

# Perceived Stress, Stress Symptoms, and Ways of Coping in Korean College Students

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## Perceived Stress, Stress Symptoms, and Ways of Coping in Korean College Students

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**Purpose:** The purpose of this study was to identify perceived stress level, stress symptoms, and ways of coping and to examine the influences of perceived stress level and ways of coping on stress symptoms in Korean college students. **Methods:** A cross-sectional descriptive survey study design was used. A sample of 1,056 male and female college students completed the Brief Encounter Psychosocial Instrument, Symptoms of Stress Inventory, and the Ways of Coping Checklist. Data was analyzed by t-test, ANOVA, Pearson correlation coefficient and multiple regression analysis using SPSS/WIN 12.0. **Results:** The perceived stress level, stress symptoms, and ways of coping were found to be significantly positively correlated with one another. The perceived stress level and stress symptoms had a greater positive correlation with emotion-focused coping than problem-focused coping. Perceived stress, emotion-relieving coping, perceived health status, and wishful thinking coping accounted for 37.7% of the variance in college students' stress symptoms. **Conclusion:** The findings suggest that nurses, while developing and providing stress management programs, need to be aware of the perceived stress level, health perception, and the tendency to emotion-focused coping in Korean college students, as these factors all influence their total stress symptoms.

**Key Words:** Psychological stress, Young adult, Coping behavior, Stress reaction

### INTRODUCTION

Stress is an inevitable issue for the people who make living in this rapidly changing modern era. Although the types and duration of stress and coping are different by one's developmental stage, everyone experiences certain level of stress in one's life (Gong, Jung, & Lee, 2008). College students are in the stage of emerging adulthood, shifting from adolescents to adult stage, where they explore their identity, transit to autonomic and independent life-style and experience various trial-and-errors, which are

an unstable but critical period (Arnett, 2007). Therefore, they have developmental tasks of becoming mature adults through overcoming the required competition and pressure of the society and developing the social, cognitive, and psychological skills (Hogarth, 1991), and more students are experiencing difficulty navigating the stress of college life (Alipuria, 2007). Most of the Korean college students, preoccupied with college entrance competition and studying under the directive and protective environment in their Junior and high school, become abruptly exposed to autonomic and liberal environment

**주요어:** 대학생, 지각된 스트레스, 스트레스 증상, 스트레스 대처방식

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투고일 2010년 8월 20일 / 수정일 1차: 2010년 10월 13일, 2차: 2010년 11월 3일 / 게재확정일 2010년 11월 4일

simultaneously with college entrance (Han & Kim, 2007). They experience quite level of stress in the process of adapting to college life, preparing for the future career, and interpersonal relationships (Alipuria, 2007; Kim, 2003). Especially, college students experience the most stress in academic issues followed by interpersonal relationship, career, financial, and family issues (Moon & Park, 2007).

Excessive stress of college students imposes negative effects on physical and emotional dimension. Preexisting studies about college students' stress found out that the more stress they experienced the more physical complaints they had (Murphy, Denis, Ward, & Tartar, 2010), as well as reporting of negative subjective health status (Oh, 2009). In addition to physical symptoms, psychological symptoms (Choi, 2003; Jimenez, Navia-Orsorio, & Diaz, 2010; Jin, Oh, & Kim, 2008), behavioral symptoms including alcohol consumption (Park, Armeli, & Tennen, 2004) and obsessive-compulsive behaviors (Lee, 2004) were also increased.

The individual difference of adaptation, such as whether he or she can adapt well or not, can be understood as the difference of one's coping strategy to impending stress (Gong & Lee, 2006). Lazarus and Folkman (1984) categorized stress coping type into problem-focused and emotion-focused coping. In problem-focused coping, a person tends to manage or change the issues that cause pain. In emotion-focused coping, a person tends to modify emotional response to the stressful issues. Korean studies of college students' coping strategies showed mixed results. Some of them reported that the college students more take problem-focused copings than emotion-focused (Gong & Lee, 2006; Moon & Park, 2007), while others reported the opposite (Min & Chang, 2006; Park, Bae, & Jung, 2002). So far, based on the thorough literature review, the researchers found out that most of the preexisting studies, focusing on the relationships among stress and individual traits or several stress-relating factors, have limitation to explore the influences of stress-relating factors on the stress symptoms and to provide comprehensive understanding of Korean college students' stress in terms of its level, symptoms and ways of coping. A large-scale repetitive investigation of Korean college students' stress was a necessity to get better understanding of the nature of it.

The purpose of this study was to identify perceived stress level, stress symptoms, and ways of coping and to examine the influences of perceived stress and ways of coping on stress symptoms in Korean college students. Specifically, there were three aims: (a) to identify the

students' perceived stress level, stress symptoms, and ways of coping; (b) to examine the differences of the variables according to the students' general characteristics; (c) to determine the predictive relationships and the influences on the students' stress symptoms.

## METHODS

### 1. Design

The study used a cross-sectional, descriptive survey study design to investigate the college students' perceived stress level, stress symptoms, and ways of coping and to explore the influencing factors to the students' stress symptoms.

### 2. Sampling and data Collection

The subjects were 1,056 male and female, university and college students from Seoul and 6 other metropolitan cities and 9 provinces via utilizing quota sampling based on the cities and provinces' population ratio. From May 1 to June 30, 2007 the data collected from the subjects who consented to participate through the structured questionnaire. The sample size was sufficient to analysis, the minimal sample size was estimated to be 103 subjects based on the power analysis by Cohen (1988) for regression models the significance level set  $\alpha$  at .05, power  $(1-\beta)$  at .80,  $R^2$  of .15 and the seven independent variables. Considering ethical issues of the research, the researchers explained the subjects' autonomy to participate to and drop out of the research, the purpose of the research, the subjects' anonymity and confidentially before getting consent. Out of the 1,120 returned questionnaires (return rate=93.3%), 1,056 (94.3%) effective ones were analyzed.

### 3. Measurement

Korean version of Brief Encounter Psychosocial Instrument (BEPsi-K) was used to measure college students' perceived stress. BEPSI was originally developed by Frank and Zysanski (1988) based on a stress-model. BEPSI-K was translated by Bae, Jeong, Yoo, and Huh (1992) and modified by Yim et al. (1996). BEPSI-K was a 5-item scale with items scored from 1 (none) to 5 (always) points. And the mean of the total scores stands for perceived stress. Higher scores indicate higher level of stress. The internal consistency was .80 in Yim et al. (1996)'s BEPSI-K validity study. In this study, the internal consistency was .83.

A Symptoms of Stress (SOS) Inventory was used to measure the symptoms of stress. SOS Inventory originally developed by Leckie & Thompson (1979) in the Stress Research Institute of the University of Washington and translated into Korean by Lee (1992). The SOS Inventory was a 94-item scale with items scored from 1 (none) to 5 (very frequently) points. The 11 subscales included in this Inventory are: peripheral manifestations, cardiopulmonary symptom, upper airway symptom, central-neurological symptom, gastrointestinal symptom, muscle tension, habitual patterns, depression, anxiety, emotional irritability, and cognitive disorganization. And the mean of the total scores and subscale scores stands for total and each stress symptom. Higher scores indicate more frequently experienced symptom of stress. Lee (1992) reported internal consistency of the total SOS was .97 and that ranged from .74 to .90 for each subscale. In this study, the internal consistency of the total SOS was .93 and those of subscales ranged from .77 to .90.

The Ways of Coping Checklist, originally developed by Lazarus and Folkman (1984) and translated into Korean and modified by Kim (1987) was used to measure the stress coping type. It was a 62-item scale with items scored from 1 (do not use) to 4 (use very frequently) points. The 4 subscales included in this checklist are: active problem solving, social support seeking, emotional relieving, and wishful thinking. 'Active problem solving' and 'social support seeking' were classified as 'problem-focused coping' and 'emotional relieving' and 'wishful thinking' were classified as 'emotion-focused coping.' And the mean of subscale scores stands for each stress coping type. Higher scores of certain subscale indicate that the coping type is used more often. Kim (1987) reported internal consistency of the subscales was ranged from .87 to .95. In this study, the internal consistency of the total items was .88 and those of subscales ranged from .75 to .88.

#### 4. Data analysis

Collected data were analyzed with SPSS/WIN 12.0 program. Descriptive statistics were used to describe the study sample. Differences in perceived stress level, total stress symptoms and stress coping type according to the subjects' general characteristics were analyzed with t-test and ANOVA. Post-hoc analysis was done with Scheffe's multiple comparison. Pearson correlation coefficient and multiple regression analysis were used to analyze the influencing variables and impact on the subjects' total stress symptoms.

## RESULTS

### 1. General characteristics of college students

The college students' age ranged from 19 to 29 years with a mean age of 22.3 years ( $SD=1.94$ ). The majority of the students were female ( $n=797$ , or 75.5%) and 54.4% of them having religion, with 45.5% of them had a family's monthly income that was "2 to 4 million won" followed by "below 2 million won" (28.2%) and "over 4 million won" (20.6%). For the questions about drinking frequencies, the college students drinking "1 to 2 times a week" took the greatest portion (47%). While 44.9% of the students reported they don't drink, 7.7% of the students reported they drink "more than 3 times a week." Although most of the students were non-smokers (87.1%), 5% of the students reported smoking more than a half-pack of cigarette a day. When it comes with exercise, "no-exercise" took the majority (54.5%) followed by "1 to 2 times a week" (28.4%) and "more than 3 times a week" (16.4%). Meanwhile most of the students reported "good" regarding their perceived health status ( $n=964$ , or 91.3%) (Table 1).

### 2. Perceived stress, stress symptoms and coping of college students

The college students' perceived stress level was 2.3 ( $SD=0.76$ ) and their mean score of total stress symptoms was 2.14 ( $SD=0.57$ ). Within the subscales of stress symptoms, depression showed the highest score 2.4 ( $SD=0.88$ ). The subscales which showed higher score than the mean score of total stress symptoms as follows; cognitive disorganization ( $M=2.3$ ,  $SD=0.72$ ), emotional irritability ( $M=2.3$ ,  $SD=0.85$ ), peripheral manifestation ( $M=2.2$ ,  $SD=0.72$ ), gastrointestinal symptom ( $M=2.2$ ,  $SD=0.78$ ), cardiopulmonary symptom ( $M=2.2$ ,  $SD=0.82$ ).

In the mean time, there were different characteristics in major stress symptoms by gender. In the male subjects, cognitive disorganization showed the highest score followed by emotional irritability, depression, and peripheral manifestations. In the female subjects, on the other hand, depression showed the highest score followed by cognitive disorganization, emotional irritability.

In terms of stress coping type, the students' emotion-focused coping was 2.4 ( $SD=0.36$ ) and problem-focused coping was 2.4 ( $SD=0.39$ ). According to subscale scores, wishful thinking showed the highest score ( $M=2.5$ ,  $SD=0.46$ ) followed by active problem solving ( $M=2.4$ ,  $SD=0.42$ ), social support seeking ( $M=2.4$ ,  $SD=0.55$ ), and emotional relieving ( $M=2.3$ ,  $SD=0.36$ ). There were

**Table 1.** Description of participants (N=1,056)

Characteristics	Categories	n (%) or M±SD	Range
Gender	Male	259 (24.5)	
	Female	797 (75.5)	
Age (year)		22.3±1.94	19~29
Religion	Have	574 (54.4)	
	Haven't	468 (44.3)	
	No response	14 (1.3)	
Monthly income (10,000 won)	< 200	298 (28.2)	
	200~400	481 (45.5)	
	> 400	218 (20.6)	
	No response	59 (5.6)	
Drinking alcohol (times/week)	None	474 (44.9)	
	1-2	496 (47.0)	
	≥ 3	81 (7.7)	
	No response	5 (0.5)	
Smoking (pack/day)	None	920 (87.1)	
	< 1/2	77 (7.3)	
	≥ 1/2	53 (5.0)	
	No response	6 (0.6)	
Exercise (times/week)	None	576 (54.5)	
	1~2	300 (28.4)	
	≥ 3	173 (16.4)	
	No response	7 (0.7)	
Perceived health status	Good	964 (91.3)	
	Bad	84 (8.0)	
	No response	8 (0.8)	

different characteristics in stress coping type by gender. In the male subjects, active problem solving type showed the highest score and social support seeking type showed the lowest score. In the female subjects, on the other hand, wishful thinking type showed the highest score and emotional relieving type showed the lowest score (Table 2).

### 3. Differences in perceived stress, stress symptoms, and coping by general characteristics

The college students' perceived stress level showed statistically significant differences by their gender ( $t=-3.53$ ,  $p<.001$ ), drinking frequency per week ( $F=4.07$ ,  $p=.017$ ), exercise frequency per week ( $F=3.03$ ,  $p=.049$ ) and perceived health status ( $t=-3.86$ ,  $p<.001$ ). The students drinking "more than 3 times a week" were significantly more stressed than those who reported "no drinking" and "drinking 1 to 2 times a week", but there

were no significant differences among groups divided by exercise frequency on post hoc tests. Also, there were statistically significant differences in the students' total stress symptoms score by their gender ( $t=-5.73$ ,  $p<.001$ ), family's monthly income ( $F=5.84$ ,  $p=.003$ ), exercise frequency per week ( $F=3.99$ ,  $p=.019$ ), and perceived health status ( $t=-7.20$ ,  $p<.001$ ). Based on the post hoc test, we found out the students with "below 2 million won" reported higher stress symptoms than those with "2 to 4 million won". In addition, the fact that the students who didn't exercise and exercised 1 to 2 times a week reported higher stress symptoms than those who exercised more than 3 times a week. Especially the female and the students who reported their perceived health status was bad showed significantly high score in both perceived stress level and total stress symptoms score (Table 3).

The test to determine the differences in stress coping type by the students' general characteristics revealed that the mean scores of the emotion-focused coping were different by drinking frequency per week ( $F=3.58$ ,  $p=.028$ ). Post hoc test, however, identified no statistically significant difference. And the mean scores of problem-focused coping were significantly different by their religion ( $t=2.75$ ,  $p=.006$ ), family's monthly income ( $F=6.88$ ,  $p=.001$ ), and exercise frequency per week ( $F=9.03$ ,  $p<.001$ ). Post hoc test determined that the students with "over 4 million won" family income and who exercised "more than 3 times a week" showed statistically significant higher scores in problem-focused coping than those with less than 4 million won and who didn't exercise respectively (Table 4).

### 4. Relationships among perceived stress, stress symptoms and stress coping

Correlation analysis of the relationships among the college students' perceived stress level, total stress symptoms and stress coping found that there was a strong positive correlation between perceived stress and total stress symptoms ( $r=.51$ ,  $p<.001$ ). The students' perceived stress level showed positive correlation with each stress coping subtype ( $r=.15\sim.31$ ,  $p<.001$ ). The correlation between the perceived stress level and emotion-focused coping (emotion relieving & wishful thinking) was greater than the correlation between that and problem-focused coping (active problem solving & social support seeking). There were also positive correlation between total stress symptoms and each stress coping subtype. The emotional relieving ( $r=.42$ ,  $p<.001$ ) and total stress symptoms has the strongest positive correlation followed

Table 2. Degree of Major Variables

(N=1,056)

Variables		Total	Male (n=259)	Female (n=797)
		M±SD	M±SD	M±SD
Perceived stress		2.3±0.76	2.2±0.78	2.4±0.76
Stress symptom	Total stress symptom	2.1±0.57	2.0±0.55	2.2±0.57
	Peripheral manifestations	2.2±0.72	2.1±0.74	2.3±0.71
	Cardiopulmonary symptom	2.2±0.82	2.0±0.79	2.2±0.82
	Upper airway symptom	1.9±0.69	1.8±0.64	2.0±0.70
	Central-neurological symptom	1.9±0.72	1.6±0.63	1.9±0.73
	Gastrointestinal symptom	2.2±0.78	1.9±0.69	2.3±0.79
	Muscle tension	1.9±0.72	1.7±0.68	2.0±0.73
	Habitual Patterns	2.1±0.63	2.0±0.60	2.2±0.63
	Depression	2.4±0.88	2.1±0.88	2.5±0.86
	Anxiety	2.1±0.71	1.8±0.69	2.1±0.70
	Emotional irritability (Anger)	2.3±0.85	2.2±0.82	2.3±0.85
	Cognitive disorganization	2.3±0.72	2.2±0.72	2.3±0.72
Stress coping	Emotion-focused	2.4±0.36	2.4±0.35	2.4±0.37
	Emotional relieving	2.3±0.36	2.3±0.34	2.3±0.37
	Wishful thinking	2.5±0.46	2.4±0.44	2.6±0.46
	Problem-focused	2.4±0.39	2.4±0.41	2.4±0.39
	Social support seeking	2.4±0.55	2.3±0.56	2.4±0.54
	Active problem solving	2.4±0.42	2.5±0.43	2.4±0.41

Table 3. Differences in Perceived Stress and Stress Symptoms by Characteristics

Variables		Perceived stress			Total stress symptoms		
		M±SD	t or F (p)	Post hoc	M±SD	t or F (p)	Post hoc
Gender	Male	2.2±0.78	-3.53		2.0±0.55	-5.73	
	Female	2.4±0.76	(<.001)		2.2±0.57	(<.001)	
Religion	Have	2.4±0.76	1.16		2.2±0.55	1.21	
	Haven't	2.3±0.77	(.243)		2.1±0.59	(.222)	
Monthly income (10,000 won)	< 200 <sup>a</sup>	2.4±0.82	2.46		2.2±0.57	5.84	a > b
	200~400 <sup>b</sup>	2.3±0.73	(.086)		2.1±0.57	(.003)	
	> 400	2.4±0.78			2.2±0.57		
Drinking alcohol (times/week)	None <sup>a</sup>	2.3±0.75	4.07	a, b < c	2.1±0.58	0.78	
	1~2 <sup>b</sup>	2.3±0.74	(.017)		2.2±0.56	(.455)	
	≥ 3 <sup>c</sup>	2.6±0.95			2.2±0.62		
Smoking (pack/day)	None	2.3±0.73	2.96		2.1±0.56	0.72	
	< 1/2	2.5±0.91	(.052)		2.2±0.66	(.486)	
	≥ 1/2	2.4±1.03			2.2±0.66		
Exercise (times/week)	None <sup>a</sup>	2.4±0.76	3.03		2.2±0.55	3.99	a, b > c
	1~2 <sup>b</sup>	2.3±0.77	(.049)		2.2±0.60	(.019)	
	≥ 3 <sup>c</sup>	2.2±0.76			2.0±0.59		
Perceived health status	Good	2.3±0.76	-3.86		2.1±0.56	-7.20	
	Bad	2.6±0.80	(<.001)		2.6±0.59	(<.001)	

by wishful thinking ( $r=.40$ ,  $p<.001$ ), active problem solving ( $r=.21$ ,  $p<.001$ ), and social support seeking ( $r=.19$ ,  $p<.001$ ) (Table 5).

## 5. Influences of variables on the total stress symptoms

Multiple regression analysis, including the stepwise method was used to examine factors that influence the students' total stress symptoms. Since they were sig-

nificantly related to the total stress symptoms in the prior analysis, perceived stress, four stress coping types (emotional relieving, wishful thinking, social support seeking, and active problem solving) and two general characteristics variables (gender and perceived health status) were included in the analysis model. Gender (1=male, 0=female) and perceived health status (1=good, 0=bad) were used in forms of dummy variables.

The results are presented in Table 6. Perceived stress was the best influencing factor of total stress symptoms ( $\beta$

**Table 4.** Differences in Way of Stress Coping by Characteristics

Variables		Emotion-focused coping			Problem-focused coping		
		M $\pm$ SD	t or F ( <i>p</i> )	Post hoc	M $\pm$ SD	t or F ( <i>p</i> )	Post hoc
Gender	Male	2.4 $\pm$ 0.35	-1.96		2.4 $\pm$ 0.41	0.69	
	Female	2.4 $\pm$ 0.37	(.050)		2.4 $\pm$ 0.39	(.485)	
Religion	Have	2.4 $\pm$ 0.37	0.17		2.4 $\pm$ 0.38	2.75	
	Haven't	2.4 $\pm$ 0.35	(.860)		2.4 $\pm$ 0.40	(.006)	
Monthly income (10,000 won)	< 200 <sup>a</sup>	2.4 $\pm$ 0.35	0.38		2.4 $\pm$ 0.39	6.88	a, b < c
	200~400 <sup>b</sup>	2.4 $\pm$ 0.38	(.681)		2.4 $\pm$ 0.40	(.001)	
	> 400 <sup>c</sup>	2.4 $\pm$ 0.35			2.5 $\pm$ 0.36		
Drinking alcohol (times/week)	None <sup>a</sup>	2.4 $\pm$ 0.36	3.58		2.4 $\pm$ 0.39	1.93	
	1~2 <sup>b</sup>	2.4 $\pm$ 0.35	(.028)		2.4 $\pm$ 0.38	(.145)	
	$\geq 3$ <sup>c</sup>	2.5 $\pm$ 0.42			2.4 $\pm$ 0.42		
Smoking (pack/day)	None	2.4 $\pm$ 0.36	1.35		2.4 $\pm$ 0.39	0.08	
	< 1/2	2.5 $\pm$ 0.42	(.258)		2.4 $\pm$ 0.44	(.920)	
	$\geq 1/2$	2.4 $\pm$ 0.40			2.4 $\pm$ 0.43		
Exercise (times/week)	None <sup>a</sup>	2.4 $\pm$ 0.36	1.35		2.4 $\pm$ 0.38	9.03	a < c
	1~2 <sup>b</sup>	2.4 $\pm$ 0.37	(.258)		2.4 $\pm$ 0.40	(<.001)	
	$\geq 3$ <sup>c</sup>	2.4 $\pm$ 0.35			2.5 $\pm$ 0.39		
Perceived health status	Good	2.4 $\pm$ 0.36	-0.79		2.4 $\pm$ 0.39	0.56	
	Bad	2.4 $\pm$ 0.38	(.427)		2.4 $\pm$ 0.41	(.576)	

**Table 5.** Correlations among Major Variables

Variables	PS	ERC	WTC	SSSC	APSC
	r ( <i>p</i> )	r ( <i>p</i> )	r ( <i>p</i> )	r ( <i>p</i> )	r ( <i>p</i> )
ERC	.31 (<.001)				
WTC	.30 (<.001)	.66 (<.001)			
SSSC	.15 (<.001)	.33 (<.001)	.32 (<.001)		
APSC	.19 (<.001)	.56 (<.001)	.48 (<.001)	.44 (<.001)	
TSS	.51 (<.001)	.42 (<.001)	.40 (<.001)	.19 (<.001)	.21 (<.001)

PS=perceived stress; ERC=emotional relieving coping; WTC=wishful thinking coping; SSSC=social support seeking coping; APSC=active problem solving coping; TSS=total stress symptoms.



**Table 6.** Influencing Factors of Total Stress Symptoms

Variables	B	SE	$\beta$	t (p)
Perceived stress	.285	.020	.38	14.54 (<.001)
Emotional relieving coping	.013	.002	.19	5.79 (<.001)
Perceived health status	.201	.028	.17	7.10 (<.001)
Wishful thinking coping	.016	.003	.15	4.66 (<.001)

Note.  $R^2=.380$ ; adjusted  $R^2=.377$ ;  $F=160.00$  ( $p<.001$ ).

$=.38$ ,  $p<.001$ ), followed by emotion relieving coping ( $\beta=.19$ ,  $p<.001$ ), perceived health status ( $\beta=.17$ ,  $p<.001$ ), and wishful thinking coping ( $\beta=.15$ ,  $p<.001$ ). All influencing factors together explained 37.7% of variance ( $F=160.00$ ,  $p<.001$ ) for the total stress symptoms.

## DISCUSSION

There was limitation to discuss this study with comparing it to the other studies, since there was no preexisting research which estimated college students' stress level with BESPI-K. According the Kim et al. (1998)'s study, which adapted arithmetically Frank and Zyzanski (1988)'s BEPSI score, BEPSI-K score can be categorized into 3 levels: high (over 2.8), moderate (1.8 to 2.6), and low (below 1.6). Based on these BEPSI-K 3 level standards for Korean adults, the students' perceived stress level ( $M=2.3$ ) falls on the moderate level. It was found that 57.7% of the students were in the moderate stress group and 19% of them were in the high stress group. Comparing these results to Kim et al. (1998)'s study, which reported that the perceived stress level of the adults in their twenties was 1.7 and the rate of high stress level was 6.5%, the students' perceived stress level was quite high and the rate of high stress level seems fairly high. These results show the increase of the college students' stress level for last 10 years and support other research (Gong & Lee, 2006; Kim, 2003; Moon & Park, 2007; Murphy, Denis, Ward, & Tartar, 2010) which reported that college students' difficulties in adaptation and interpersonal relationship as well as burden of job seeking and future career due to economic downturn made them experiencing tremendous stress.

The students' total stress symptoms score ( $M=2.1$ ) in this study was slightly higher than that ( $M=2.1$ ) of Han et al. (2007)'s study which used the same instrument. Besides, the female students' total stress symptoms score was significantly higher than that of the male students, which articulated there was gender difference in stress symptoms.

Major stress symptoms were different by gender. In female, depression symptom score was the highest while, in male, the cognitive disorganization. Although the major stress symptoms were different by gender, both male and female college students reported higher stress symptoms in psychological dimension such as depression, cognitive disorganization, and emotional irritability than physical dimension. These results are different from Han et al. (2007)'s results which reported peripheral manifestations, habitual patterns, and cognitive disorganization as college students' common stress symptoms, as well as Han and Kim (2007)'s results identifying emotional irritability, gastrointestinal symptom, and muscle tension as female college students' common stress symptom. In that this study selected research participants from throughout the country, it identified Korean college students' stress symptom in more comprehensive way than other preceding studies which investigated college students in specific regions or department. The results that the female and the students who reported their perceived health status were bad showed significantly high score in both perceived stress and total stress symptom gave us suggestions about differences based on gender and health perception on stress. In addition, the results that the students who exercised more than 3 times a week showed significantly low in total stress symptom and who exercise more frequently showed low in perceived stress level gave us advice to reducing effect of exercise on stress.

Unlikely the perceived stress level and total stress symptoms, the coping types of the students did not show significant difference by their gender. Only having religion, higher economic status and exercise frequency were identified as helpful characteristics to cope with stress in more problem-focused way. There were no significant differences except drinking alcohol frequency in emotion-focused coping. These results are partially consistent with Kim (2003)'s results which reported problem-focused coping was significantly different by religion and exercise frequency. In the study of Folkman &

Lazarus (1980), middle aged men use more problem-focused coping than women at work context, but there were no gender differences in emotion-focused coping. Even though there were limits to determine the stress context and appraisal, it was considered that these results partially reflect the cognitive phenomenological perspective on coping in that the more potent factors are context and how the event is appraised than personal characteristics.

In correlation analysis of the relationship among the predicting factors of the students' total stress symptoms positive correlation was identified between perceived stress level and total stress symptoms, and between perceived stress level and each stress coping type. In addition, perceived stress level and total stress symptoms showed higher correlation with emotion-focused coping than with problem-focused coping. These results were consistent with preceding research which found that college students' perceived stress has positive correlation with depression, anxiety, physical symptoms, and emotion-focused coping (Oh, 2009; Wang & Yeh, 2005) and share opinion with Lazarus and Folkman (1984) in that each stress coping has different focus but is mutually facilitating problem-solving process, the emotion-focused coping may be effective to overcome stress temporarily, however, the fundamental causes of the issue remain steadily without managed, which can aggravate the mal-adaptation.

Perceived stress, emotional relieving and wishful thinking, and perceived health status were identified as influencing factors of college students' total stress symptom. In other words, we can assume that, if a person has high perceived stress level, cope to stress with emotion-focused, and perceive one's health negatively, he or she possibly complain more stress symptom. These results gave same voice with other research such as Lee (2004)'s study and Ni et al. (2010)'s study on the college students' life stress, which reported emotion-focused coping can increase psychiatric symptom, and Gong and Lee (2006)'s study which found that female college students using emotion-focused coping had increased depression.

Limitations of the study are that the study subjects were collected by quota sampling, which means there are limits to the representative and generalization of the findings to all Korean college students. Some demographic and certain health related data were used to identify the influencing factors to the stress symptoms, which means there are limits to the explanation of the regression results. And non-standardized measurements were used,

which means there are limits to the stability of research tools.

## CONCLUSION

Recognition and comprehensive assessment of the perceived stress level, stress symptoms, and ways of coping are required to develop and to apply the stress management. The findings of this study indicated that higher perceived stress level, emotion-focused coping, and negative perceived health status were all associated with higher stress symptoms score. Current findings suggest that nurses should be aware of the common stress symptoms of college students, the differences based on gender, and health perception, and the tendency of emotion-focused coping. Nurses need to have the knowledge assessing the physical and psychological stress symptoms of college students. In particular, nurses could apply the psychological intervention to reduce their major stress symptom: depression, cognitive disorganization, and emotional irritability as counselors. And as educators, nurses could motivate and improve stress management including exercise program and problem-focused coping skill to help college students improve their psychological well-being.

By doing this, the study facilitated the understanding of college students' stress and provided basic data to develop stress management program. More systematic approach and effective stress management program and nursing interventions should be developed for college students' wellbeing. In addition, repetitive and further research should take into consideration the stress context, appraisals to being experienced and the mediating effect of coping.

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