

Effects of an Educational Program about Reproductive Health Promotion on Knowledge, Attitudes and Behavior

Myung-Suk Koh¹ and Suk-Jung Han²

Department of Nursing, Sahmyook University^{1,2}
kohms@syu.ac.kr¹, hansj@syu.ac.kr²

Abstract

The purpose of this study was to examine the effects of an educational program about reproductive health promotion on knowledge, attitude, and behavior at reproductive age in Luwero district in Uganda. A single-group pretest-posttest design was used to find the effect of education. Subjects were 720 women of reproductive age (15–49 years) who lived in seven sub-counties in Luwero district. First, individuals working as midwives in the community were trained; subsequently, these individuals administered the education program to community members including the village health team. The results indicate that education affected participants' knowledge ($t = 29.58, p < .001$), attitude ($t = 25.16, p < .001$), and behavior ($t = 12.98, p < .001$) regarding family planning and reproductive health.

Keywords: Education, reproduction, knowledge, attitude, behavior

1. Introduction

Reproductive health is a state of physical, mental, and social well-being, and not merely the absence of disease or infirmity associated with reproductive organs, function, or fertility. It is a broad concept that covers all health problems related to reproductive organs and functioning including family planning, artificial abortion, venereal diseases such as AIDS, and sexual health [1].

Reproductive health care problems are extensively distributed around the world; regarding developing countries in particular, reproductive health problems such as artificial abortion, venereal diseases such as AIDS, genital mutilation, and sexual abuse are principal female health care concerns. As these problems are associated with economic and social development, education, and improvement of women's status, reproductive health is not only a term applying to the range of reproductive health of the whole lifespan of men and women, but is also a groundbreaking term that further sublimates the concept of health to the dimension of gender equality and human rights [2].

The World Health Organization (WHO) [3] has found that health education is any combination of learning experiences designed to help individuals and communities improve their health, by increasing their knowledge or influencing their attitudes. Additionally, the WHO has identified health promotion as "the process of enabling people to increase control over their health and its determinants, and thereby improve their health" [4]. Thus, education on reproductive health promotion ultimately entails correcting harmful habits and accepting beneficial habits affecting reproductive health by changing attitudes regarding the consciousness, thinking, and value judgment of the overall phenomenon by educating individuals regarding maternal health problems associated with reproductive organs and functioning.

Regarding reproductive health in Uganda, a main national cause of death in Uganda is HIV, accounting for 12% of all deaths; additionally, HIV/AIDS is the highest burdening disease, accounting for 18.7% of all disability-adjusted life years

(DALYs) [5]. According to data collected in 2011, the maternal mortality ratio is 438 persons per 100,000 births; this has not decreased in the last 20 years. The contraception rate in Uganda was 30% in 2011; between 2012 and 2013, the use of various contraceptives such as injectable contraceptives and contraceptive pills has increased the contraception rate. Nonetheless, the contraception rate was found to vary considerably by region, income disparity, and education. Additionally, the unmet demand for family planning was estimated to be 34% for 2012–2013, and juvenile gestation appeared to be higher than the average of Sub-Saharan African countries at 18%, presenting a serious problem. The total fertility rate also appeared to be very high at 6.1 children per person in 2011. When compared with the surrounding in general, Uganda's fertility rate and unmet demand for family planning are reportedly the highest, and Uganda's contraception rate is relatively low [6].

Although human health care resources are critical components of the health care system, human resources in the Ugandan health care sector exhibit both numerical shortages and quality deficiencies. Staff levels are generally very low, impeding provision of necessary health care services; in public health care, loss of staff to the private sector or abroad is critically high [7].

Countries including Korea aid underdeveloped countries; foreign aid has increased each year. Korea has become a benchmark for underdeveloped countries particularly regarding maternal and child health, as it has successfully addressed family planning and facility delivery in a short time. This research aimed to determine the effect of an educational program on reproductive health promotion among women of childbearing age in Luwero region in Uganda with the support of the Korea International Cooperation Agency; it may therefore provide basic data regarding implementing future reproductive health education programs.

This research aimed to determine the effect of a reproductive health promotion education intervention on the knowledge, attitudes, and behavior of women of childbearing age in Luwero district in Uganda. This research's specific objectives were as follows.

- 1) Determine participants' general and reproductive health characteristics.
- 2) Determine the effect of reproductive health promotion education.

2. Method

2.1 Study Design

A single-group pretest-posttest design was used.

2.2 Study Sample and Setting

As in this heading, they should be Times New Roman 11-point boldface, initially capitalized, flush left, with one blank line before, and one after. Seven hundred and twenty women participated; they lived in the following sub-counties of Luwero district in Uganda: Bamunanika, Kamira, Katikamu, Kikyusa, Makulubita, Nyimbwa, and Zirobwe.

Systematic random sampling was used to select households in villages for questionnaire administration: the chairman's home was used as a starting point, two houses were counted, and a participant was chosen from the third household. This method was used in all directions from the chairman's home to avoid bias. Twenty households were chosen from each village.

2.3 Intervention

The educational program for reproductive health promotion addressed family planning, preconception care, antenatal care, labor and delivery care, postnatal care, nutrition, breastfeeding, immunization, elimination of mother-to-child transmission, HIV/AIDS, and childhood illness. Participants participated in the program for two hours a day over four days; sessions were managed by trainees trained by nursing professionals.

First, the researchers recruited midwives, and administered reproductive health education to them; these trainees then administered the education program to community residents.

Regarding training of trainees, forty midwives were chosen by the research teams managing the program. The training course was conducted in two phases; each training phase included 20 midwives. Each phase lasted for three days; total duration was therefore six days.

2.4 Measurements

The researchers developed an instrument to examine the effects of health education in the community. The instrument contained 40 items: 20 examined knowledge, 10 examined attitude, and 10 examined behavior.

2.5 Data Analysis

Data were analyzed using SPSS v21. Variables were described using frequency and percentage or mean and standard deviation. Paired t-tests were used to identify significant differences in knowledge, attitude, and behavior at baseline and after the intervention.

3. Results

3.1 General and Reproductive Characteristics of Participants

The sample consisted of 720 participants of reproductive age (15–49 years). More than half were aged 26–49 years (58.9%, n = 424) and married (77.1%). One in ten (9.2% n = 66) had no formal education; most were farmers (73.9%, n = 532); half were satisfied with their economic status (50.7%, n = 365) (Table 1).

More than half were engaged in family planning (63.3%, n = 456); less than half had received family planning education (41.1%, n = 296). The vast majority had pregnancy and childbirth experience (94.2%, n = 678), and 19% were currently pregnant (n = 137). Of these, 74.8% were pregnant intentionally (n = 101). More than half had experience in contraceptive use (62.9%, n = 453), and 47.2% preferred Depo-Provera implants from among the various contraceptive methods (n = 339). One fifth had experienced abortion (21.1%, n = 152), predominantly in hospital (49.3%, n=75), followed by in the family residence (35.5%, n = 54) (Table 2).

Table 1. Participants' General, Pregnancy, and Delivery Characteristics (n = 720)

Variable	Category	N	(%)
Age range	15–25	296	(41.1)
	26–49	424	(58.9)
Marital status	Married	555	(77.1)
	Unmarried	94	(13.1)
	Separated	44	(6.1)

	Divorced/widowed	27	(3.7)
Education level	No education	66	(9.2)
	Elementary school	219	(30.4)
	Middle school	266	(36.9)
	High school	142	(19.7)
	College and above	27	(3.8)
Occupation	Farmer	532	(73.9)
	Teacher	36	(5.0)
	Business women/entrepreneur	44	(6.1)
	Hair dresser/tailor	14	(2.0)
	Government employee	4	(0.6)
	Housewife	76	(10.6)
	Other occupation	14	(1.9)

Table 2. Participants' Reproductive Characteristics (n = 720)

Variables	Categories	N	(%)
Family planning engaged	No	264	(36.7)
	Yes	456	(63.3)
Family planning education	No	424	(58.9)
	Yes	296	(41.1)
Pregnancy and child birth experience	No	42	(5.8)
	Yes	678	(94.2)
Current pregnancy status	No	583	(81.0)
	Yes	137	(19.0)
Current pregnancy intentional*	No	34	(25.2)
	Yes	101	(74.8)
Experience of contraceptive use	No	267	(37.1)
	Yes	453	(62.9)
Contraceptive methods*	Depo-Provera implant	339	(47.2)
	Oral contraceptives	98	(13.6)
	Male condoms	47	(6.5)
	Calendar method	28	(3.9)
	Withdrawal method	12	(1.7)
	Tubal ligation	7	(1.0)
	Contraceptive gels	4	(0.6)
	Emergency contraceptives	4	(0.6)
	IUD	3	(0.4)
	Other method	3	(0.4)
Experienced abortion	No	568	(78.9)
	Yes	152	(21.1)
Abortion place***	Hospital	75	(49.3)
	Family residence	54	(35.5)
	Health center	10	(6.6)
	Clinic	9	(5.9)
	Other location	2	(1.3)
	No response	2	(1.3)

*pregnant women only

**multiple choice

***abortion-experienced women only

3.2 The Effect of the Educational Program of Reproductive Health Promotion

A dependent t-test identified a significant difference in knowledge, attitude, and behavior scores before and after the educational intervention ($p < .001$). This study therefore found that the intervention positively affected participants' knowledge, attitude, and behavior regarding family planning and reproductive health (Table 3).

Table 3. Comparison of Participants' Knowledge, Attitude, and Behavior between Pre- and Post-intervention (n = 720)

Variables	Pre-test	Post-test	Difference	t	p
	Mean ± SD	Mean ± SD	Mean ± SD		
Knowledge	13.04 ± 2.62	16.43 ± 1.91	3.39 ± 3.07	29.58	<.001
Attitude	20.96 ± 3.79	25.09 ± 3.67	4.13 ± 4.40	25.16	<.001
Behavior	25.39 ± 4.57	27.61 ± 1.90	2.22 ± 4.59	12.98	<.001

3.3 Difference Verification of Questionnaire Items Examining Knowledge Before and After the Program

The rates of correct responses to the 20 questionnaire items examining participants' knowledge were diverse before the program's administration, ranging from 32.9% (item 9) to 94.6% (item 13). After the program, they ranged from 56.9% (item 8) to 94.6% (item 13). Rates of correct responses increased significantly in all examined topics (Table 4).

Table 4. Comparison of Knowledge between Pre- and Post-test (n = 720)

Contents	Pre-test			Post-test			McNemar
	Yes	No	Don't know	Yes	No	Don't know	
1. Family planning is the intentional planning of the number of children to have and the appropriate control of childbirth	620 (86.1)	37 (5.1)	63 (8.8)	713 (99.0)	3 (0.4)	4 (0.6)	87.5*
2. Family planning benefits the health of the mother and the child	645 (89.6)	35 (4.8)	40 (5.6)	712 (98.9)	8 (1.0)	1 (0.1)	56.6**
3. HIV-negative females do not have to engage in family planning	183 (25.4)	436 (60.6)	101 (14.0)	67 (9.3)	644 (89.4)	9 (1.3)	170.4**
4. Breast-feeding consistently prevents pregnancy	330 (45.8)	300 (41.7)	90 (12.5)	539 (74.9)	152 (21.1)	29 (4.0)	123.8**
5. Many women die during pregnancy or childbirth	588 (81.7)	74 (10.3)	58 (8.0)	650 (90.3)	62 (8.6)	8 (1.1)	48.7**
6. Ugandan women give birth to seven children on average	415 (57.6)	184 (25.6)	121 (16.8)	605 (84.0)	85 (11.8)	30 (4.2)	135.3**
7. HIV-positive women should not give birth to children	261 (36.2)	405 (56.3)	54 (7.5)	101 (14.0)	611 (84.9)	8 (1.1)	149.2**
8. Among the natural contraceptive methods, the calendar method is the most effective	200 (27.8)	269 (37.4)	251 (34.8)	261 (36.3)	410 (56.9)	49 (6.8)	160.8**
9. Among the contraceptive methods, the condom also prevents cancer	237 (32.9)	182 (25.3)	301 (41.8)	548 (76.1)	116 (16.1)	56 (7.8)	287.6**
10. If a woman is taking oral contraceptives, she must conduct a monthly breast self-examination	360 (50.0)	83 (11.5)	277 (38.5)	677 (94.0)	30 (4.2)	13 (1.8)	302.7**
11. Maternal women should not administer tetanus toxoid immunization	288 (40.0)	380 (52.8)	52 (7.2)	121 (16.8)	585 (81.3)	14 (1.9)	131.6**
12. If a maternal woman engages in drinking and smoking during pregnancy, the child will be born underweight	536 (74.4)	71 (9.9)	113 (15.7)	694 (96.4)	19 (2.6)	7 (1.0)	140.4**
13. If a woman experiences severe	681	18	21	710	9	1	25.0**

headaches during pregnancy, she should visit the doctor	(94.6)	(2.5)	(2.9)	(98.6)	(1.3)	(0.1)	
14. A decrease in fetal movement is a dangerous symptom	641 (89.0)	45 (6.3)	34 (4.7)	704 (97.8)	10 (1.4)	6 (0.8)	51.1**
15. During pregnancy, the mother and the child must not be exposed to bacteria	593 (82.4)	90 (12.5)	37 (5.1)	665 (92.4)	54 (7.5)	1 (0.1)	50.6**
16. Newborns should be given water to drink in between breast feeding for the first six months of their life	410 (57.0)	258 (35.8)	52 (7.2)	156 (21.7)	562 (78.1)	2 (0.2)	259.1**
17. If the navel of the newborn is red or discharges a yellow fluid, the newborn should be taken to a doctor	651 (90.4)	52 (7.2)	17 (2.4)	683 (94.9)	35 (4.8)	2 (0.3)	19.8**
18. A breastfeeding mother must avoid intake of animal proteins (meat, fish, milk and eggs)	157 (21.8)	513 (71.3)	50 (6.9)	53 (7.3)	663 (92.1)	4 (0.6)	113.5**
19. Polio vaccines are administered four times	484 (67.3)	122 (16.9)	114 (15.8)	690 (95.8)	23 (3.2)	7 (1.0)	200.7**
20. If the parents are HIV-negative, the child will be infected with HIV	227 (31.5)	405 (56.3)	88 (12.2)	104 (14.4)	602 (83.7)	14 (1.9)	136.8**

Bold character: reverse items

*p<.05; **p<.01; ***p<.001

3.4 Difference Verification for Questionnaire Items Examining Attitudes Before and After the Program

Regarding participants' degree of agreement with each of the 10 question items examining participants' attitudes, before the program, the response "strongly agree" was most frequently given to item 10 (38.1%), and the response "agree" ranged from 39.4% (item 1) to 67.5% (item 5). After the program, these rates positively changed from 50.2% (item 4) to 68.2% (item 1) regarding "strongly agree," and items previously answered as "agree" tended to attract the response "strongly agree." Analysis identified statistically significant positive differences for every item (Table 5).

Table 5. Comparison of Attitude Responses Between Pre-and Post-Test (n = 720)

Contents	Pre-test					Post-test			McNemar
	Strongly disagree	Disagree	Agree	Strongly agree	Strongly disagree	Disagree	Agree	Strongly agree	
1. Artificially controlling the number of children is shameful	267 (37.2)	284 (39.4)	127 (17.6)	42 (5.8)	491 (68.2)	172 (23.9)	31 (4.3)	26 (3.6)	173.8**
2. Family planning is necessary for the physical and emotional development of children	34 (4.7)	87 (12.1)	449 (62.4)	150 (20.8)	14 (1.9)	16 (2.3)	374 (51.9)	316 (43.9)	123.6**
3. Family planning is necessary for the appropriate distribution of resources (water, food, etc.)	24 (3.3)	69 (9.6)	471 (65.4)	156 (21.7)	9 (1.3)	10 (1.4)	366 (50.8)	335 (46.5)	138.3**
4. To engage in sexual intercourse without the risk of pregnancy, family planning is necessary	34 (4.7)	87 (12.1)	433 (60.1)	166 (23.1)	6 (0.8)	26 (3.6)	327 (45.4)	361 (50.2)	150.6**
5. Maternal women should be protected by others during their pregnancy	28 (3.9)	59 (8.2)	486 (67.5)	147 (20.4)	3 (0.4)	34 (4.7)	403 (56.0)	280 (38.9)	89.5**
6. Maternal women should periodically visit	30 (4.2)	36 (5.0)	445 (61.8)	209 (29.0)	5 (0.7)	7 (1.0)	314 (43.6)	394 (54.7)	143.3**

the doctor										
7. Newborns should be fed with colostrum	37 (5.1)	81 (11.3)	374 (51.9)	228 (31.7)	7 (0.9)	5 (0.7)	238 (33.1)	470 (65.3)	223.0**	
8. It is necessary to take monthly measurements of a newborn's height and weight	20 (2.8)	22 (3.1)	460 (63.9)	218 (30.2)	1 (0.1)	3 (0.4)	333 (46.3)	383 (53.2)	116.9**	
9. Even a healthy child requires immunization	35 (4.9)	33 (4.6)	373 (51.7)	279 (38.8)	6 (0.8)	12 (1.7)	228 (31.7)	474 (65.8)	138.8**	
10. HIV-positive mothers should not care for their children	274 (38.1)	260 (36.1)	136 (18.9)	50 (6.9)	488 (67.8)	209 (29.0)	15 (2.1)	8 (1.1)	218.1**	

Bold character: reverse items

*p<.05; **p<.01; ***p<.001

3.5 Difference Verification for Questionnaire Items Examining Behavior Before and After the Program

Among the 10 question items examining behavior, participants' willingness to perform each item before the program varied widely. The response "always will do" ranged from 29.7% (item 7) to 86.3% (item 5); although its range was from 37.2% (item 7) to 98.3% (item 5) at post-test, most participants showed willingness of over 90% (Table 6).

Table 6. Comparison of Behavior Responses between Pre- and Post-Test (n = 720)

Contents	pre-test				post-test				McNemar
	Always will do	Often will do	Seldom will do	Will not	Always will do	Often will do	Seldom will do	Will not	
1. I will plan the number of children I will have prior to marriage	490 (68.1)	114 (15.8)	49 (6.8)	67 (9.3)	623 (86.5)	62 (8.6)	33 (4.6)	2 (0.3)	111.5**
2. I will use contraceptive methods including condoms, contraceptive drugs, and other devices to prevent unintended pregnancies	520 (72.2)	110 (15.3)	53 (7.4)	37 (5.1)	649 (90.1)	64 (8.9)	7 (1.0)	0 (0.0)	100.0**
3. I will conduct family planning so that my children can receive better health care and educational services	566 (78.6)	91 (12.6)	48 (6.7)	15 (2.1)	670 (93.1)	41 (5.7)	7 (1.0)	2 (0.3)	76.2**
4. I will use condoms to prevent sexually transmitted diseases such as HIV/AIDS	485 (67.4)	111 (15.4)	61 (8.5)	63 (8.8)	626 (86.9)	68 (9.4)	17 (2.4)	9 (1.3)	113.1**
5. I will ensure that my child is vaccinated to protect him/her from diseases such as polio, tuberculosis and measles	621 (86.3)	52 (7.2)	27 (3.8)	20 (2.8)	708 (98.3)	7 (1.0)	4 (0.6)	1 (0.1)	73.9**
6. If my child cannot consume milk or breast milk well, I will take my child to the doctor	556 (77.2)	83 (11.5)	46 (6.4)	35 (4.9)	694 (96.4)	19 (2.6)	2 (0.3)	5 (0.7)	128.5**
7. I will not breast feed if I am infected with HIV	315 (43.8)	138 (19.2)	53 (7.4)	214 (29.7)	180 (25.0)	169 (23.5)	103 (14.3)	268 (37.2)	67.3**

8. If I become pregnant I will take anti-malarial medication	598 (83.1)	55 (7.6)	41 (5.7)	26 (3.6)	688 (95.6)	23 (3.2)	4 (0.6)	5 (0.7)	72.1**
9. If I become pregnant I will regularly measure my blood pressure and weight	603 (83.8)	57 (7.9)	51 (7.1)	9 (1.3)	707 (98.2)	10 (1.4)	2 (0.3)	1 (0.1)	98.1**
10. If am experiencing bleeding from the vagina, then I will visit the doctor	613 (85.1)	48 (6.7)	32 (4.4)	27 (3.8)	707 (98.2)	7 (1.0)	4 (0.6)	2 (0.3)	82.9**

Bold character: reverse items

*p<.05; **p<.01; ***p<.001

4. Discussion

This research aimed to verify a reproductive health promotion education program's effect on reproductive health-related knowledge, attitudes, and behavior among local residents of childbearing age in Luwero region in Uganda.

In this research, participants' knowledge, attitudes, and behavior significantly increased after the program's completion. No earlier research has examined this topic, preventing comparison; however, preceding research examining adolescents in Uganda [8] and married immigrant females [2] has observed significant improvements in knowledge, attitudes, and behavior after educational interventions [9].

Reproductive health behavior involves correcting harmful habits and accepting beneficial habits affecting health problems associated with reproductive organs and functioning, reproductive system diseases and disorder, gestation and birth, family planning, artificial abortion, venereal diseases such as AIDS, and sexual health [1, 10].

Health equity is globally regarded as a basic human right; additionally, addressing poverty and health problems in underdeveloped countries is a Millennium Development Goal and therefore set as an issue for the global community to address collaboratively. In this context, interest in international health care is growing in Korea.

Among expenditure on the entire Ugandan health care sector in 2009–2010, public finances accounted for 22%, private finances 50%, and other external finances appeared to account for 34%. Specifically, as co-insurance accounted for 88% of private finances, expenditure is at a seriously low level [11]. Due to the lack of medical staff and finance, Uganda has established Village Health Teams (VHTs) that provide services at the lowest level of the health care service delivery system. VHTs operate a non-political service delivery structure comprised of 4–5 members in each region; members are elected by voting in the village and perform unpaid work. Each village health care agent manages the health of 25–30 households in the village. Specific functions of VHTs include home visits, community mobilization for health care service utilization, health promotion education, local community case management of some diseases, follow-up management of women during gestation, follow-up management and evacuation of newborns after birth, follow up management of patients discharged after long term treatment, distribution of healthcare products, local community information management, and disease surveillance [5].

Local midwives were trained to deliver the educational program to local residents in order to use the VHT healthcare delivery system. VHT agents who received reproductive health promotion education thereby may be able to detect various diseases in their early stages, facilitating prevention and treatment. In performing regular and frequent reproductive health promotion education targeting community members, VHTs were found to effectively deliver community-based services.

References

- [1] “The International Conference on Population and Development”, Programme of Action of the International conference on Population Development, Chapter VII: Reproductive rights and reproductive health. Cairo, EG:, (1994), http://www.unfpa.org/sites/default/files/pubpdf/programme_of_action_Web%20ENGLISH.pdf.
- [2] M. N. Park, “Development and effects of reproductive health program for married female immigrants: Based on Cox’s interaction Model”, Gyeongsang National University, Doctoral dissertation, (2013).
- [3] “World Health Organization”, Health education, http://www.who.int/topics/health_education/en/.
- [4] “World Health Organization. Participants at the sixth Global Conference on Health Promotion”, The Bangkok Charter for health promotion in a globalized world. Geneva, Switzerland: World Health Organization, (2005) August 11.
- [5] “Korea International Cooperation Agency, World Friends. African regional health-disciplinary cooperation plan study series six: Uganda case”, (2014) August, <http://www.dbpia.co.kr/Journal/PDFView?id=NODE06344775>.
- [6] “Ministry of Health Uganda. Mid-term Analytical Review of Performance of the health Sector Strategic and Investment Plan”, 2012/11–2014/15, vol. 2, (2013a).
- [7] “Ministry of Health Uganda. Mid-term Analytical Review of Performance of the health Sector Strategic and Investment Plan” 2012/11–2014/15, vol. 1, (2013b).
- [8] H. T. Wolf, H. G. Teich, B. L. Halpern-Felsher, R.J. Murphy, N. Anandaraja, J. Stone and C. Kalumuna, “The effectiveness of an adolescent reproductive health education intervention in Uganda”, *Int J Adolesc Med Health*, (2015) September, doi:10.1515/ijamh-2015-0032.
- [9] M. S. Koh and S. J. Han, “Effect of Mother-Child Health Improvement Education for the Community of Luwero District in Uganda”, *Proceedings of Advanced Science and Technology Letters*, (2015) December 14-16, pp. 61-64, Jeju, Korea.
- [10] S. Damrosch, “General strategies for motivating people to change their behavior”, *Nurs Clin North Am*, vol. 26, no. 4, (1991), pp. 833–843.
- [11] “Ministry of Health, Uganda”, Annual Health Sector Performance Report FY 2012/2013, (2013c).

Authors



Myung-Suk Koh

1995 ~ current: Professor
Dept. of Nursing, Sahmyook University, Seoul, Korea,
E-mail: kohms@syu.ac.kr



Suk-Jung Han

1999 ~ current: Professor
Dept. of Nursing, Sahmyook University, Seoul, Korea
E-mail: hansj@syu.ac.kr

