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Related Factors on Breast Self-Examination in Women's Students

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Abstract- As the incidence of the breast cancer has been increased in South Korea. And so, public awareness of the breast self-examination and the need of attention are required detecting and preventing the breast cancer. But the rate of breast self-examination practice was low. The purpose of this study was to identify the influential factors to perform the breast self-examination based upon the Health Belief Model. Champion's Health Belief Model Scale-Korean version was used to measure the health belief of Breast Self-Examination among women's students. The structured questionnaires were used for data collection. Data were analyzed with SPSS/WIN 19.0 program. In conclusion, it would be contributed to the awareness to breast self-examination practice for breast cancer early detection in women's students, and promoting breast self-examination practice to the public.

Keywords-Breast Self-Examination, Health Belief, Self-Efficacy, Women's students

1. Introduction

1. Research background

In the 2011's status of national health insurance cancer clinic patients, the common cancers for female patients were breast cancer, stomach cancer, colon cancer, cervical cancer, lung cancer, and liver cancer in order [1], and about 16,000 women were diagnosed with breast cancer in 2011, the most common cancer in women, and the incidence is increasing every year [2]. Breast cancer patients experience various problems such as treatment-related anxiety, depression, decline of self-esteem, and misanthrope [3], which can lead toseveral complications and death.The five-year observed survival rate of breast cancer patients in Korea recently has been reported as 90.6% [4], and the significance of early detection is more emphasized than ever because the prognosis is good as far as breast cancer is detected early. Among the methods for early detection of breast cancer, a safe and economical method to be conducted readily is Breast Self-Examination (BSE), which has been recommended in various countries for about 70 years [5]. In Korea, the ministry of health and welfare developed the National Cancer Screening Program (NCSP) in 2001 and recommended BSE [6]. However, although Breast Self-Examination(BSE) is recommended not as a one-time or intermittent practice but as a health behavior to be performed regularly and constantly [7], only a few perform BSE regularly every month [8]. Thus, it is necessary to develop measures to make BSE performed constantly. Especially, because women's students are future leaders as well as future mothers who will experience marriage, pregnancy, and delivery, the circumstances that risk their health cannot be overlooked. Therefore, this study is designed to create the preliminary data for the development and improvement of BSE practice program by investigating the degree of BSE practice in women's students who correspond to early adulthood group, and verifying the correlation between BSE health beliefs and the self-efficacy as BSE-related variables.

2. Research Method

2.1 Research design

This study is a cross-sectional descriptive correlation study to investigate the health beliefs about BSE, BSE practice, and correlation with self-efficacy in women's students.

2.2 Research subjects and Data collection

The research subjects in this study were women's students attending 2 universities in the S city, and the data collection period was April 10to April 21, 2013. When the sample size was calculated by using G*power 3 program with the median effect size of .15, which is needed for regression analysis, significance level of .05, statistical power of .80, and 5 independent variables, it was found that at least 92 subjects were needed. 450 candidates were recruited and 434 surveys were used excluding 16 surveys with insufficient responses. The sample size in this study was sufficient. The subjects were informed about the study purpose and data collection methods, and that all data would be anonymized and used only for the study purpose. Also, it was emphasized that the study participation would be voluntary and they would be free to withdraw from the study without any disadvantage. The subjects who agreed to participate in the study performed survey after signing in the written consent form, and thus the ethical aspect was considered.

2.3 Research method

2.3.1 Health beliefs about breast self-examination

The method to measure health beliefs about BSE included sensitivity and severity about breast, benefits of BSE, difficulty and confidence, and health motivation. In this study, it is a score of CHBMS-Korean Version, which is a modified and complemented Korean version of Champion's Health Belief Model Scale[9] by Lee, Kim and Song[10]. It has a total of 36 questions consisting of 4 benefit questions, 6 difficulty questions, 11 confidence questions, 5 sensitivity questions, 7 severity questions, and 3 health motivation questions. Based on the Likert 5 point scale, 'strongly disagree' was 1 point, and 'strongly agree' was 5 points. The range of score is from the minimum of 36 to the maximum of 180, and a higher score means greater health belief about BSE. The range of Cronbach's alpha coefficient which

represents the confidence of Champion's Health Belief Model Scale[8]was .80-.93, and the range of Cronbach's alpha coefficient in this study was .78-.93.

2.3. 2 Breast self-examination practice

The scale of BSE practice was the method developed by Kim[11], which was based on Likert 4 point scale and consisted of 7 questions. The lowest score is 7 and the highest score is 28. 'Never practice' is 1 point and 'practice every month' is 4 points, and a higher score means greater BSE practice. Cronbach's alpha, the tool confidence level, was .94 in Kim's study [11], and .88 in this study, .

2.3.3 Self-efficacy

The scale of self-efficacy was the method developed by Sherer and Adams[12] and adapted by Lee[13]. It consisted of a total of 10 questions and was based on Likert scale. 'Strongly disagree' was 1 point and 'strongly agree' was 5 points. The range of score is from the minimum of 10 to the maximum of 50, and a higher score means greater self-efficacy. Cronbach's alpha, the tool confidence level, was .92 in Lee's study[13], and .87 in this study.

2.3.4 Method of data analysis

The data of this study was verified by using SPSS Win 19.0 version program, and the tool confidence level was verified with Cronbach's alpha coefficient. The general characteristics of subjects and relevant variables were generated through descriptive statistics, and the difference of BSE practice by general characteristics was analyzed by t-test, ANOVA, and Scheffe's test. The correlations between relevant variables were analyzed through Pearson's correlation. The factors influencing BSE practice were analyzed through Stepwise Multiple Regression.

3. Results

3.1 Differences of BSE practice and health beliefs by general characteristics

For the difference of BSE practice by general characteristics, there was statistically significant difference by major (p=.001), and in the Scheffe's post-verification results about major, the score of BSE practice was significantly higher in nursing science major than in humanity/social science major and health-related major. Also, there was significant difference in BSE practice depending on drinking (p=.047), but there was no significant difference in the Scheffe's post-verification results.

For the difference of health beliefs by general characteristics, there was significant difference by major (p<.001), and in the Scheffe's post-verification results about major, the score of health beliefs about BSE was significantly higher in nursing science major than in humanity/social science major and health-related major. Also, there were differences by drinking and health status (Table 1).

3.2 Correlation among BSE, health belief and self-efficacy

In the assessment of the correlation among BSE, health belief, and self-efficacy, the degree of BSE practice had significantly positive correlations with health belief (r=.208, p<.001), and self-efficacy(r=.151, p=.002), and had positive correlation with health belief and self-efficacy(r=.110, p=.021). That is, the greater the health belief and self-efficacy

Table 1. Differences of BSE and Health Beliefs to General Characteristics (n=434)

Characteristics categories		Breast Self-Examination				Health Beliefs		
		N(%)	M±SD	t(F)	*p*	M±SD	t(F)	*p*
Age(yr)		434(100)	20.25±1.5					
Religion	Christian	127(29.3)	1.47±0.56	.971	.423	2.58±0.33	.559	.423
	Budism	30(6.9)	1.46±0.53			2.57±0.37		
	Catholic	53(12.2)	1.52±0.66			2.63±0.25		
	Others	2(0.5)	1.07±0.10			2.63±0.23		
	None	222(51.2)	1.39±0.52			2.55±0.35		
Major	Natural science(a)	20(4.6)	1.32±0.41	5.354	.001	2.55±0.32	9.619	.000
	Humanity/Social(b)	249(57.4)	1.14±0.55		†(c>b,d)	2.54±0.31		†(c>b,d)
	Nursing science(c)	100(23.0)	1.61±0.64			2.72±0.33		
	Health related(d)	65(15.0)	1.29±0.37			2.48±0.35		
Smoking	Yes	9(2.1)	1.28±0.41	.410	.664	2.71±0.30	.875	.418
	No	417(96.1)	1.44±0.55			2.57±0.33		
	Stop	8(1.8)	1.37±0.55			2.62±0.27		
Alcohol drinking	Yes	303(69.8)	1.43±0.52	3.084	.047	2.55±0.33	3.231	.040
	No	118(27.2)	1.41±0.57			2.64±0.35		
	Stop	13(3.0)	1.81±0.87			2.60±0.24		
Exercise	Yes	63(14.5)	1.51±0.63	1.163	.245	2.52±0.31	1.511	.220
	No	371(85.5)	1.42±0.54			2.58±0.34		
Health status	Healthy	171(39.4)	1.43±0.52	0.70	.932	2.55±0.36	6.523	.002
	Moderate	231(53.2)	1.44±0.58			2.56±0.30		
	Unhealthy	32(7.4)	1.40±0.52			2.78±0.36		
With BC family	Yes	19(4.4)	1.48±0.63	.334	.738	2.58±0.36	0.54	.957
	No	415(95.6)	1.43±0.52			2.57±0.33		

BC : Breast Cancer, * p< .05, †Scheffe's test for post-hoc comparison

was, the higher the degree of BSE practices was. Also, the higher the degree of BSE practice was, the greater the self-efficacy wasTable 2.

Table 2. Correlation among Breast Self-Examination, Health Belief and Self-Efficacy (n=434)

Variables	Breast Self-Examination r(*p*)	Health Belief r(*p*)	Self-Efficacy r(*p*)
Breast Self-Examination	1		
Health Belief	.208**(*p*<.000)	1	
Self-Efficacy	.151**(*p*=.002)	.110*(*p*=.022)	1

3.3 Variables influencing BSE

In order to verify the variables influencing BSE, step-wise regression analysis was conducted. Also, major and drinking, which showed significant difference in BSE practice by general characteristics, and BSE health belief and self-efficacy, which showed significant correlation with BSE practice, were included in the step-wise regression analysis. As a result of the analysis of Tolerance Limit and Variance Inflation Factor (VIF) in order to verify the Multi-collinearity of independent variables prior to multiple regression analysis, the tolerance limit was 0.987 ~ 0.988, which was greater than 0.1, and the VIF was 1.011 ~ 1.012, which was less than 10, indicating that there was no problem in multi-collinearity. Also, the value of Durbin-Watson was obtained in order to verify the independence of residuals, and the result was 1.802, indicating that there was no autocorrelation. As a result, it was found that regression model had significant difference(F=19.55, *p*<.001). The variables influencing BSE in subjects were health belief(β=.194, *p*<.001), and self-efficacy(β=.127, *p*=.007), and these variables showed that 59% can be explained about BSE practice (Table 3).

Table 3.Variables influencing Breast Self-Examination (n=434)

Variables	B	SE	β	*t*	*P*
Health Belief	.321	.078	.194	4.131	<.001
Self-Efficacy	.128	.048	.127	2.690	.007
R^2=0.59, Adj. R^2=0.55, *F*=19.55, *p*<.001					

4. Conclusion

As the incidence of the breast cancer has been increased [15].And so, it is necessary to prevent breast cancer.In this study, the subjects who have performed BSE by themselves were very low at 12.9%. This result was similar to the report that the frequency of regular BSE practice every month or every other month among professional women was 2% according to the study investigating BSE practice among professional women [14]. This showed that the BSE practice was very low and thus it was imperative to develop various mediated programs to improve BSE practice. Also, for the correlations among BSE practice, health belief and self-efficacy, health belief and self-efficacy had significantly positive correlation with the practice and could explain 59% about BSE, and thus the development of program to increase health belief and self-efficacy is imperative to enhance BSE practice among women's students.

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