace environmental factors influencing risky drinking practices among female employees, two of the cognitive factors were included in the analyses, namely positive alcohol expectancy and negative alcohol expectancy. The reason for the inclusion of these

variables is to address the multifaceted aspects of alcohol use. Not single but many factors explain one's drinking practices. Therefore, authors concluded that at least some individual factors known to affect drinking behavior should be included for the analyses. The main interest of authors was to examine the effects of workplace environment controlling for individual factors that are known to influence one's alcohol use behavior. Alcohol expectancy was chosen for this purpose.

Alcohol expectancy is defined as one's anticipated outcomes of consuming alcohol (Goldman, Brown, & Christiansen, 1987; Thombs, 1993). Based on the notion that drinking behavior is largely determined by the reinforcement one expects to receive as an outcome of drinking, alcohol expectancies have been consistently identified as factors predicting one's alcohol use throughout many studies (Chung, 2006; Chung 2007; Lee et al., 2003; Leigh & Stacy, 1993; Jones, Corbin, & Fromme, 2001; Oei, Fergusson, & Lee, 1998; Oei & Jardim, 2006; Yoon, Kim, & Chang, 1999). Alcohol expectancy was measured by using the Drinking Expectancy Questionnaire-Revised (DEQ-R) (Lee et al., 2003). Original DEQ-R is a 37-item questionnaire assessing alcohol expectancies, composed of 5 different sub areas of alcohol expectancy. In order to use it for the Korean female sample, a factor analysis was conducted. The results revealed that a 31-item, two factor (positive, negative expectancy) questionnaire to be more suitable for the current sample. Participants responded on a 5-point Likert type scale from 'Strongly Disagree' to 'Strongly Agree', with higher score reflecting greater expectancy for both positive and negative expectancies. The reliability and validity of the DEQ-R has been established (Lee et al., 2003), and the inter-item consistency was .91 and .89 for positive and negative expectancy scale, respectively, for this study.

Workplace drinking culture reflects the permissiveness of alcohol use at the workplace. A standardized instrument that measures Korean workplace drinking culture from female employee's perspective is not yet available. Therefore, focus group interviews were conducted with working women, and a total of 6 items were derived from the interviews that indicate workplace drinking culture. These include the following: 1) Workers feel comfortable asking for non-alcoholic beverage at employee gatherings, 2) Our boss pressures employees to drink excessively, 3) Our boss offers alternative activities (movies, plays, etc.) for employee gatherings, 4) I cannot refuse when my boss pressures me to drink, 5) Employees at my work feel they can choose not to drink at employee gatherings, and 6) When co-workers ask me to drink I give in to conform with group identity. Each item was measured with a 5 point Likert type scale from 'Definitely Agree' to 'Definitely Disagree', with higher score indicating more accepting and encouraging alcohol use. A pretest with female workers was run to validate the scale. For the current study sample, the internal consistency of the scale was .75, which was acceptable.

Workplace environment regarding alcohol use. Two variables were included to reflect workplace environment; the frequency of workplace after-work gatherings, and the percent of drinkers at work. After work gatherings among employees are company sponsored events that require an almost compulsory participation among Korean workers, and they almost always involve alcohol use. Studies that looked at workplace environment and alcohol use indicated that after work gatherings were an important predictor of alcohol use among workers (KARF, 2006). Participants were asked to

record the number of times the workplace held a company sponsored after work gatherings in the past 30 days.

Previous research studies have maintained that drinking behavior among workers is highly influenced by male-female composition of employees (Trice, 1992). Because this study examined females, authors believed that not only gender composition, but the percentage of drinkers at work is expected to affect alcohol use. Percentage of drinkers at workplace was obtained by asking “approximately what percent of your co-workers are drinkers?”

Risky drinking was measured using the Alcohol Use Disorders Identification Test (World Health Organization, WHO, 1992). The Alcohol Use Disorders Identification Test (AUDIT) is a 10-item questionnaire developed to identify persons at risk for developing alcohol-related problems (Babor et al., 1989), which include the amount and frequency of drinking, alcohol dependence symptoms, and problems caused by drinking¹. The Korean version of AUDIT (AUDIT-K) has established reliability ranging from .77 to .82 (Kim IS, 2001, Kim & Lee, 2003). Studies have used AUDIT-K to screen for those at risk for problem drinking (Korean Alcohol Research Foundation, 2006). The current study adopted the conventional cut-off level of ≥ 8 points for the AUDIT, as this has been demonstrated to give a satisfactory degree of sensitivity and specificity in general populations (Allen, Litten, Fertig, & Babor, 1997; Babor et al., 2001). After summing up the score for the 10 items, those who scored 8 or more were categorized as ‘risky drinkers’.

¹ Participants respond to items 1 to 8 on a five point scale from ‘never’ to ‘4 or more times a week’ for the first question; ‘1 to 2’ to ‘10 or more’ for the second question and ‘never’ to ‘almost daily’ for the next 5 questions. The last two have a 3-point scale from ‘No’ to ‘Yes, but not during the last year’, to ‘Yes, in the past year’ (WHO, 1992).

Binge drinking is operationalized as the consumption of at least 5 drinks in a row during the 2 weeks preceding their completion of the questionnaire (Wechsler et al., 1994). Controversies exist regarding applying the same measure for women and men; however, this study incorporated the conventional measure of the binge drinking. The frequency of binge drinking in the past 30 days were used for the analysis.

Analyses

Analyses were conducted using SAS 9.1 (The SAS System for Windows, 2002-2003). These analyses included: (a) descriptive statistics for understanding sample characteristics, (b) logistic regression for examining factors related to risky drinking, and (c) hierarchical multiple regression to examine predictors of binge drinking frequencies.

Results

Sample Characteristics

The total sample included 209 females currently participating in the workforce. The mean age was 29.6 years ($SD = 5.63$), and the majority were college graduates or over (87.6%) (see Table 1). Forty-two percent of the sample had no religion, and 31.6% were Protestants. More than 75% of the participants were single, and about half (55.1%) of the respondents' monthly income was between \$1,000 and \$2,000.

<Table 1> Sample characteristics

(N=209)

	n	%
Age	Mean=29.58	(SD=5.63)
Education		
High school	26	12.4
College	164	78.5
Graduate school	19	9.1
Religion		
Protestant	66	31.6
Catholic	32	15.3
Buddhist	21	10.1
None	88	42.1
Other	2	1.0
Marital Status		
Not married	159	76.1
Married	48	23.0
Other (separated, divorced, cohabiting)	2	0.5
Monthly Income ^a		
Less than \$1,000	12	5.9
\$1,000-2,000	113	55.1
\$2,000-3,000	53	25.9
\$3,000-4,000	20	9.8
\$4,000-5,000	6	2.9
More than \$5,000	1	0.5
Missing	4	2.0

^a Korean Won has been converted to approximate US dollars for ease of interpretation.

Workplace drinking environment

Table 2 summarizes the workplace drinking environments of the study participants. Considering that this sample includes only women, it is interesting to see that the percent of current drinkers is 86.6% of the total sample. This is higher than the

current statistics indicating that 67.4% of females were current drinkers in the general population (KIHASA, 2006). This speaks to the fact that working females are more exposed to drinking than their non-working counterparts. The mean frequency of after-work gatherings was 1.3 (SD=1.1). However, the frequency ranged from 0 to 7 (not shown on the table) implying that some workplaces held after-work gatherings almost twice a week. The mean percentage of drinking co-workers was reported to be 60%. When asked whether respondents felt the drinking culture at their workplace was problematic, about half (45.6) answered that it was problematic, and little over half answered that it was not problematic. Less than 1 out of 10 respondents (9.4%) participated in an alcohol-related education at the work site, indicating that majority of workplaces do not provide alcohol problem prevention education.

<Table 2> Workplace drinking environment		(N=209)	
		n (%), m(SD)	
Drinking status			
	No drinker	16	(7.7)
	Past drinker (didn't drink in the past year)	12	(5.7)
	Current drinker	181	(86.6)
Workplace drinking factors			
	Workplace after-work gatherings (past 30 days)	1.3	(SD=1.1)
	Proportion of drinkers at work	60.1	(SD=28.1)
	Proportion of male employees	39.6	(SD=29.4)
Perception of workplace drinking culture			
	Not problematic	111	(54.4)
	Somewhat problematic	80	(39.2)
	Very problematic	13	(6.4)
Alcohol-related education experience			
	Yes	19	(9.4)
	No	184	(90.6)
Workplace drinking culture		17.5	(SD=4.7)

Workplace drinking environment and risky drinking

The primary purpose of this study is to examine the influence of workplace drinking environment on female employee's drinking behavior. Multiple logistic regression was used to analyze whether workplace environmental factors influenced risky drinking practices after controlling for demographic characteristics and positive and negative expectancy toward alcohol (see Table 3). Results from logistic regression analysis indicate that the model was significant ($\chi^2=43.67$, $df=9$, $p<.0001$). Three

variables were found to be significant predictors of risky drinking among female employees; positive drinking expectancy, workplace drinking culture, and frequency of after work gatherings. The individual or cognitive factor, the positive alcohol expectancy, is found to be associated with the possibility of engaging in risky drinking. For every unit increase in the positive expectancy scale, there is a 6% increase in possibility to become a risky drinker in terms of odds (O.R.=1.06, $p<.05$). Among workplace environmental factors, the workplace drinking culture and the frequency of alcohol-related gatherings were found to be predictors of risky drinking practices. Being more permissive or accepting of alcohol at workplace is associated with an increase in the possibility to engage in risky drinking practices (i.e., for every unit increase in the workplace culture toward encouraging alcohol use, there is a 14% chance of becoming a risky drinker) (O.R.=1.14, $p<.001$). Another workplace factor associated with risky drinking was after work gatherings. As expected, every time employees get together for after work gatherings, there is a 43% increase in the chance to become a risky drinker (O.R.=1.43, $p<.05$). This result confirms the previous literature indicating the influence of workplace environment in employees' drinking behaviors (Ames & Janes, 1992; Yang et al., 2001). That is, regardless of one's intension, alcohol accepting culture is likely to increase their employee's hazardous drinking.

<Table 3> Factors influencing risky drinking among female employees (N=209)

	Risky Drinking			
	Coefficient	Odds Ratio	Confidence Interval	
			Lower 95%	Upper 95%
Age	-0.01	.99	.90	1.09
Education (college graduate=1)	.02	1.02	.35	2.98
Marital status (married =1)	.30	1.35	.48	3.83
Monthly income	-0.003	1.00	.99	1.00
Positive drinking expectancy ^a	.06*	1.06	1.01	1.12
Negative drinking expectancy ^b	.04	1.04	0.99	1.11
Workplace drinking culture	.13**	1.14	1.05	1.24
Frequency of after work gathering	.36*	1.43	1.01	2.03
% of drinkers at work	.01	1.01	0.99	1.02

-2LL= 187.228, $\chi^2=43.67$, $df=9$, $p<.0001$

* $p<.05$, ** $p<.01$, *** $p<.001$

Note: ^aThe mean for positive drinking expectancy was 41.9 (SD=9.1), and ranged from 15 to 62.

^bThe mean for negative drinking expectancy was 24.1 (SD=6.5), and ranged from 11 to 46.

Workplace environment and binge drinking

In order to examine whether workplace environmental factors influence binge drinking, another form of hazardous drinking, hierarchical multiple regression analysis was conducted. In hierarchical regression, the research decides how many and the order in which predictors to enter in the model. Usually, the order of entry is based on logical or theoretical considerations (Cody & Smith, 1997). Hierarchical regression shows researchers how most variance in the dependent can be explained by one or a set of new

independent variables, over and above that explained by an earlier set. For this analysis, variables were entered in two steps. Demographic and individual cognitive factors were entered in the first step as they were considered the most adjacent factors to an individual regarding the binge drinking behavior. Results show that being single (not married), earning more monthly income, and having positive and negative expectancy toward alcohol predict the frequency of binge drinking among respondents (see Table 4). Together, these variables explained a total of 16% ($R^2=.16$, Adjusted $R^2=.13$) of variance in binge drinking frequencies.

Workplace environment variables were entered in the second step in order to examine whether these variables predict worker's binge drinking after controlling for individual and cognitive characteristics. Findings indicate that when workplace variables are entered, cognitive factors, i.e., positive and negative expectancies, cease to be significant predictors of binge drinking frequencies. Table 4 shows that only two variables, monthly income and after-work gatherings, are statistically significant. That is, increase in monthly income is associated with more frequent binge drinking ($b=.01$, $p<.05$), and likewise, the increase in after-work gathering frequency is correlated with more binge drinking ($b=.65$, $p<.05$). The positive relationship between monthly income and binge drinking does not merely suggest that people binge simply because they have more financial means. In Korean society, one possible explanation is that as one becomes more senior at work, she may feel more obliged to conform to the group solidarity which may be related to increased opportunities for binge drinking.

The variables in Step 2 together accounted for 23% of variance in binge drinking, indicating a 7% increase from the first step without the workplace variables ($R^2=.23$, Adjusted $R^2=.19$). This finding indicates that workplace variables are more

influential factors of workers' binge drinking frequencies than cognitive factors known to predict one's drinking practices.

<Table 4> Factors influencing binge drinking frequencies among female employees (N=209)

	Step 1		Step 2	
	B	β	b	β
Age	.06	.09	.04	.06
Education (College graduate=1)	-1.38	-.11	-.82	-.07
Marital status (Married=1)	-1.87	-.19*	-1.04	-.11
Monthly Income	.01	.26**	.01	.22*
Positive drinking expectancy	.08	.16*	.06	.13
Negative drinking expectancy	.10	.15*	.09	.14
Workplace drinking culture			.07	.08
Frequency of after-work gathering			.65	.19*
% of drinking colleagues			.02	.12
Intercept	-6.44		-8.36	
F	5.32***		4.96***	
R ²	.16		.23	
Adjusted R ²	.13		.19	

*p<.05, **p<.01, ***p<.001

Discussion

This study examined the influence of the workplace environmental factors on female employee's hazardous drinking. For the purposes of the study, survey data were gathered from 209 female employees working full time in the vicinity of Seoul. Almost

one out of ten female workers was a current drinker, which is higher than the rate of drinkers in general public. Results of multiple regression analyses confirmed that workplace drinking culture and after work gatherings were significant predictors of risky drinking and binge drinking, even after controlling for individual's cognitive factors. Findings also showed that alcohol expectancies, known to affect one's drinking behavior, become non-significant predictors when workplace environment factors were entered.

The workplace is an environment in which the development of drinking norms and rationales for drinking occur. All work sites have some standards for appropriate behavior. Alcohol-related behaviors are subject to this standard, and when workplace is supportive of drinking and promotes alcohol abuse among employees, it can be the source of alcohol-related adverse consequences (Rice et al., 1997). Findings from this study speaks to this notion by showing that the workplace environment, i.e., drinking subculture that encourages alcohol use and promotes frequent after work gatherings, can bolster workers' hazardous drinking regardless of one's own attitude toward alcohol use.

Findings from this study imply that workplace-centered primary prevention strategies should be developed. This approach would benefit not just the employee who has alcohol-related problems or who engages in deviant drinking, but the entire persons who inhabit or interact with the work environment. Development and implementation of workplace alcohol awareness programs to change drinking cultures and to prevent alcohol-related problems seems essential in Korean workplaces. Programs that involve individual's change in attitude or intention to alcohol use as well as campaigns and programs focusing on the group as a whole should be conducted.

Through many changes and economic growth women have become an important work force in the society. Being in the workforce means increased exposure to alcohol, and the high percentage of current drinkers among female workers compared to general public speaks to this effect. Due to different responses to alcohol, females are at more risk for adverse consequences related to alcohol. Prevention efforts should direct toward targeting men and women separately in order to better meet specific needs. Current study findings on workplace factors and their effects on women's risky drinking is expected to contribute to more expanded research in the future on female alcohol use at workplace.

Although not directly inquired, current finding that less than 10% of employees have experienced alcohol-related education of any kind may entail that most of these workplaces do not have an alcohol policy. This may involve a more macro-level intervention such as enacting a nationwide regulation that encourage workplaces to adopt a specific alcohol policy as well as campaigns that promote individual company's efforts to develop a policy and to increase awareness among all employees.

This study was the first attempt in Korea to examine workplace environment and its effect on female employee's drinking behavior. Although a meaningful attempt, current study is not without limitations. The sample was limited to white collar workers, and the variables examined were not comprehensive. Individual factors were limited to the alcohol expectancies, and workplace environment factors did not include alcohol availability, work stress, structural features of the workplace, etc. More comprehensive research is needed in the area that addresses these limitations.

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