Drinking behaviors by stress level in Korean university students

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Abstract
The purposes of this study are to estimate the stress level of university students, and to verify the relationships between stress level and drinking behavior. A questionnaire survey was administered to 430 university students in the Gangwon area in Korea from November 5 to November 28, 2008, and data from 391 students were used for the final statistical analysis. The most stressful factor was “Worry about academic achievements” (2.86 by Likert-type 4 point scale). The subjects were divided into two groups, a low stress group (≤ 65.0) and a high stress group (≥ 66.0), by the mean value (65.1) and median value (66.0) of the stress levels. The drinking frequency was not different between the two stress groups, but the amount of alcohol consumption was significantly different (P < 0.05). The portion of students reporting drinking “7 glasses or over” was higher in the lower stress group than in the higher stress group. In addition, factor 6, “Lack of learning ability”, was negatively correlated with drinking frequency and the amount of alcohol consumption (P < 0.05), and factor 3, “Worry about academic achievements”, was negatively correlated with the amount of drinking (P < 0.05). The major motive for drinking was “When overjoyed or there is something to celebrate” (2.62), and the main expected effect of drinking was “Drinking enables me to get together with people and shape my sociability” (2.73). The higher stress group showed significantly higher scores on several items in the categories of motives (P < 0.01), negative experience (P < 0.05), and expected effects (P < 0.05) of drinking than the lower stress group. Our results imply that university students at the lower stress level may drink more from social motives in positive drinking environments, while those at the higher stress level may have more problematic-drinking despite their smaller amount of alcohol consumption.

Key Words: Drinking behavior, stress, university students

Introduction
Drinking in modern society means more than simply ingesting alcohol. Drinking behavior also conveys social and emotional meanings. Drinking plays a role in enhancing positive emotions during social gatherings such as anniversaries, festivals, and other events, as well as in developing interpersonal relationships. In addition, drinking serves as a means to alleviate tension and pains caused by environmental and mental stress in undesirable situations [1]. Korea has a distinctive drinking culture which is fairly positive and permissive, compared with other countries. In Korea, drunken behaviors are generously accepted, people even boast of the large amount of alcohol they can drink, and liquor can be easily purchased. This causes problems of over-consumption and alcoholism [2,3]. According to The Survey on National Health and Nutrition 2010, 77.8% of male and 43% of female adults over 19 years drink more than once a month. These data reveal that the percentage of Korean males who drink is higher than that of males in the United States, while the percentages of females are similar [4,5].

A psychiatric study reports that the modernization and industrialization of society have contributed to the increase in environmental and mental stresses, resulting in increases in drinking [6]. Conger proposed a theory that people tend to drink alcohol under stress because alcohol allegedly has effects on alleviating tension [7]. Subsequent studies confirmed that stressful situations trigger drinking [8,9]. Some studies have verified that a high perceived stress level is positively correlated with drinking frequency [10], and that the level of stress in daily life is a predictive factor for drinking [11]. However, although many attempts have been made to identify the relationship between stress and drinking [7-9], that relationship is not yet clear, and it remains controversial to date. Some studies have reported that stress and drinking are not related [12,13]. Recent studies suggested that the relationship between stress and drinking varies depending on the type of stress [14,15] and the ethnic group [16].

In Korea, university students are freed from the restrictions of their high school days and are officially allowed to drink. Campus life at university is the early stage of individuals’ drinking behavior, and drinking-related problems grow rapidly during this period [17,18]. It was estimated that 90% or more...
of Korean university students drink [19,20], which is higher than
the 75.9% of corporate employees in Korea [21] and the 70%
of university students in the US who drink [22]. A survey
conducted on female university students indicated that 92.4% of
drinking-related problems, highlighting the seriousness of
female students drink and 25.2% of them have experienced
drinking in university students [23].

University life is a transition period for students to become
independent entities in society, and students experience various
stresses caused by conflicts with friends, getting a job, school-
work, and financial problems during that period [24]. Therefore,
we wished to investigate the relationship between stress and
drinking for university students, who are exposed to different
stresses from those experienced by adults. The purposes of this
study are to estimate the stress level of university students in
Korea and to verify that stress level is related with drinking
behavior, including drinking frequency, amount of alcohol
consumption, motives for drinking, negative experiences related
with drinking, and expected effects of drinking.

Subjects and Methods

Subjects
A questionnaire survey was administered to 430 university
students from November 5 to November 28, 2008. Inclusion
criteria were as follows: students were at university in the
Gangwon area in Korea. We selected subjects so as to include
male and female students in different school years and with
various majors. Subjects who refused the survey or submitted
an incomplete response were excluded. In the end, data from
391 students were used for the statistical analysis.

The questionnaire
The questionnaire used for the study included three areas:
general characteristics of the subjects, the stress level, and
drinking behavior. For general characteristics of the subjects,
gender, age, grade, monthly expenditure, satisfaction of expen-
diture, and health status were examined. The stress level was
estimated by the Likert-type 4 point scale (1 = strongly disagree,
2 = disagree, 3 = agree, and 4 = strongly agree) based on 49 items
of the perceived stress scale [25]. Referring to previous studies
[10,26,27], drinking behavior was evaluated as follows: Frequency
of drinking and amount of alcohol consumption were examined
with each item as a nominal scale. Motives for drinking and
expected effects of drinking were examined with 10 items each
by the Likert-type 4 point scale. 10 items of negative experiences
related with drinking were measured by the interval scale (0 =
never, 1 = once in a while, 2 = sometimes, 3 = often, 4 = always).

Statistical analysis

Statistical analysis of the data from the survey was performed
using the SPSS WIN 18.0 program. Descriptive analysis and
frequency analysis were conducted for general characteristics and
stress level of the subjects. In addition, cross-tabulation analysis
(chi-square test) and independent t-test were performed to
compare differences between the higher stress group and the
lower stress group. To verify the reliability and validity of the
measuring tools for the stress level, Cronbach’s alpha value and
a factor analysis were used. Pearson’s correlation analysis was
conducted to confirm the relationship between stress factors and
frequency or amount of drinking.

Results

General characteristics of the subjects

General characteristics of the total subjects and subgroups by
stress level are shown in Table 1. Of the total subjects, 56.8%
were male students and 43.2% were female students. 66% of
the subjects were under 23 and 34.0% were 23 years and over.
Freshmen accounted for 44.1%, followed by sophomores 26.8%,
juniors 15.5% and seniors 13.7%. Reported average monthly
expenditure was over 300,000 won for 41.8% of the subjects,
200,000~300,000 won for 32.8%, and less than 200,000 won for
25.4%. 48.7% of the subjects were satisfied with their
expenditure and 51.3% were not. For health status perceived by
themselves, 64.5% of the subjects answered good.

The subjects were divided into two groups, a lower stress group
(≤ 65.0) and a higher stress group (≥ 66.0), according to the
mean value (65.1) and median value (66.0) of the stress levels.
A comparison of general characteristics between the two stress
groups showed significant differences in gender (P < 0.001), age
(P < 0.05), satisfaction with expenditure (P < 0.01), and health
status (P < 0.001). The higher stress group consists of female
students (51.9%), students aged less than 23 (71.8%), and those
dissatisfied with expenditures (57.6%). Hence, the higher stress
group features women and younger and the more unhealthy
subjects.

Stress level

Analysis of reliability and validity

An analysis for reliability and validity of the perceived stress
scale is shown in Table 2. In the first factor analysis for validity,
49 items were divided into 13 factors. Because some of them
were at a low level of explanatory power and confused the
meaning of factors, these were excluded, and the next factor
analysis was then conducted. The level regarded as the optimum
for validity was determined by repeating this process, and a total
of 8 factors that consisted of 30 question items were decided