

Factors Influencing Health Promoting Behaviors in College Students in Korea

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Abstract

Objectives: The purpose of our study was to assess health promoting behaviors and identify the influencing factors of health promoting behaviors of college students in Korea. **Methods/Statistical Analysis:** Our cross sectional study was conducted in September 2015. Two hundred and eighty-nine students were selected and evaluated. Multiple linear regression analysis was employed to estimate the effects of influencing factors on health promoting behaviors. **Findings:** Mean score of health promoting behaviors was 3.28(±0.36) on 5-point scale and mean score of professional healthcare was the lowest among sub-categories of healthpromoting behaviors. Factors influencing health promoting behaviors of college students were perceived health status ($\beta=.196$, $p<.001$), self-esteem ($\beta=.204$, $p<.001$), self-efficacy ($\beta=.457$, $p<.001$), and positive body image ($\beta=.200$, $p<.001$). **Improvements/Applications:** In order to increase health promoting behaviors of college students, health education or health skill training for self-efficacy and programs for positive body image and self-esteem are required.

Keywords: Body Image, College Students, Health Promoting Behaviors, Health Status, Self-efficacy, Self-esteem

1. Introduction

An individual's health promoting behavior is comprised of complex and multi-faceted determinants of health-related lifestyle¹. Recently, the publics are paying more and more attention to the importance of their own health as the society is demanding the public to take a responsibility and a voluntary action for healthy lifestyle and health promoting behaviors². Consequently, nurses and other health care professionals play a critical role in helping people in all the life cycle prevent diseases, maintain and improve health by increasing personal control over their health and its determinants.

During the entire period of life cycle, college students who fall into the late adolescence period have relatively lower morbidity and mortality rates than those in other periods³. Staying relatively healthy, young college students

have a characteristic tendency of ignoring the importance of health promoting behaviors, and taking risky and unhealthier behaviors more easily. Due to the remoteness of developing chronic degenerative diseases, college students are not experiencing the immediate outcomes of poor health habits or unhealthy lifestyle. However, if they form unhealthy lifestyle during the late adolescence period, it will affect their health later in the remainder of life⁴.

College students are in a transitional period from childhood into adulthood. As they get out of the control of parents or school, they have to make a large number of decisions necessary for independent life on their own². Among them, decisions on unhealthy lifestyle, such as smoking cigarettes, drinking, or eating unhealthy food, can be made more easily than when there was parental involvement⁵. A study on health-related habits

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with college students reported that college students were less likely to do regular exercises than adults², and more likely to smoke cigarettes and drink than adult groups⁶. In⁷ reported that there was a lack of educational opportunities college students had for fundamental education needed to manage their own health⁷. That is why it is important to provide effective health education when college students stay healthy in order to keep themselves in better condition. In general, college students tend to have poor health related behaviors including irregular meals, meager meals for breakfast, and excessive drinking than middle or high school students⁸. Needless to say, if adolescents once develop health-related lifestyle, it won't change easily⁹. Therefore, it is very important to identify as to what healthy lifestyle college students can develop and maintain, in order to promote their own health and prevent from health-threatening behaviors.

Pender, in her health promotion model, stresses that an individual's health promoting behavior is affected by personal history of prior health-related behavior, demographic variables, and activity-related cognition and affectivity¹. Among interpersonal variables under the category of modifying factors in the model, Pender emphasizes interaction with health care professionals, such as nurses, focusing on the fact that since an individual's perception and feelings are modifiable, they become the major target for intervention given by health care professionals¹. Likewise, if nurses identify influential factors in college students' health promoting behaviors, especially those perceptual and affective factors that can be modifiable, they can deliver nursing intervention successfully to college students who can, in turn, change their health status in a positive way at present and for later life.

A number of studies on college students' health promoting behaviors in Korea have been performed with a variety of demographic, social, and psychological factors related to health promoting behaviors. Factors influencing health promoting behaviors found in those studies include self-efficacy¹⁰⁻¹², social support or social network⁵, life stress¹⁰, health locus of control¹³, self-esteem^{12,14}, personality types¹⁵, perceived health status^{11,16}, perceived barriers¹⁶, gender⁵, and residential types¹⁷. Most of those studies, however, identified the relationships of health promoting behaviors with a single or a few variables. However, health promoting behaviors of individual are not comprised of a single factor, but a complex set of

similar actions in a more complex form¹⁻⁵. Therefore, intervention for health promotion for college students should include a complex set of factors simultaneously in a more integrated approach.

Based on health promotion theories, this study was conducted to identify college students' health promoting behaviors and their influencing factors, for the purpose of providing baseline data for developing health promotion policies and programs in the future. Specific objectives of this study were developed to identify:

- Health promoting behaviors of college students.
- The differences in health promoting behaviors by demographic and situational factors in college students.
- Relationships of health promoting behaviors with cognitive and perceptual factors in college students.
- Influential factors for health promoting behaviors in college students.

Health promoting behaviors are influenced by a diversity of internal factors, such as cognitive and perceptual ones. As one of the most prominent nursing theorists, Pender developed the health promotion model, based on, and expanded from the health belief model to explain not only preventive health behavior but also health promoting behavior¹, which fits into a conceptual framework for this study. In addition, Kim's analytic framework of health promoting behaviors, which was based on Pender's model and previous studies, was combined in the conceptual framework for our study¹⁸. While Pender's health promotion model consists of personal factors, action-specific cognition, and action outcomes as influencing factors on health promoting behaviors, Kim's analytic framework of health promotion consists of a decision making phase and an action phase. The decision-making phase consists of an individual's cognitive and perceptual factors and adjusted factors that influence the individual's cognitive and perceptual factors. The adjusted factors included demographic and situational factors.

This study not only included perceived health status, health locus of control, self-esteem, and self-efficacy that were derived from Pender's and Kim's frameworks as cognitive and perceptual factors, but also added positive physical image to the study^{19,20}. Among adjusted factors, demographic factors included gender, age, college types, and academic major at college while situational factors included residential location and monthly allowance.

The variable of residential types was added to the situational factors after reviewing research findings on a difference between health promoting behaviors and residential types^{5,17}. Whether or not college students have positive image for their physical appearance has a direct relationship with exercise and dietary habits^{19,20}. Likewise, residential types of whether college students were living alone or living with parents appeared to influence health promoting behaviors^{5,17}.

In addition, rest, sleep, and hygienic or sanitary life were added to the subcategories of health promoting behaviors that were delineated by^{18,21}. The conceptual framework for our study is shown in Figure 1.

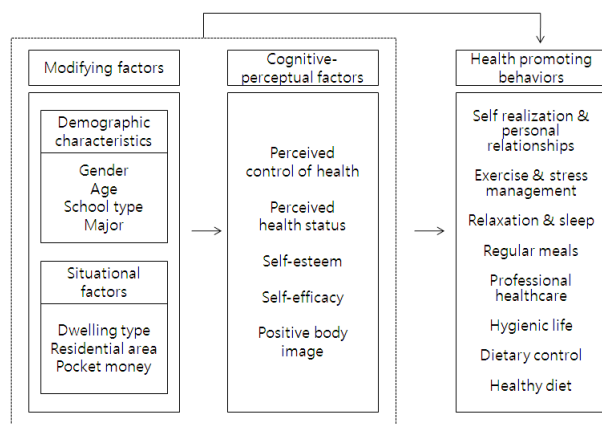


Figure 1. Conceptual framework of this study.

2. Proposed Work

2.1 Study Design

This study is a descriptive survey with college students on health promoting behaviors and their influential factors.

2.2 Study Subjects and Data Collection

This study has an online survey design. After the researcher searched for various online community sites and social network services that were mostly accessed by college students, the purpose of this study as well as confidentiality principles were provided. Those who agreed to provide their own information for this study were allowed to access the survey site. The total of 300 college students participated in the survey, excluding 8 students who did not have clear residential types nor complete the online questionnaires, 292 respondents in total were collected for final analysis. The data were collected from September 7 through 22, 2015.

2.3 Study Instruments

This study collected data via online with 292 college students who responded to self-reported questionnaires which included both situational and demographic factors, such as health promoting behaviors, perceived health status, health locus of control, self-esteem, self-efficacy, residential area, residential types, and monthly allowance.

Health promoting behaviors were measured by the subcategories of the Health Promotion Life Profile (HPLP), developed by²¹ and the revised form of a health promoting behavior tool that was modified by Kim to fit into Koreans^{18,21}. The 32-item health promoting behavior tool includes subcategories of self-actualization and interpersonal relationships, exercise and stress management, rest and sleep, regular meals, professional health care management, hygienic life, dietary control, and healthy diet, which is on a 5-point Likert-type scale with one being 'never being' and 5 being 'very much like.' Item 9 contains a negatively worded question of which the score was converted. Cronbach's α of the initial study was .77 while Cronbach's α for this study was .78.

Four cognitive and perceptual factors, including perceived health status, health locus of control, self-esteem, and self-efficacy, were derived from the tool developed by Kim(2000), each of four factors has three items, 12 items in total¹⁸. The tool for cognitive and perceptual factors has a 5-point Likert-type scale with one being 'never being' and 5 being 'very much like.' The score of item 3 that contains a negative question was converted. Cronbach's α of the initial tool for health locus of control was .82, perceived health status was .82, self-esteem was .81, and self-efficacy was .81. On the other hand, Cronbach's α of the tool for health locus of control for this study was .71, perceived health status was .65, self-esteem was .59, and self-efficacy was .54.

Among cognitive and perceptual factors, positive physical image was measured by the Body Appreciation Scale developed by Avalos, Tylka and Wood-Barcalow¹⁷. The Body Appreciation Scale is comprised of 13 items on a 5-point Likert-type scale with one being 'never being' and 5 being 'very much like,' showing the higher the score, the more the positive physical image. The Body Appreciation Scale was used for this study after permission was gained from the developers through emails. The original tool had a very high reliability and validity²² while Cronbach's α of this study also showed a very high reliability of .92.

Finally, respondents' demographic factors included

gender, age, college type, and academic major while situational factors included residential types, residential areas, and monthly allowance.

3. Data Analysis

Data collected were analyzed by SPSS win 22.0 Program. Respondents' demographic characteristics, health promoting behaviors, perceived health status, health locus of control, self-esteem, self-efficacy, and positive physical image were analyzed by the descriptive statistics with frequencies, percentage, means and standard deviations while health promoting behaviors by adjusted factors were analyzed by independent t-test and one-way ANOVA. Correlations of health promoting behaviors with cognitive and adjusted factors were analyzed by Pearson's correlation analysis while multiple linear regression analysis was employed to estimate the effects of cognitive, perceptual and adjusted factors on health promoting behaviors.

4. Results

4.1 Demographic Characteristics

Table 1, among 292 respondents, female college students were 202(69.2%) while male students were 90(30.8%), with the age of 21 being the most(86 respondents, or 29.8%) and the mean age of 20.74(± 1.53). The most common type of college was a university(267 students or 91.4%), and the most frequently responded area of studies was health and allied major(90 students or 30.8%), followed by natural science and engineering(82 or 28.1%), humanities and social science(68 or 23.3%), and art, music and physical education(52 or 17.8%). Most of the respondents were living in a city(258 respondents or 88.4%), and residential types showed that living with parents was estimated at 171 respondents(58.6%) while 62 respondents were living alone(21.2%) and 59 respondents living in a dormitory(20.2%). As many as 210 respondents or 72.7% of the total respondents spent less than 400,000 Korean won per month with the average monthly allowance of 419,800($\pm 264,900$) Korean won.

4.2 Cognitive and Perceptual Factors and Health Promoting Behaviors

The sum total and means of respondents' cognitive and

perceptual factors and health promoting behaviors are shown in Table 2. The highest mean of the respondents' cognitive and perceptual factors was health locus of control which is estimated at 3.55(± 0.55), followed by positive physical image(3.44 ± 0.71), self-esteem was 3.41 ± 0.47 , self-efficacy, 3.33 ± 0.72 , and perceived health status, 2.93 ± 0.57 , in order.

The mean of health promoting behaviors was 3.28(± 0.36). Among subcategories of health promoting behaviors, two highest mean scores were self-actualization and interpersonal relationships(3.72 ± 0.58) and hygienic life(3.72 ± 0.50), followed by rest and sleep(3.65 ± 0.65), regular meal taking(3.18 ± 0.59), dietary control(3.18 ± 0.50), healthy diet(3.14 ± 0.57), and exercise and stress management(3.11 ± 0.79), respectively, while professional health management showed the lowest mean score(2.45 ± 0.60). Of all the factors, the lowest mean scores fell into the professional health management area, including regular blood pressure check-ups(1.9 ± 0.88), regular physical check-ups(2.15 ± 0.92), and professional counseling for health problems(2.22 ± 0.97).

Table 1. Modifying factors and health promoting behaviors of respondents(N=292)

Variables	M \pm SD		Range
	Standard mean	Total score	
Cognitive-perceptual factors			
Perceived health locus of control	3.55 ± 0.55	10.65 ± 1.64	6~15
Perceived health status	2.93 ± 0.57	8.80 ± 1.72	5~15
Self-esteem	3.41 ± 0.47	10.23 ± 1.42	4~15
Self-efficacy	3.33 ± 0.72	10.00 ± 2.16	4~15
Positive body image	3.44 ± 0.71	44.73 ± 9.27	15~65
Health promoting behavior	3.28 ± 0.36	105.06 ± 11.56	82~142
Self-actualization & interpersonal relationships	3.72 ± 0.58	18.59 ± 2.92	10~25
Exercise & stress management	3.11 ± 0.79	15.53 ± 3.94	6~25
Rest & sleep	3.65 ± 0.65	14.60 ± 2.58	8~20
Regular meals	3.18 ± 0.59	9.55 ± 1.76	5~15
Professional health care management	2.45 ± 0.60	9.80 ± 2.38	4~18
Hygienic life	3.72 ± 0.50	14.87 ± 1.99	4~20
Dietary control	3.18 ± 0.50	12.70 ± 2.01	7~19
Healthy diet	3.14 ± 0.57	9.42 ± 1.70	3~15

Table 2. Comparison of health promoting behaviors by demographic characteristics

Characteristics	Categories	N	%	Health promotion behavior		
				M±SD	t/F	p
Gender	M	87	30.1	3.44±0.38	5.139	<.001
	F	202	69.9	3.32±0.33		
Age (yr)	≤20	127	43.9	3.27±0.33	-0.354	.723
	≥21	162	56.1	3.28±0.38		
School type	College	25	8.7	3.25±0.41	-0.459	.647
	University	264	91.3	3.29±0.36		
Major	Humanities, social science	67	23.2	3.27±0.36	1.576	.195
	Natural science, engineering	81	28.0	3.35±0.37		
	Health science	90	31.2	3.23±0.36		
	Art, music, physical education	51	17.6	3.29±0.34		
Residential type	Live with parents	169	58.5	3.28±0.36	0.227	.797
	Live alone	61	21.1	3.26±0.39		
	Live in dormitory	59	20.4	3.30±0.34		
Residential area	Urban	257	88.9	3.29±0.36	1.262	.208
	Rural	32	11.1	3.21±0.33		
Monthly allowance (10,000won/m)	≤40	210	72.7	3.26±0.34	-1.969	.050
	>40	79	27.3	3.35±0.41		

Table 3. Pearson's correlation coefficients between cognitive-perceptual factors and health promoting behaviors

	Perceived health locus of control	Perceived health status	Self-esteem	Self-efficacy	Positive body image
Health promoting behavior	.272 (<.001)	.445 (<.001)	.459 (<.001)	.694 (<.001)	.610 (<.001)
Self-actualization & interpersonal relationships	.257 (<.001)	.264 (<.001)	.449 (<.001)	.521 (<.001)	.684 (<.001)
Exercise & stress management	.269 (<.001)	.347 (<.001)	.269 (<.001)	.632 (<.001)	.506 (<.001)
Rest & sleep	.208 (<.001)	.163 (<.001)	.360 (<.001)	.381 (<.001)	.370 (<.001)
Regular meals	.085 (.150)	.157 (.006)	.253 (<.001)	.396 (<.001)	.294 (<.001)
Professional healthcare	.074 (.212)	.372 (<.001)	.235 (<.001)	.325 (<.001)	.206 (<.001)
Hygienic life	.079 (.181)	.202 (.001)	.167 (.004)	.317 (<.001)	.197 (.001)
Dietary control	.044 (.456)	.309 (<.001)	.137 (.020)	.224 (<.001)	.136 (.020)
Healthy diet	.183 (.002)	.235 (<.001)	.232 (<.001)	.281 (<.001)	.255 (<.001)

4.3 Differences in Health Promoting Behaviors by Demographic and Situational Factors

Differences in health promoting behaviors by respondents' demographic and situational factors are shown in Table 2. Among demographic factors, there was a statistically significant difference between gender and health promoting behaviors ($t=5.139$, $p<.001$), with the score on health promoting behaviors in male students being higher than that of female students. No other demographic factors showed significant differences in health promoting behaviors.

4.4 Relationships of Health Promoting Behaviors with Cognitive and Perceptual Factors

Table 3 shows the correlations of health promoting behaviors with cognitive and perceptual factors. Respondents' health promoting behaviors showed positive correlations with health locus of control ($r=.272$, $p<.001$), perceived health status ($r=.445$, $p<.001$), self-esteem ($r=.459$, $p<.001$), self-efficacy ($r=.694$, $p<.001$), and positive physical image ($r=.610$, $p<.001$). There were significant correlations of the subcategories of health promoting behaviors, including self-actualization and interpersonal relationships, exercise and stress management, rest and sleep, and healthy diet, with cognitive and perceptual factors, including perceived health status, health locus of control, self-esteem, self-efficacy, and positive physical image. On the other hand, there were no significant correlations of health locus of control with regular meal taking ($r=.085$, $p=.150$), professional health care management ($r=.074$, $p=.212$), hygienic life ($r=.079$, $p=.181$), and dietary control ($r=.044$, $p=.456$), while there were significant correlations of health locus of control with perceived health status, self-esteem, self-efficacy, and positive physical image.

4.5 Factors Influencing Health Promoting Behaviors

Table 4 shows the result of multiple linear regression analysis in order to identify how many and how much the predictor variables explain the criterion variable, that is, health promoting behaviors in college students. Categorical data in the demographic and situational variables were converted into dummy variables and

included in the independent variables, along with cognitive and perceptual variables.

In order to test multicollinearity among explanatory variables in the multiple regression models for this study, the variance inflation factor, Durbin-Watson test for autocorrelations of the residual, and tolerance limits were calculated. As a result, the variance inflation factors were estimated between 1.10 and 1.81, which were lower than the criterion value of 10, the tolerance limits among predictive variables were estimated between 0.55 and 0.91, which was over 0.1 of the criterion value, and the value of the Durbin-Watson test for autocorrelations among residuals was 1.97, satisfying the values between 1.4 and 2.5, all of which indicated that there was neither multicollinearity nor high autocorrelations among one or more predictor variables. In addition, error terms satisfied a normal distribution, and the F-test of the overall fit showed statistical significance ($F=32.086$, $p<.001$). As a result, the goodness of fit of the regression model was confirmed.

Table 4. Predictors of health promoting behavior

Variables	β	t	p
(Constant)		7.275	<.001
Gender (female)	.040	0.924	.357
Age	-.053	-1.328	.185
School type (university)	<.001	0.003	.998
Major (natural, engineering science)	.037	0.760	.448
Major (health science)	-.079	-1.622	.106
Major (physical, artistic science)	.037	0.772	.441
Residential type (alone)	-.016	-0.414	.679
Residential type (dormitory)	-.017	-0.420	.675
Residential area	-.018	-0.467	.641
Monthly allowance (>400,000 won)	.029	0.766	.444
Perceived health locus of control	.049	1.264	.207
Perceived health status	.196	4.930	<.001
Self-esteem	.204	4.832	<.001
Self-efficacy	.457	9.735	<.001
Positive body image	.200	4.093	<.001
F(p)		32.086(<.001)	
Adj R ²		.618	
Tolerance		.55-.91	
VIF		1.10-1.81	
Durbin-Watson		1.97	

The result of multiple linear regression analysis showed that, among independent variables, 4 variables

of perceived health status($\beta=.196$, $p<.001$), self-esteem($\beta=.204$, $p<.001$), self-efficacy($\beta=.457$, $p<.001$), and positive physical image($\beta=.200$, $p<.001$) appeared to be statistically significant factors influencing health promoting behaviors, and the coefficient of determination(R^2) of 62%, or 62% of the total variation of health promoting behaviors was explained by those four independent variables.

5. Conclusion

This study was conducted to identify the level of health promoting behaviors and their influential factors in Korean college students, for the purpose of providing baseline data to develop health promotion programs and policies. Of the total score of 5, the mean score of health promoting behaviors in college students was $3.28(\pm 0.36)$, indicating a little higher than the mid-point of three. Moon et al who used²¹ Health Promotion Life Profile(HPLP)-II in their study, a similar tool to that used in this study, but on a 4-point Likert scale, reported $2.35(\pm 0.42)$ as the mean score of health promoting behaviors in college students. When the mean score(3.28 ± 0.36) of this study is converted to the 4-point scale, it is estimated at 2.62, which is higher than $2.35(\pm 0.42)$ in study²³. On the other hand, when comparing to a study done by Kim who used the same scale that was used in this study, this study result showed a lower score than that in¹⁸ study(3.77 ± 0.27) for health promoting behaviors¹⁸. In particular, the mean scores of the subcategories of health promoting behaviors including exercise and stress management, dietary control, and healthy diet in this study showed lower scores than Kim's, which were $3.11(\pm 0.79)$, $3.18(\pm 0.50)$, $3.14(\pm 0.57)$, respectively. In addition, professional health care management is the area of the lowest mean score(2.45 ± 0.60) in this study, comparing to score of $3.69(\pm 0.49)$ ¹⁸. These results suggest that professionally managed health care should be regarded as a key area in educational programs that provide professional health counseling and regular physical check-ups for college students.

A number of studies have reported that various demographic and situational factors influence health promoting behaviors. For example, this study revealed that gender was the only one factor in demographic variables influencing health promoting behaviors. However, Kim et al. (2008)'s study showed that gender($t=2.227$,

$p<.05$), academic major($F=3.464$, $p<.01$), and residential types($F=4.886$, $p<.01$) were found to be influential in health promoting behaviors⁵, while²⁴ study showed that age($F=7.56$, $p<.001$) and religion($F=15.09$, $p<.001$) affected health promoting behaviors while gender did not²⁴. The differences in study findings may be explained in a way of how each study treated the sub-categorical variables. For example, this study identified the effect of the total scores of subcategories on health promoting behaviors while other studies treated sub-categorical variables separately in analysis. For example,^{25,26} study reported that diet was affected by gender or residential types^{25,26}, but not by physical activities²⁷ while, using the total sum of subcategories of health promoting behaviors, this study could not differentiate the extent to which each separated variable affected health promoting behaviors. Therefore, further studies should be carried out to identify which demographic and situational factors play the most influential role in explaining health promoting behaviors.

This study reveals the similar result of the effects of health status, self-esteem, self-efficacy, and positive physical image on health promoting behaviors to previous studies that have reported the correlations between health promoting behaviors and factors of social and psychological characteristics, including self-efficacy^{5,10-12,28}, self-esteem^{12,14,29}, perceived health status^{11,16}, and positive physical image³⁰. Pender emphasizes that although people's prior experience and demographic variables directly influence their cognition and perception of health, they are difficult to change or intervene¹. However, according to Pender, indirect variables, such as perceived benefits, perceived barriers, perceived self-efficacy, interpersonal influence, situational influence, and affectivity or feelings associated with cognition and actions, are the ones that can be changeable and therefore, should be the target for intervention¹. This study also found that although the majority of the demographic and situational factors did not affect health promoting behaviors, various cognitive and perceptual factors affected health promoting behaviors. In accordance with these findings, health promotion policies and programs tailored for college students should include affective, cognitive, and perceptual factors that cause a proper action for improving health promoting behaviors and better life.

Of all the cognitive and perceptual factors, the improvement in self-efficacy is of importance in health

education and health promotion training for college students. Moon et al reported a significant relationship between college students' health promoting behaviors and information seeking behaviors because acquiring sufficient knowledge of health information through information seeking behaviors may lead to an increase in the students' belief in their own ability to perform health care activities, that is, self-efficacy for health promoting behaviors²³. Likewise, it is very important to provide college students with health training programs that offer them with accurate information on health and help them improve self-efficacy for their own health care management. Utilizing a variety of mass media as well as existing health care professionals who are working on campus may be useful human resources to meet the purpose of health education.

Finally, the inclusion of self-esteem and positive physical image in health education to improve health promoting behaviors is worthy of consideration. Every effort should be made to have college students evaluate their physical image as positively as possible. According to Davis and Cowles's study on body image and exercise, young people's satisfaction with their physical body affected health promoting behaviors while older people's did not³⁰, which suggests that educational strategies to improve college students' subjective perception of their own body image should be included in educational programs. In all, when providing educational programs for college students to improve health promoting behaviors, more effective educational strategies should be included to improve self-esteem about who they are, personal satisfaction with their own body image, and self-efficacy, or college students' ability to persist with tasks of promoting their own health such as weight control and healthy diet. In addition, it is important to help young college students try not to imitate the feminine beauty ideals or masculine ideals shown in the mass media because these ideals are not realistic but created and manipulated mainly by advertisement business. Carefully organized health counseling programs will play a critical role in helping college students develop more positive body image and take a more responsibility for managing their own health, in order to strengthen their sense of self-efficacy, rather than blindly imitating the ideals shown in the mass media.

Our study had several limitations: First of all, this study did not include some other underlying determinants for health promoting behaviors, such as interpersonal

relationships, physical, and institutional environment, which are delineated in Pender's health promotion model. Further research should be focused not only on personal factors but also on interpersonal and ecological factors to have better insight into how late adolescents build up their beliefs, attitudes, and behaviors to promote health behavior.

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