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Abstract

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I. Introduction

Cervical cancer is one of the most common cancers in women worldwide and poses a significant global cancer burden. About 510,000 cases of cervical cancer are reported annually, 68,000 in Africa, 77,000 in Latin America, and 245,000 in Asia (Saslow et al., 2007). Recent studies demonstrate that successful implementations for early detection offer an opportunity to prevent deaths and reduce the cancer burden. Cervical cancer screening program has proved to be a successful model to decrease the mortality in the U.S. and reduce the incidence of invasive cervical cancer by at least 89% in Europe (Bray et al., 2005; Solomon et al., 2007). Pap test is considered an integral part of women's preventive health care.

In Korea, cervical cancer is the most prevalent type of cancer among adult women, but it is one of the few cancers in which a consensus-approved screening test exists for early diagnosis, Pap test, that can be combined with highly efficacious treatment regimens for early-stage disease. Thus, most deaths due to cervical cancer can

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be considered as avoidable mortality (National Cancer Center, 2004).

Although long-term national trends in Korea show a decreasing mortality rate from cervical cancer, the incidence of invasive cervical cancer has been increasing among older women. Moreover, a disproportionate share of the cervical cancer burden in Korea, in terms of both incidence and mortality, is shouldered by low-income minority women. Given that national and local health organizations often serve as the regular source of health care for these women, more intensive efforts to control cervical cancer will need to involve health department programs (Marcus AC & Crane, 1998).

A cervical cancer screening program was started by Korean Health Insurance in 1997 in Korea, with a nationwide cervical cancer screening program started in 2001. In these cervical cancer screening programs, all women older than forty years receive a cervical cancer screening every two years.

Early detection is an important tool for implementing secondary prevention. By performing regular cervical cancer screening on women in high-risk age groups, possible cancer can be detected at an early stage so that the health risks on these women can be minimized. But according to data from the 2001 National Health Behaviors Survey in Korea, approximately 42% of all adult women who aged forty years or older had been screened for cervical cancer in the past two years (KIHASA, 2002). In recent study, 58.3% of adult women older than thirty years got the cervical cancer screening in the past two years (Kwak et al., 2005). Compared the screening rate with advanced counties, there is still low screening rate for Pap test. So it needs to develop various programs and educational materials to promote screening rate for Pap test among adults women.

Recent studies have shown that tailored messages could lead to encourage women's individual beliefs. To identify variables associated with cervical cancer screening behavior, many studies have used the Transtheoretical Model (TTM). In particular, some studies in recent decades have stressed the importance of self-efficacy for enacting new health behaviors in general, as well as for attending cervical cancer screening (Godin & Shepard, 1990; Ajzen, 1991; Suarez et al., 1993; Prochaska et al., 1994; Carpenter & Colwell, 1995; Henson et al., 1996; Meissner et al., 1998).

However, not much is known about how these factors influence on cervical cancer screening behavior through stages-matched intervention program. Even though some studies have tried to estimate the effectiveness of intervention to promote cervical cancer screening in the last decades, critical elements and successful strategies have not been assessed.

Therefore, this study was carried out to identify the cognitive-behavioral factors associated with cervical cancer screening behavior among adult women, aged 40 to 59, and to develop tailored message and to evaluate the effectiveness of stages-matched educational program. Due to the fact that the National cancer screening program for low-income group has provided Pap test to women older than forty years, this study focused on adult women who aged more than forty years or older.

II. Method

Subjects and design

We recruited 335 women who were aged 40 or older in Seoul, from September, 1st to November, 14th, 2003. Our subjects were parents of students who were in third grade of two kinds of middle school, Sewha and Seocho middle schools, in Seocho-gu, Seoul.

We selected the intervention group (N=172) among parents of students of Sewha middle school and collected the control group (N=163) among those of Seocho middle school. The intervention group had lived in two sub-districts (Banpo-dong & Bangbae-dong), and the control group in three sub-districts (Seocho-dong, Yangjae-dong, and Woomyeon-dong).

Both of them who were intervention or control groups were volunteers for our educational program. The final subjects were 283 women (84.5%) who were consisted of intervention group (N=162) and control group (N=121), for rule out data of 52 women who didn't respond faithful (N=42) and gave up on their way for the stages-matched educational program (N=10).

Building on the Transtheoretical Model (TTM), we conducted a quasi-experimental study to test the effectiveness of stagesmatched educational program for cervical cancer screening, Pap test, by five different stages (precontemplation, contemplation, preparation, action, and maintenance).

Cognitive-behavioral factors

(1994)Prochaska and colleagues provided process of change, attitude, and self-efficacy (confidence & temptation) to explain cognitive-behavioral factors in the Transtheoretical model. Processes of change were consisted of two categories and ten factors, such as experience (consciousness raising, dramatic relief, self-reevaluation, environmental reevaluation, and self-liberation) and behavior (helping relationships, counter conditioning, contingency management, stimulus control, and social liberation). Attitudes can be assessed by measuring the beliefs that are associated with a particular behavior and the evaluation of these beliefs. Self-efficacy expectation means the confidence of personal abilities to perform a particular behavior (Bandura, 1986). So, in this study, the attitude of cervical cancer screening was estimated by the beliefs in effectiveness of that, and the self-efficacy by capacities to attending for Pap test.

Stage of change

Precontemplation (PC) was the stage in which the women had never participated on Pap test in their life-time with no intention to take the cervical cancer screening within next two years. In case, even though the women had participated on Pap test at least once or more in their life-time, with they had no intention for adherence on the cervical cancer screening within next two years, they were classified to precontemplation stage. Contemplation (CP) was the stage in which the women had never taken Pap test in their life-time, but they had intention for that within next two years. If the women had participated on Pap test at least once or more in their life-time except the past two years and had intention for that within next two years, they were included in contemplation stage. Preparation (PR) was the stage in which the women had never taken Pap test in their life-time, but they had intention for adherence on cervical cancer screening within next six months. Also it was included who had got Pap test at least once in their life-time except the past two years and had intention for that within next six months. Action (AC) was the stage in which the women had taken Pap test in the past two years, with they had intention for adherence on cervical cancer screening within next six months or next two years. Maintenance (MT) was the stage in which the women had participated on Pap test at least twice times in their life-time and got it more than once in the past two years, with they had intention for adherence on cervical cancer screening within next six months or next two years.

Tailored messages by stages matched

We established constructs of tailored messages, such as basic knowledge, emphasis, and strategies, with the consensus of our advisory committee and study team. The messages for general information were consisted of epidemiology of cervical cancer among Korean women, risk factors. guideline of cervical cancer screening, and prevention for cervical cancer. The next, messages for precontemplation stage were developed with statistics related to cervical factors cancer. risk and symptom, importance of early detection and cervical cancer screening, benefit for health status, case report, and self-evaluation on cervical cancer. The messages for contemplation stage were composed of regular participation on cervical cancer screening, reducing

barriers, guideline of cervical cancer screening, self-reevaluation, and commitment for having Pap test. The messages for preparation stage included reasons of participation on cervical cancer screening, establishment of aim. searching for accompany or helper, and describing schedule for cervical cancer screening. The messages for action stage were consisted of reducing of barriers to screening. comparison with benefit and health loss, control of temptation, encourage of self-admiration, and treatment of cervical cancer. Finally, the messages for maintenance stage were developed with adherence of regular screening, correcting for wrong information, commitment for the screening behavior, and searching for helper or supporter.

Intervention

The intervention group was divided into internet and postal service groups based on the choice of participants. The internet group (N=89) received the educational materials via e-mail, and the postal group (N=83) got it by postal service. In the intervention group, the completion rate was 94.2%. 91% of the internet group and 97.6% of the postal finished completely the group stages-matched educational program for four weeks. It served four times the educational materials (general information and three kinds of tailored messages) to the participants on our intervention (See table 1). То find out the change of cognitive-behavioral factors between intervention group (N=162) and control group (N=121), we performed the pre-test and post-test.

Evaluation

We performed pre and post tests to examine the effectiveness of stages-matched educational program. First of all, we performed pre-test with permission for our research from all participants. After intervention, we carried out post-test for

Table 1. Composition of educational materials by stages-matched messages

Stage of change	1 st Material	2nd Material	3rd Material	4th Material	
Precontemplation: PC	General	Messages for PC	Messages for CP	Messages for PR	
Contemplation: CP	Information	Messages for CP	Messages for PR	Messages for AC	
Preparation: PR		Messages for PR	Messages for AC	Messages for MT	
Action: AC		Messages for AC	Messages for MT	Messages for CP	
Maintenance: MT		Messages for MT	Messages for CP	Messages for PR	

Step	Intervention group	Control group
1 st step	- Permission for participation on our research	- Permission for participation on our research
	- Pre-test	- Pre-test
	- Choice of delivery type: Internet/Postal S.	
2 nd step	- Classification with behavioral stages	
	- Delivery of first educational material	
2 rd stop	- Delivery of second educational material	
5 step	- Delivery of third educational material	
	- Delivery of fourth educational material	
4 th step	- Potential period (4 weeks)	
	- Post-test	- Post-test
5 th step	- Survey for the satisfaction	
	with stages-matched educational program	

Table 2. Research process

complete participants.

To estimate cognitive-behavioral factors and satisfaction of intervention groups with the stages-matched educational program, we used summated scores by 5 scales measurement. In case of internal reliability, it showed meaningful values of processes of change (Chronbach's alpha=0.73, 0.76), attitude (Chronbach's alpha=0.91, 0.92), and self-efficacy (Chronbach's alpha=0.95, 0.96) in pre and post tests. We evaluated the effectiveness of stages-matched educational program using paired t-test by SAS 6.2.

III. Results

General characteristics and cervical cancer screening rate

The participants were 47% ranging aged

40 to 44 and 70.6% homemakers. 82.7% of the participants showed household income level of 2.5 million won over per month. In health status, 13.4% was poor, and 64.3% was in normal level of BMI (18.5-22.9). There were not significant for age, employment status, household income, health status, and BMI between intervention and control groups. That is, general characteristics on baseline were similar, but not different among participants.

There were 88.9% of the participants who had screened Pap test at least once in their life-time and 65.4% of them who had got it in the past two years.

Cognitive-behavioral factors

The stages-matched educational program was effective to change the cognitivebehavioral factors and the behavior stages

				١	Unit: N (%)
Characteristics		Intervention group	Control group	Total	x ²
	40-44 years	69(42.6)	64(52.9)	133(47.0)	
Age	45-49 years	57(35.2)	42(34.7)	99(35.0)	5.28
	50-59 years	36(20.2)	15(12.4)	51(18.0)	
	Professional	16(9.9)	13(10.7)	29(10.2)	
	Administrator	8(4.9)	8(6.6)	16(5.7)	
Employment	Salesperson	7(4.3)	9(7.5)	16(5.7)	0.25
status	Functional worker	1(0.6)	2(1.7)	3(1.1)	9.23
	Others	6(3.7)	13(10.7)	19(6.7)	
	Homemaker	124(76.5)	76(62.8)	200(70.6)	
Household	≤2,500,000 won	22(13.6)	27(22.3)	49(17.3)	2.60
income	>2,500,000 won	140(86.4)	94(77.7)	234(82.7)	3.09
	Good/well	70(43.2)	43(35.5)	113(39.9)	
Health status	Fair	72(44.4)	60(29.6)	132(46.7)	1.74
	Poor	20(12.4)	18(14.9)	38(13.4)	
	Under 18.5	12(7.4)	4(3.3)	16(5.7)	
BMI	18.5-22.9	100(61.7)	82(67.8)	182(64.3)	2.51
	23.0-24.9	29(17.9)	224(19.8)	53(18.7)	3.51
	25.0 and plus	21(13.0)	11(9.1)	32(11.3)	
Total		162(100.0)	121(100.0)	283(100.0)	

Table 3. General Characteristics



Figure 1. Change of behavioral stages among intervention group

Classification		Pre-test	Post-test	Difference	t	
		m±SD	m±SD	m±SD		
Process of Change: Experience	Internet group Postal group Control group Total	18.2±2.77 18.0±2.84 18.1±2.42 18.1±2.64	18.3±2.49 18.7±2.32 18.2±2.52 18.4±2.46	0.19±0.32 0.68±0.26 0.09±0.21 0.29±0.15	0.60 2.66** 0.45	
Process of Change: Behavior	Internet group Postal group Control group Total	17.8±2.81 17.6±2.94 17.6±2.56 17.7±2.73	18.0±2.42 18.5±2.64 17.6±2.53 17.9±2.55	0.12±0.34 0.79±0.29 -0.05±0.25 0.23±0.17	0.34 2.73** -0.21	
Attitude	Internet group Postal group Control group Total	16.8±1.95 15.8±2.05 15.9±2.13 16.1+2.09	16.4+1.83 16.4+1.93 16.1+2.38 16.3+2.11	-0.39+0.29 0.70±0.27 0.24±0.29 0.18±0.17	-1.36 2.55* 0.85	
Self-efficacy	Internet group Postal group Control group Total	$\begin{array}{c} 27.7{\pm}4.72\\ 25.8{\pm}5.07\\ 26.0{\pm}4.70\\ 26.5{\pm}4.86\end{array}$	26.5±4.64 26.6±4.97 26.4±4.84 26.5±4.81	-1.25+0.69 0.78+0.72 0.38+0.59 0.03+0.38	-1.81 1.08 0.64	

Table 4. Effectiveness of stages-matched educational program

* p<0.05, ** p<0.01

for cervical cancer screening. With regard to cognitive-behavioral factors, the stagesmatched educational program increased attitude and processes of change (experience, behavior) for cervical cancer screening (p<0.05, p<0.01). Particularly, postal service group showed remarkable changes except self-efficacy, but internet group did not (See table 4).

Table	5.	Change of b	oehavioral	stages for	cervical	cancer	screening	between	pre-test
		and post-tes	st among	intervention	group				

Unit: N (%)

Classification		Stage of change					Total
		PC	СР	PR	AC	MT	Total
Total	Pre-test	31(19.1)	17(10.5)	20(12.4)	14(8.6)	80(49.4)	162(100.0)
Total	Post-test	23(14.2)	7(4.3)	9(5.6)	12(7.4)	111(68.5)	162(100.0)
Internet group	Pre-test	14(17.3)	9(11.1)	12(14.8)	5(6.2)	41(50.6)	81(100.0)
	Post-test	11(13.6)	4(4.9)	6(7.4)	6(7.4)	54(66.7)	81(100.0)
Postal group	Pre-test	17(21.0)	8(9.9)	8(9.9)	9(11.1)	39(48.1)	81(100.0)
	Post-test	12(14.8)	3(3.7)	3(3.7)	6(7.4)	57(70.4)	81(100.0)

Stage of change

The individual's behavior stage in post-test was changed with the stage in pre-test. Compared the difference between pre and post tests, there was increased percentages in action and maintenance stages, while decreased that in the others (See table 5). The percentage changed was the largest in maintenance stage (49.4% vs. 68.5%). The next were preparation stage, contemplation stage, precontemplation stage, and action stage in that order.

With regard to delivery methods for tailored messages, the printed materials were more effective at increasing cervical cancer screening adherence than the e-mail (See figure 1). Whereas the postal service group showed remarkable the change of behavior stage, the internet service group did not. In addition, it was not shown any difference of the satisfaction with stages-matched education program between internet and postal groups.

IV. Discussion

Cervical cancer screening is known as a successful model for cancer prevention in women's preventive health care, and the community-based interventions to encourage cervical cancer screening have accumulated over the last decades. Even though effective strategies have contributed to improve the screening rate for Pap test, cervical cancer screening service still remains underused by adult women. According to KIHASA (2002) data, 42% of all adult women older than 40 years got screening for cervical cancer in the past 2 years, and 65.4% of our participants received the Pap test in the past two years. Compared the screening rate of Korea with advanced country, Korean women showed lower rate than American women, 86.8% in 2002, 85% in 2003 (CDC, 2007; Solomon et al., 2007).

To improve the screening rate, successful strategies are essential in community-based interventions. Interventions are most likely to be effective for behavior change. If researchers study special targets or health behaviors, it is necessary that they obtain adequate information about study design, measurement and analysis techniques. It would have influence the success or failure of an intervention. In spite of that, at present, we lack sufficient knowledge to say which interventions are effective and elucidate the causal pathways between community-level factors and the outcomes of interest.

For that reason, so many studies for cancer screening behaviors have used theoretical models, such as the Health Belief Model, Social Learning Theory, and Transtheoretical Model (TTM) to develop the screening messages (Meissner, 1998). In particular, the Transtheoretical Model is develop useful to tailored messages according to change of stages. For effective education about cervical cancer screening, it recommends to provide tailored messages to different age and target group. So that this study used the Transtheoretical Model to develop the tailored messages which could lead to positive change of behavior stages. In our results, it assessed that the stages-matched educational program using tailored messages was effective at changing attitude and behavior stages for cervical cancer screening, at least in the short term.

In the other side, most community-based interventions have used additional strategies including media campaign, accessenhancing activities, physician approach (mobile examination room, conducting on-site Pap test in a local health center), individual-directed strategies, and social network. Rimer (1994) also suggested that intervention strategies implied media campaign, individual directed or physician directed methods, access enhancing, policy level, social network, and community education.

These strategies have used to target population to promote screening rate for Pap test. In case of individual-directed strategy, it was known as successful approach method, so many studies have used primarily face-to-face counseling, letter containing tailored messages, telephone calls, printed or audiovisual materials, and a presentation at one of the regularly scheduled meeting (Satariano et al., 1982; Ansell et al., 1994; Meissner et al., 1998; Taylor et al, 2002).

This study used individual-directed strategy, such as delivering educational materials, with stages-matched messages for cervical cancer screening so that detected the change of behavior stages. Cognitivebehavioral factors which were process of change, attitude, and self-efficacy effected on positive changes through the intervention and contributed to change women's behavior stages for Pap test. Also, compared delivery methods for stages-matched messages, postal service was better than internet approach. It is supposed that women prefer to read printed material rather than electronic message. That is, it would be not convenient or good at activation of internet to women who aged 40 years or older.

Finally, much research is needed to ensure the introduction and success of cervical cancer screening program for Korean women. Community-based cervical cancer screening program can significantly reduce the cancer burden. Although women attend on Pap test, it remains critical problem how to undergo and promote regular screening among youth and adult women. Thus, it needs to develop strategies for various targets and sites, such as multi multi-channel media mass campaign (posters, newspapers, radio, television, etc.). For example, Davis and colleagues (1994) studied on social influence tested the feasibility of individual approach for cervical cancer screening in minority community. A lay health leader was selected from the congregation of each church by the pastor. These individuals were then trained to serve as lay health educators, recruiters, and organizers for a cervical cancer screening program conducted on-site at the church and mobile examination rooms. Overall, 372(90%) of 413 women were screened at the church. Hence, in this way, it needs to emphasize strategy development to encourage capacity of community rather than individual.

Our study has several limitations which may affect the interpretation of results. First, our participants were limited aged 40 to 59. According to recent guideline for cervical cancer screening, it has extended the scope of target population to women who aged eighteen years or older with sexual experience. But we followed the guideline of National cancer screening program for low income group which recommends women older than forty years. For that reason, our results did not provide any information of women aged less than forty years. Second, our intervention implemented for the short term. Usually, it takes three or four years to evaluate the effectiveness of communitybased program. Third, to evaluate, we performed pre and post tests using self-reported questionnaires. We could not exclude information bias, and then even though our results showed the effectiveness of behavior change, it was difficult to generalize the results to other population.

V. Conclusion

Cervical cancer screening program is more important issue than ever in primary health care. The experts in public health continue to be charged with eliciting risk beliefs from population, as well as communicating risk information about strategies for cervical cancer prevention. Pap test is now a widely accepted screening for cervical cancer. Recent studies have addressed influence of the cognitivebehavioral factors to cervical cancer screening. These psychological factors often lead to promote screening behaviors among target population.

Therefore, this study suggested that cervical cancer screening behavior could be changed by tailored messages which had developed with cognitive-behavioral factors. The stages-matched educational program was effective to promote screening adherence for

cervical cancer. To improve the screening rate continually, it is necessary to develop advanced strategies manage to the stages-matched educational program, such as standardized module for behavior classification, effective delivery system for educational materials, and development of communication multi-channels. Furthermore, should be established the it expert information system for cervical cancer screening and the partnership to collaborate between public and private health organizations for women's preventive health care.

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ABSTRACT

Background: Even though cervical cancer poses a significant global cancer burden, successful implementations for early detection offer an opportunity to prevent deaths and reduce the cancer burden. In Korea, cervical cancer is the most prevalent type of cancer among adult women, but it is one of the few cancers in which a consensus-approved screening test exists for early diagnosis, Pap test, that can be combined with highly efficacious treatment regimens for early-stage disease.

Purpose: This study was carried out to identify the cognitive-behavioral factors associated with cervical cancer screening behavior among adult women, aged 40 to 59, and to develop tailored messages and to evaluate the effectiveness of stage-matched educational program.

Method: A total of 283 women who aged 40 years or older was recruited in Seoul, from September, 1st to November, 14th, 2003. The intervention group (N=162) and the control group (N=121) were selected from five sub-districts in Seocho-gu, Seoul. Building on the TTM, a quasi-experimental study was conducted to test the effectiveness of stages-matched intervention addressed at the five stages of cervical cancer screening behavior. Women in the intervention group were randomly assigned to one of two conditions, internet or postal services.

Results: In our results, 88.9% of participants had received a Pap test at least once in their life-time, and 65.4% had got it in the past two years. With regard to cognitive-behavioral factors, the stages-matched educational program increased attitude and process of change for cervical cancer screening. The percentage changed was the largest in maintenance stage. With regard to delivery methods for tailored messages, the print materials were more effective at increasing screening adherence than the e-mail. Whereas the postal service group showed remarkable the change of behavior stage, the internet service group did not. Also it was not shown any difference of the satisfaction with stages-matched educational program between internet and postal service groups.

Conclusion: This study suggested that cervical cancer screening behavior could be changed by tailored messages which had developed with cognitive-behavioral factors. The stages-matched educational program was effective to promote the screening adherence for cervical cancer.

Key Words: Cervical cancer screening behavior, Pap test, Stages-matched educational program, Tailored messages, Community-based program, Women health

〈국문초록〉

일개 지역사회 여성 주민의 자궁경부암 조기검진 수검에 관한 행동변화단계별 교육 프로그램의 효과

연구 배경: 자궁경부암은 조기검진을 통해 사망률과 의료비 부담을 감소시킬 수 있는 질환으로, 아직까지 우리나라에서는 자궁경부암이 여성암 중 높은 발생률을 보이고 있으나, Pap test를 통해 자궁경부암을 조기에 발견하고, 치료할 수 있는 것으로 알려져 있다.

연구 목적: 이 연구는 자궁경부암 조기검진 수검행동에 영향을 미치는 인지-행동적 요인을 고려하여 행동변화단계별 교육 프로그램을 개발하였고, 이를 40세 이상의 여성 주민에게 적용해봄으로써 행동변화단계별 맞춤형 교육 프로그램의 효과를 평가하고자 하였다.

연구 방법: 이 연구는 서울시 서초구에 거주하는 40세~59세 사이의 여성 주민을 대상으로 2003년 9월 1일부터 11월 14일까지 자료를 수집하였으며, 서초구의 5개 지역 (동)에서 교육 중재군(162명)과 대조군(121명)을 선정하였다. 또한 행동변화단계별 교 육 프로그램은 범이론적모형(TTM)을 활용하여 개발되었고, 교육 중재군의 교육내용 전달방법으로 인터넷 서비스와 우편 서비스가 활용되었다.

연구 결과: 조사대상자중 88.9%가 일생 중 1번 이상, 65.4%가 최근 2년 동안 1번 이상 자궁경부암 조기검진을 수검한 것으로 나타났다. 행동변화단계별 교육 프로그램 의 효과를 살펴보면, 교육 후 인지 행동적 요인 중 태도와 변화의 과정이 통계적으로 유의하게 높아졌고, 행동변화단계 중 유지단계가 가장 많이 증가하였다. 교육내용 전달 방법은 인쇄된 교육자료를 활용한 우편 서비스가 인터넷 서비스보다 효과적인 것으로 나타났고, 행동변화단계별 전환 양상에서도 우편 서비스 중재군이 인터넷 서비스 중재 군보다 긍정적인 변화를 나타내었다. 한편 행동변화단계별 교육 프로그램에 관한 만족 도 평가에서는 전달방법에 따른 유의한 차이가 없는 것으로 나타났다.

결 론: 이 연구는 지역사회 여성 주민의 자궁경부암 조기검진에 관한 수검 행동을 증진시키기 위해 행동변화단계에 따른 맞춤형 교육 프로그램을 개발하여 적용하였고, 그 결과, 행동변화단계별 교육 프로그램이 자궁경부암 조기검진의 수검 행동을 증진시 키는데 효과적인 것으로 나타났다.

주제어: 자궁경부암 조기검진, 행동변화단계별 교육 프로그램, 맞춤형 메시지, 지역사회 건강 프로그램, 여성 건강