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Health Promotion and Health Service/Program Use on an Urban Campus in the U.S.

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The purpose of the present study was to find the main predictors for the utilization of campus health-related services in order to figure out the help-seeking process of urban graduate students seeking a healthy life. Of 2,400 students, 536 were randomly selected (response rate: 22%) and recruited. Selected students responded to an online survey for September and October in 2011. In order to figure out the main predictors and their effects, five sets of binary hierarchical logistic regression analyses were conducted among students who used the campus services and other students who did not use them. Generally, system adjustments and social activities were closely associated with the utilization of campus health-related services. In specific service use, all had different predictor patterns. The student health service was more associated with awareness of service and system adjustments such as attendance status and semester. The counseling center was more related to age, race, physical accessibility and system adjustments, and emotional need. Minority group and physical health status were important predictors of the wellness hub use. A relaxation room was related to physical accessibility and social activities. This study suggests that the Andersen Behavioral Model can be applicable in informal campus health-related service use. Various services are needed with different approaches to encourage students in need to use services.

Keywords: Health Promotion, Health Service Use, Urban Campus, Andersen Behavioral Model

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Ⅰ. Introduction

University administrators typically try to develop their institutions to best serve their students. One such action is providing student health services to promote student well-being and academic success. Student health can be an important outcome of quality of life and can be an essential factor in academic achievement. However, student health is often neglected at many campuses by not adapting to changing health services' models, to students' own needs or needing to merge their services with larger managed care systems regardless of the quality of services (Grace, 1997; Stewart-Brown et al., 2000). Undergraduate students in colleges are considered a healthy group that delays appropriate treatment for minor diseases; undergraduate students are at risk for developing acute and chronic medical problems, health-risk behaviors like eating disorders. and alcohol and drug abuse. Moreover, mental health services are of greater importance to graduate students in the last formal educational places than to college students because of greater familial and financial responsibilities and less formal learning environments (Austin, 2002; Hyun, Quinn, Madon & Lustig, 2006). Graduate students are often put at high risk for physical and psychological health problems during competitive and rigorous training environments (Hyun et al., 2006; Nelson, Dell'oliver, Koch & Buckler, 2001). Therefore, university health professionals might pay more attention to mental disorders, increased violence rates, and sexual assault.

Urban campuses need to cooperate with their communities and respond more sensitively to students (Mundt, 1996; Warren, 2005) because various social problems like educational inequality, poverty, heavy traffic, and victimization caused by crime surround the campus. Kinnick & Ricks (1990), through investigating 31 urban public universities, stated that urban public universities had a greater number of women, older students, part-time and commuter students, and ethnic minorities than non-urban universities. Educational environments of urban campuses have been changing according to demographic and social changes. However, previous studies

on health promotion and health service use on urban campuses are rare. Thus, the results of this study provide useful and practical evidence to understand help-seeking patterns and attitudes of students on urban campuses.

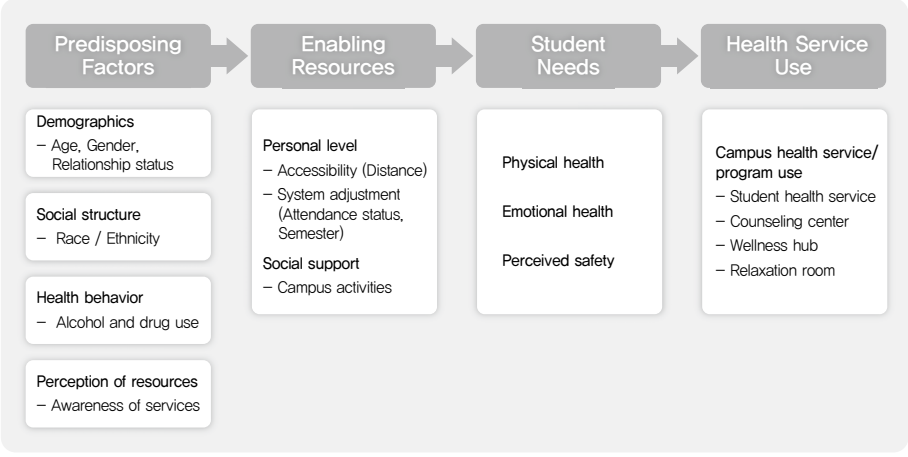
Stressful situations lead students to help-seeking behavior to reduce the amount of stress. Universities for decades have been providing on-campus resources to assist their students with educational, vocational, and student personal problems (Neal & Heppner, 1986; Roberts & Styron, 2010) and try to increase the access to health services in terms of the stress-distress relationship (Eisenberg, Golberstein & Gollust, 2007; Nelson et al., 2001). Most student coping behaviors are to use campus healthcare resources or more formal private medical services. Some may receive social support to alleviate stress. Various barriers may prevent students from health service or program use unlike the similarly-aged general population of a similar age because different situations influence each group. For example, demand-side barriers like financial constraints or lack of time related to increased numbers of part-time work or scholastic burdens like coursework and thesis/dissertation work are important barriers; in addition, there are supply-side barriers including lack of marketing resources or poor accessibility of health services (Komiya, Good & Sherrod, 2000).

It is to be expected that groups living in different environments have different healthcare needs. For instance, there are differences between students of urban and rural campuses or large and mid-size campuses. Albizu-Garcia & colleagues (2001) reported that women had more need for mental healthcare services than men. Asian students might often seek counseling services when they experience serious physical symptoms with emotional stress (Lippincott, 1995). In addition to healthcare needs, various reasons or barriers including the knowledge and awareness of health services influence whether or not students use campus healthcare services (Yorgason, Linville & Zitzman, 2008).

In this study, the recent model developed by Andersen Behavioral Model (ABM) (1995) that has been rarely used in campus fields was employed to explain student needs and use of student health related services. Specifically, the effects of population

characteristics (i.e., predisposing, enabling, and need) on health service/program utilization on an urban campus that has received the most support in the literature were assessed (Hochhausen, Le, & Perry, 2011) (see Figure 1). Aday and Andersen (1974) included the predisposing factors described as the propensity of individuals (e.g., age, gender, and race), the enabling factors described as the means available (e.g., income and region), and the needs referred to illness level (e.g., perceived and evaluated health condition), which is the most immediate reason of the health service use. The purpose of the present study is to find the main predictors for the utilization of campus health-related services or programs in order to figure out the help-seeking process of urban students seeking a healthy lifestyle. This study developed the following three aims: (a) to identify predictors of an overall campus health-related service use, (b) to identify certain predictors influencing utilization of each service provided (i.e. student health service, counseling center, wellness hub, and relaxation room), and (c) to examine the effects of predisposing, enabling, and need factors for the campus health-related service use in an urban school.

Figure 1. A Conceptual Model for Campus Health Service Use



Ⅱ. Methods

1. Sample and Recruitment

The data used in this study was from the staggered waves of cross-sectional surveys of degree-seeking students[1] at the University of Maryland Baltimore (UMB), which is an urban campus located in West Baltimore near the Inner Harbor with access to strong public transportation. A total of 2,400 students were randomly selected out of approximately 6,000 students at UMB. Using the Campus and Health Safety Survey (CHASS) website, 536 students of 2,400 randomly selected students (response rate: 22%) were recruited. After screening three criteria (more than 19 years old, currently enrolled, and degree-seeking students) and excluding missing data, a total of 429 students were maintained for the analyses (80% of the initial respondents). The CHASS project using the web-based survey of the Qualtrics system was conducted for September and October in 2011. During this period of time, three subsequent emails were sent out to encourage students to respond to the survey; an introductory email and a combination of thank you and reminder emails. The survey thoroughly kept confidentiality and was approved by Institutional Review Board (IRB) of UMB.

The average age of the sample is 28.4, and 86% of them were full time while 70% of them were returning students. The proportion of female students was 77.4%; white students were 67.1%; students who were not living in Baltimore City were 40.6%; students who got married or domestic partnership were 27.0%.

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[1] As of the fall 2011 semester, there were a total of 6,395 students enrolled in UMB. UMB students enrolled consisted of 4,540 (71%) were female and 1,855 (29%) were male; 3,731 (58%) were white and 905 (15%) were black, 899 (14%) were Asian, and 860 (13%) were reported as other. There were 5,028 (79%) full-time students and 1,367 (21%) part-time students. There were 4,742 (74%) students who were resident of the State of Maryland while 1,653 (26%) were non-residents. There were 6,228 (97%) degree-seeking students while 163 (3%) were non-degree students.

2. Study Measures

Utilization of campus health services/programs. UMB provides several services related to student health, chiefly student health service[2], counseling center[3], wellness hub[4], and relaxation room[5]. In order to investigate the experience of service use, students were asked a dichotomous question for these five services currently provided by UMB.

Predisposing factors. According to ABM (1995), predisposing factors included demographic characteristics such as age, gender, and relationship status with four categories. In addition, alcohol use was presented frequency of five point Likert scale: 0 = never to 4 = daily or almost daily. Drug use was presented the manner of ever use of six drugs after the graduate school: 0 = 0 time to 5 = more than 40 times. Five racial groups were recoded: 1 = white, 2 = African-American, 3 = Hispanic, 4 = Asian, and 5 = other. The awareness and knowledge for each service were asked as an important factor in predisposing factors to affect the utilization of services.

Enabling factors. Physical accessibility was expected to be one of the important enabling factors in personal level, so it was created according to the distance from campus. For the analysis, responses on this variable were categorized into four: 0 = *dormitory or other campus housing*, 1 = *off campus but within walking distance of campus*, 2 = *in Baltimore City within driving distance of campus*, and 3 = *not in Baltimore City*. System adjustments presented whether or not students were in part-time and in first semester were classified in enabling factors. In order to examine social support in campus level, this study asked students if they had experience of participating in any of the eight campus social activities: an academic organization; student

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2) *Student health service* is the most well-known program that provides thirteen free and basic medical services including several examinations and screenings from the student health office.

3) *Counseling center* is the place providing counseling services by a caring, multiculturally diverse staff of licensed social workers and a psychologist.

4) *Wellness hub* provides online self-assessment and coaching services, and a number of events in eight dimensions such as physical, emotional, social, cultural, ethnical, intellectual, environmental, and financial wellness.

5) *Relaxation room* is the space on the 3rd floor of the campus center that students can take a rest, read, or meditate on comfortable chairs.

government; a sports team; a Greek organization (e.g., fraternity and sorority); a visual arts group, a performing arts group, or a music group; a debate team; a volunteer group, or a religious group.

Student needs. In this study, self-rated students' physical and emotional health conditions were used as student needs closely related to the health related service use. Each health status was composed with five point Likert scale: 0 = *poor* to 4 = *excellent*. Also, perceived safety on and around campus was used to analyze as one of the student needs and was measured four point Likert scale: 0 = *very unsafe* to 3 = *very safe*.

3. Data Analysis

Previous studies and the conceptual model guided the analyses. This study mainly conducted logistic regression analyses for the utilization of the campus health services/programs based on the ABM (1995) using PASW/SPSS v. 21 (2012). First, in order to know the demographic information of two sub-samples(not using campus health services/programs vs. using campus health services/programs), descriptive analysis, chi-square, and t-test were used. Second, the study examined factors and their effect for overall campus health service/program use through a hierarchical logistic regression analysis. Additionally, the study conducted four hierarchical logistic regression analyses for campus services/programs: (a) student health service, (b) counseling center, (c) wellness hub, and (d) relaxation room with the same ways as the overall service use. For these binary hierarchical analyses, we put sub-categorical factors based on the theoretical background in each block in order: 1) demographic information, alcohol and drug use, students' race, and awareness of services/programs in predisposing factors, 2) distance from campus, attendance status, semester, and participation of campus activities in enabling resources, 3) self-rated physical and emotional health and perceived safety in student needs. The extent of goodness of model fit between blocks was checked.

In terms of dealing with missing data, this study used 429 cases with mostly complete data that removed 107 cases from 536 initial samples. Minimal missing data (< 1%) were handled using the listwise deletion method advantaged in terms of missing completely at random (MCAR) and large data set (Schlomer, Bauman, & Card, 2010). According to the results of post hoc tests of power analyses, binary logistic regression analyses have enough sample size of 429 to examine; the power of logistic regression was approximately close to 100%, when medium effect size, two tails, .05 of Alpha value, 18 of predictors.

Ⅲ. Results

1. Sample Characteristics and Descriptive Information

Table 1 provides demographic characteristics of the study sample. Chi-square analyses and independent t-tests were conducted to look at the group differences for demographic information between Group 1 (not using campus health services/programs) and Group 2 (using campus health services/programs). Between the two groups, the average age, gender and relationship status were not statistically different. However, student's race and living status were distinct for each group. Group 1 had significantly larger number of African American students and smaller number of "other" racial students (i.e. multi ethnicities, native Hawaiian or other Pacific Islander, American Indian or Alaska Native, and so on) than Group 2. Also, Group 2 that had experience using more than one campus resource had more students residing in 'off campus but walking distance' and 'Baltimore City.' The awareness of all campus health services/programs was significant for each group difference. Especially, in the group that never used the services/programs, relatively more students did not know about what student health services, counseling center, wellness hub, and relaxation room were.

Table 1. Descriptive Characteristics of Study Sample and Variables

(N=429)

	All (N=429)	Group 1: Not Using Health Services (n=204)	Group 2: Using Health Services (n=225)	p-value
Age, y	28.38 (SD = 7.90)	29.04 (SD = 8.92)	27.79 (SD = 6.81)	.101
Gender				.625
Male	96 (22.4%)	45 (46.9%)	51 (53.1%)	
Female	332 (77.4%)	159 (47.9%)	173 (52.1%)	
Race				.021
White	288 (67.1%)	141 (49.0%)	147 (51.0%)	
African-American	35 (8.2%)	22 (62.9%)	13 (37.1%)	
Hispanic	14 (3.3%)	6 (42.9%)	8 (57.1%)	
Asian	47 (11.0%)	23 (48.9%)	24 (51.1%)	
Other	45 (10.5%)	12 (26.7%)	33 (73.3%)	
Living status				.009
Dormitory / campus housing	25 (5.8%)	13 (52.0%)	12 (48.0%)	
Off campus but walking distance	151 (35.2%)	60 (39.7%)	91 (60.3%)	
Baltimore City	79 (18.4%)	32 (40.5%)	47 (59.5%)	
Not in Baltimore City	174 (40.6%)	99 (56.9%)	75 (43.1%)	
Relationship status				.798
Married or domestic partnership	116 (27.0%)	59 (50.9%)	57 (49.1%)	
In a serious relationship	138 (32.2%)	63 (45.7%)	75 (54.3%)	
Single	132 (30.8%)	63 (47.7%)	69 (52.3%)	
Other	43 (10.1%)	19 (44.2%)	24 (55.8%)	
Awareness of services				
Student Health Services				
No	31 (7.2%)	26 (83.9%)	5 (16.1%)	p < .001
Yes	398 (92.8%)	178 (44.7%)	220 (55.3%)	
Counseling Center				
No	86 (20.0%)	52 (60.5%)	34 (39.5%)	.007
Yes	343 (80.0%)	152 (44.3%)	191 (55.7%)	
Wellness Hub				
No	89 (20.7%)	57 (64.0%)	32 (36.0%)	p < .001
Yes	340 (79.3%)	147 (43.2%)	193 (56.8%)	
Relaxation Room				
No	136 (31.7%)	95 (69.9%)	41 (30.1%)	p < .001
Yes	293 (68.3%)	109 (37.2%)	184 (62.8%)	
Total awareness1				
Yes	417 (97.2%)	193 (46.3%)	224 (53.7%)	.002
No	12 (2.8%)	11 (91.7%)	1 (8.3%)	

Note 1. Total awareness indicates whether or not respondents know any of campus health services/programs.

2. Predictors of Overall Campus Health Service/Program Use

A binomial hierarchical logistic regression analysis was conducted to identify predictors of an overall campus health service/program use of urban university students. Based on the conceptual model, variables were put in each block, and the contribution of each block in the prediction of campus health service/program use was assessed by the change in the -2 log likelihood (-2LL), a statistic that is approximately distributed as a chi-square (Kahn & Nauta, 2001). Results of the analysis regarding the model fit are summarized in Table 2. In the first block, when the 7 predisposed factors were put to the model, the model was significantly better within .05 of p-value. After the second block, the difference of -2LL value was significantly decreased; that means the enabling 4 factors caused the model to better predict. However, in the last block, the three factors of student needs did not result in a significantly better predictive model.

Table 2. Logistic Regression Predicting of Overall Health Service Use

(N=429)

Block	Model Total		Difference from Previous Block	
	-2LL	*df*	-2LL	*df*
0. Intercept	577.85	0		
1. Predisposing Factors	551.99	13	25.86*	13
2. Enabling Resources	481.31	19	70.69***	6
3. Student Needs	478.23	22	3.07	3

Notes. N = 429. * $p < .05$; ** $p < .01$; *** $p < .001$.

Specifically, more predictive variables in each block were investigated. A part of the race factor in predisposing factors and system adjustment (attendance status and semester) and social activities in enabling resources made a difference in if students use any of the four campus health services/programs. When compared to white group, the odds of having experience in any of four campus health services/programs

use for "other" racial group changed by a factor of 2.87 ($p < .05$). The probability of using overall campus health services/programs was higher for "other" racial group, when compared to white student group. The odds of having experience in any of four campus health services/programs use for part-time ($OR = .19$, $p < .001$), first semester ($OR = .32$, $p < .001$), and social activities ($OR = 1.40$, $p < .01$) changed when compared to full-time and non-first semester. The probabilities of using overall campus health services/programs were lower for part-time and first semester; however, students who were involved with any one of eight campus social activities were less likely to use campus health services/programs. There was no significant predictor in student needs influencing the resources use.

3. Predictors of Four Campus Resources Use

Four binominal logistic regression analyses were conducted in order to identify certain predictors for the utilization of four campus health services/programs currently provided (i.e., students health service, counseling center, wellness hub, and relaxation room). In order to find more significant campus social activities related to each campus health services/programs use, participation of various campus social activities were added in the second block of each analysis. The overall model fits for each resource were summarized and synthesized (see Table 4). For all campus resources, predisposing factors made significant contributions; however, after controlling the predisposing factors, enabling resources was significant in students health service and counseling center; moreover, in the final step of student needs, the model fit of the counseling center use was statistically better than before step showing the -2LL value significantly decreased (Kahn & Nauta, 2001).

Table 3. Predictors of Overall Health Service Use from Logistic Regression

(N=429)

Predictor	Beta	SEB	Wald	OR	95% CI
1. Predisposing Factors					
Age	.01	.02	.12	1.01	.97, 1.04
Gender (female)	.21	.28	.56	1.24	.66, 1.93
Relationship Status (compare to Married)					
Serious Relationship	-.05	.32	.03	.95	.50, 1.73
Single	-.04	.33	.01	.96	.49, 1.76
Other	.01	.43	.00	1.01	.45, 2.35
Health Behavior					
Alcohol Consumption	.01	.13	.01	1.02	.78, 1.32
Drug Use	.43	.33	1.70	1.54	.84, 2.98
Race (compare to White)					
African American	-.11	.44	.06	.90	.40, 2.15
Hispanic	.63	.65	.96	1.84	.50, 6.05
Asian	-.04	.39	.00	1.00	.49, 2.20
Other	1.05	.41	6.53*	2.87	1.31, 6.37
Awareness of Health Services (yes)	2.03	1.13	3.23	7.61	.01, 1.06
2. Enabling Resources					
Physical Accessibility (compare to Out of Baltimore City)					
Dormitory or Campus Housing	.08	.53	.03	1.09	.42, 3.27
Walking Distance	.12	.29	.18	1.13	.74, 2.27
Baltimore City	.51	.33	2.37	1.66	.94, 3.36
System Adjustment					
Attendance Status (part-time)	-1.65	.41	16.61***	.19	.09, .42
Semester (first semester)	-1.13	.26	19.30***	.32	.18, .49
Social Activities (no)	.34	.10	11.20**	1.40	1.02, 1.23
3. Student Needs					
Physical Health	.14	.15	.87	1.15	.88, 1.57
Emotional Health	.06	.14	.18	1.06	.81, 1.42
Perception of Safety	-.15	.16	.87	.86	.67, 1.22

Notes. N = 429. * $p < .05$; ** $p < .01$; *** $p < .001$.

Student health service. Awareness of the resource ($OR = 18.37$, $p < .01$) was associated with greater odds of the student health service use in the predisposing factors. In the second block of enabling resources, part-time ($OR = .139$, $p < .001$), first semester ($OR = .25$, $p < .001$), and non-Greek member ($OR = .39$, $p < .05$) were negatively associated with the service use; however, students who did not involve with volunteer organizations ($OR = 2.16$, $p < .01$) were more like to have chance to visit Student Health Service center. There was no major predictor in student needs factors after controlling the predisposing and enabling factors; that is, student needs did not contribute to the model.

Counseling center. Older age ($OR = 1.09$, $p < .05$) and "other" racial group (compared to white) ($OR = 3.23$, $p < .05$) in predisposing factors were associated with greater odds of the counseling service use. In terms of physical accessibility, students who were living close to school such as 'dormitory or campus housing' ($OR = 9.40$, $p < .05$) and 'walking distance' ($OR = 4.45$, $p < .05$) reported more chance to use of counseling service than those in 'out of Baltimore City.' Unlike the student health service use, only first semester ($OR = .17$, $p < .01$) of system adjustments factors was positively associated with the counseling service use. Student emotional health ($OR = .42$, $p < .05$) was a significant factor influencing a visit to the campus counseling center in student needs factors. The data fit well with the conceptual model.

Wellness hub. Hispanic students ($OR = 5.30$, $p < .05$) were more likely to use the wellness hub service compared to white students in predisposing factors; also, physical health ($OR = 1.88$, $p < .05$) was positively associated with the service use in student needs. Enabling resources did not make a significant contribution to the model.

Relaxation room. Students who were living in 'walking distance' ($OR = .43$, $p < .05$) were significantly less likely to use the service compared to 'out of Baltimore City; however, non-memberships of 'visual, performing arts, and music group' ($OR = 4.08$, $p < .05$) were positively associated with the use of the relaxation room service in enabling resources. There was no significant factor in predisposing and needs factors; however, the model was acceptable.

Table 4. Logistic Regression Predicting of Four Health Services Use[1]

Block	Student health service		Counseling center		Wellness hub		Relaxation room	
	−2LL	df	−2LL	df	−2LL	df	−2LL	df
0. Intercept	556.28		298.03		336.66		364.64	
1. Predisposing Factors	35.03**	13	59.01***	13	38.97***	13	71.845***	13
2. Enabling Resources	88.18***	14	45.01***	14	10.44	14	20.312	14
3. Student Needs	1.28	3	12.79**	3	8.43*	3	.99	3

Note 1. Student health service use (yes = 163); counseling center use (yes = 49); wellness hub use (yes = 59); relaxation room use (yes = 66).
* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 5. Predictors of Four Health Services Use1 from Logistic Regressions

Predictor	Student health service		Counseling center		Wellness hub		Relaxation room	
	OR	95%CI	*OR*	95%CI	*OR*	95%CI	*OR*	95%CI
1. Predisposing								
Age	1.01	.97, 1.05	1.09*	1.01, 1.17	.99	.95, 1.05	.97	.93, 1.02
Gender (female)	1.55	.83, 2.89	5.06**	1.60, 15.97	.77	.36, 1.62	1.14	.54, 2.41
Relationship Status(compare to Married)								
Serious Relationship	.87	.44, 1.70	.57	.19, 1.74	.56	.23, 1.37	.42	.17, 1.01
Single	.77	.38, 1.55	.70	.22, 2.25	.73	.30, 1.81	.62	.26, 1.51
Other	.71	.28, 1.76	.55	.11, 2.67	.82	.27, 2.53	.80	.25, 2.50
Health Behavior								
Alcohol Consumption	1.13	.85, 1.51	1.23	.76, 2.02	1.03	.70, 1.51	.70	.47, 1.05
Drug Use	1.12	.57, 2.21	1.71	.65, 4.52	.59	.22, 1.57	1.73	.75, 3.98
Race (compare to White)								
African American	1.94	.75, 5.01	.00	-	1.13	.28, 4.53	.19	.02, 1.62
Hispanic	.54	.13, 2.28	.00	-	5.30*	1.23, 22.86	1.23	.20, 7.39

Predictor	Student health service		Counseling center		Wellness hub		Relaxation room	
	OR	95%CI	*OR*	95%CI	*OR*	95%CI	*OR*	95%CI
Asian	.89	.38, 2.09	.32	.06, 1.86	2.44	.92, 6.48	1.02	.35, 2.95
Other	1.91	.88, 4.16	3.23*	1.07, 9.76	1.54	.58, 4.10	1.29	.50, 3.34
Awareness of Student Health Service (yes)	18.37**	2.20, 153.04	394	-	379	-	473	-
2. Enabling Resources								
Physical Accessibility (compare to Out of Baltimore City)								
Dormitory or Campus Housing	.99	.30, 3.21	9.40*	1.15, 76.88	3.24	.90, 11.74	.47	.10, 2.16
Walking Distance	1.46	.78, 2.73	4.45*	1.36, 14.60	1.00	.43, 2.36	.43*	.19, .99
Baltimore City	1.65	.83, 3.28	2.79	.82, 9.54	1.10	.45, 2.64	.65	.27, 1.56
System Adjustment								
Attendance Status (part-time)	.139***	.05, .41	.00	-	1.47	.54, 4.06	.81	.26, 2.55
Semester (first semester)	.25***	.14, .46	.17*	.05, .56	.97	.47, 1.99	.65	.29, 1.43
Social Activities (no)								
Academic Organization	1.44	.84, 2.48	.96	.39, 2.37	1.63	.74, 3.59	1.84	.88, 3.82
Student Government	1.02	.53, 1.94	1.82	.68, 4.82	1.03	.45, 2.35	2.09	.93, 4.71
Sports Team	1.28	.62, 2.62	2.32	.76, 7.11	1.12	.44, 2.84	1.32	.55, 3.19
Greek (Fraternity/Sorority)	.39*	.15, .99	.29	.05, 1.76	1.97	.71, 5.50	.92	.29, 2.88
Visual, Performing Arts, Music group	3.38	.96, 11.83	1.74	.25, 12.37	2.55	.63, 10.32	4.08*	1.23, 13.56
Debate Team	.15	.01, 3.50	.00	-	3.11	.17, 57.04	2.06	.07, 65.20
Volunteer	2.16**	2.16	1.34	.55, 3.25	.84	.41, 1.71	.64	.31, 1.31
Religious group	1.33	.62, 2.82	.49	.10, 2.28	.43	.16, 1.20	.96	.39, 2.35
other	.48	.11, 2.13	.68	.05, 8.84	.50	.04, 7.12	.19	.01, 3.45
3. Student Needs								
Physical Health	1.04	.75, 1.43	1.46	.87, 2.47	1.88*	1.19, 2.98	1.25	.80, 1.94
Emotional Health	.99	.72, 1.35	.42**	.25, .71	.89	.60, 1.31	.96	.65, 1.41
Perception of Safety	.83	.59, 1.17	.68	.38, 1.23	.99	.63, 1.56	1.06	.68, 1.64

Note 1. Student health service use (yes = 163); counseling center use (yes = 49); wellness hub use (yes = 59); relaxation room use (yes = 66).
* $p < .05$; ** $p < .01$; *** $p < .001$.

Ⅳ. Discussion

As reviewed earlier, health status and health promotion of students in urban campus are less known, and this current study was designed to identify the correlates of campus health services/programs use among under- and graduate students. Although it is intuitive that based on the conceptual model, predisposing factors, enabling resources, and student needs would affect the utilization of campus health related services and programs, studies have not examined these factors. The study participants had characteristics of urban public universities: greater percentages of women (77.4%), older students (28.4 ± 7.9), minority members (32.9%), part-time students (14.0%), and commuters (59%). Also, in agreement with the previous studies by Mundt (1996) and Warren (2005), students were well aware of the mental health counseling services and pharmacy services provided by student health service, counseling center, and wellness hub. The study confirmed high (52%) overall health service/program use to improve students' physical and mental health; specifically, 38% of student health service, 11% of counseling center, 14% of wellness hub, and 15% of relaxation room were reported. Overall, enabling resources had a stronger association with campus health services/programs use compared with predisposing factors and student needs. Previous studies reported that male students had significantly less use of campus health related service (Davies et al., 2000; Komiya et al., 2000; Mundt, 1996); however, no other significant difference of gender was found. Contrary to empirical evidence related to racial and ethnic differences (Hyun et al., 2006), in this study, African American, Hispanic, Asian, and "other" did not present less use of health services; in fact, "other" group had significantly more use than white. This suggests that the effect of racial and ethnic factors might be considered with socio-economic conditions such as financial constraints. Not surprisingly, in enabling resources, full-time and non-first year students who were more familiar with campus system had more chances to use campus health services/programs, and students who were involved with any one of campus social

activities were more likely to use campus health services/programs. These findings support that lack of time could be one of barriers to use campus health services (Hunt & Eisenberg, 2010).

Depending on the type of campus health services/programs, the study also found associations between predisposing, enabling, need factors, and resource use. Each block had different contributions to models of four campus services/programs. The student health service model was similar to the overall campus health services/programs use model because the largest proportion of the overall use overlapped with the student health service use group. The second model regarding to the counseling center use fit best with ABM (1995). Besides predisposing and enabling factors, student need factors had significant contributions to the model. This help-seeking decision making approach proved an appropriate framework to predict if individuals with mental disorders will seek help taking account into individual, social, and structural factors (Albizu-Garcia, Alegia, Freeman, & Vera, 2001; Mojtabai, Olfson, & Mechanic, 2002). Moreover, enabling and need factors less contributed to the explanation of the models regarding to the wellness hub and the relaxation room uses than to the student health service and counseling center uses. It might suggest that more formal health service use such as the counseling center, better applicable for the conceptual model because of high correlations between enabling and need factor and health service use. In the case of the student health service use, even though students have health service needs such as perceived physical health, they might want to go to their own doctors using their insurance rather than visiting campus health service center. It might be a reason that student needs in the student health service use model did not improve the model fit to predict.

As the Table 5 showed, predisposing factors were differently associated with each campus health service/program use. Age was significantly associated only with the counseling center visit. It might support that attitudes toward mental health treatment were positively related to age (Gonzalez, Alegria, & Prihoda, 2005). Also,

race was an important predictor to account the counseling center visit and the wellness hub use. Compare to white students, "other" racial group was more likely to use counseling services; however, African Americans, Hispanics, and Asians were negatively related to use the services. The results were consistent with previous studies explaining the relationship culture and propensity for seeking counseling services (Hyun et al., 2006; Lippincott, 1995), but for the future research, information related to socio-economic status should be collected, and to sort am international group from racial groups will be meaningful. Hispanic students were more likely to use self-assessment and coaching services and to participate campus various wellness events provided by wellness hub. Not surprisingly, awareness or knowledge of campus helping resources was positively related to all resources use, and in student health service, the relationship was statistically significant. Lack of knowledge about campus health services/programs could be not only one reason of not using them (Eisenberg et al., 2007; Yorgason et al., 2008) but also negatively influence problem-solving self-appraisal (Neal & Heppner, 1986). Therefore, these findings suggest that campus health care providers should consider an effective information dispersal strategy for university students to use basic medical services provided by student health services as well as other resources. Unexpectedly, gender, relationship status, and alcohol/drug use in predisposing factors were not associated with any one of campus health services/programs use.

Findings about significant enabling factors regarding to each use were meaningful. Physical accessibility was an important predictor of counseling visits and of taking a rest in comfortable space. It implies that more distance from campus, less use of counseling services; however, long-distance commuters were more likely to use relaxation room to take a rest while in campus. Part-time and first year students who had lack of system accessibility and familiarity were less likely to use various medical and counseling services with consistent findings with a previous study (Mowbray et al., 2006); otherwise, the students might receive primary medical care with insurance coverage rather than campus health services (Grace, 1997). Thus, in

order to better predict for enabling factors of the future research, insurance or financial aid for medical problems should be added. Another important finding was that each campus social activity and organization differently influenced the campus health services/programs use. Greek members were more likely to use student health services than non-Greek members. It supported a previous study that Greek members should engage in more risky health behavior (Scott-Sheldon, Carey and Carey, 2008). On the contrary, increasing student involvement in campus volunteer services could improve campus environments and lead students to positive health behaviors (Wechsler & Nelson, 2008); thus, they might have less chance to receive campus medical services provided by student health services. Also, visual, performing arts, and music groups' members were less likely to use the relaxation room services. These findings of campus social activities suggest which activities campus administrators should focus for campus promotion. System adjustment factors should be inevitable in personal level, or social support on campus such as social activities might be often beyond personal level. Therefore, it was important to understand these correlates of the use, and future research will need to explore more concrete evidences.

Even though university students face increased physical and mental health problems due to increased demands, expectations, and stress (Nelson et al., 2001), appropriate programs and resources on campus have not been developed and provided for students' health promotion. Results of this study of student needs suggest clear relationships of physical and emotional health in terms of counseling visits and wellness events participations. In agreement with previous studies (Eisenberg et al., 2007; Klainberg et al., 2010; Mowbray et al., 2006; Nelson et al., 2001), perceived needs such as poor emotional condition encouraged students to use counseling services in universities. In addition, because wellness programs comprise various dimensions, including spiritual, emotional, environmental, social, vocational, and intellectual, and may be targeted to the physically fit body (Grace, 1997), individuals in good physical condition were more likely to frequent wellness

programs and events. Even though previous studies focused more on perceived mental health, the significance of physical health related to the wellness hub use helped practitioners and students to understand importance of various wellness programs.

While the current findings have contributed to our understanding of factors that influence the utilization of campus health-related services, there are several limitations. First, in order to support the study findings and the conceptual model, several questions regarding students' health related help-seeking behavior should have been supplemented, including attitudes toward the resources, financial status of university students, insurance coverage, pressures from studying, and the frequency of resources used. Second, in the data collection processing, a low response rate was mentioned as a problem and 20 % of cases from the raw data were incomplete and had to be removed; this can cause bias. Third, even though the random sampling method was used, the participants were recruited from one urban university, so the sample may not be representative of characteristics of urban university students in the U.S. Last, the cross-sectional survey weakened the causality.

Despite these limitations, the findings from the study may provide valuable insight for those interested in addressing the importance of university student health and the use of campus services and programs. These also have implications for practice and future research. First, the health behavioral theoretical framework was applicable to formal health services use such as counseling center. Using this conceptual model, this study found meaningful correlates influencing campus health services/programs use. The second implication for practice was to find the importance of social support. As the results presented, social activities were differently associated with campus health and health services use; for instance, the volunteer organizations worked out positively for campus social support, but Greek organizations did not. Therefore, campus administrators can focus their efforts to better directions and encourage positive campus social networks(Hinck & Brandell, 2000). Last, practitioners need

to approach each service/program individually. Various campus health-related services have different means through which to urge urban university students to use them. This suggests that for efficient and effective utilization in limited services, practitioners and administrators require deep understanding of actual campus services provided and the characteristics of their students. In summary, findings of this study provide explanations for students' individual, social, and structural factors associated with campus help-seeking care in urban campus. New application of the conceptual model to campus and an examination of varied resources' use, in addition to counseling services, suggest some limitations and implications for the future research.

홍석호는 미국 메릴랜드주립대학교에서 사회복지학 박사학위를 받았으며, 현재 서울시립대학교와 동국대학교에서 시간강사로 재직 중이다. 주요 관심분야는 노년학, 문화적응, 정신보건, 호스피스와 완화치료이며, 현재 죽음의 질 향상, 노인자살 예방 등을 연구하고 있다.
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미국 도시 대학 캠퍼스의 건강 증진과 학생 보건서비스/프로그램 이용

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이 연구의 목적은 도시대학 캠퍼스를 중심으로 학생들의 건강을 증진시키기 위해 교내에서 제공 되어 지고 있는 건강관련 보건서비스(혹은 프로그램)의 이용실태와 영향요인들을 분석하기 위함이다. 임의 선택된 2400명의 학생 중에 536명(응답률 22%)이 2011년 가을학기의 온라인 서베이에 응답하였고 결측값을 제외한 429 케이스를 본 연구 분석을 위하여 사용하였다. 교내 서비스에 대한 이용패턴을 분석하기 위해 엔더슨의 건강행동모델(Andersen의 의료이용모형)을 적용하였다. 교내 건강서비스 이용 인자를 찾기 위해 이용그룹과 이용하지 않은 그룹간의 비교를 위해 위계적 로지스틱 회귀분석 기법이 이용되었다. 구체적인 서비스 별 인자는 서로 다른 패턴으로 발견이 되었다. 학생 보건센터(student health service) 이용은 높은 인지도, 전일제, 높은 학년의 학생 일수록 이용 확률이 높은 것으로 나타났다. 흥미롭게도 남녀 사교클럽(Greek organization)의 학생일수록 보건센터 방문 확률이 높았으나, 자원봉사단체의 학생일수록 방문 확률이 낮았다. 학생 상담실(counseling Center)이용은 많은 나이, 소수 인종, 학교와의 높은 접근성, 높은 학년, 그리고 낮은 정신건강 지표의 학생 일수록 이용 확률이 높은 것으로 나타났다. 건강관련 강좌(wellness hub)의 이용은 높은 신체건강 지표와 소수인종의 학생일수록 이용 확률이 높은 것으로 나타났다. 수면실과 안마의자 서비스(relaxation room)는 낮은 접근성과 음악과 미술관련 동아리 회원일수록 낮게 나타났다. 다양한 교내 서비스를 필요로 하는 학생들에게 적절하게 서비스가 제공되기 위해 서비스 별 체계적인 접근법을 가지고 학생들에게 홍보되어져야 한다.

주요용어: 건강증진, 보건서비스 이용, 도시 캠퍼스, 엔더슨의 건강행동 모델