

# **HEALTH EDUCATION PROGRAM FOR PREVENTION OF IRON DEFICIENCY ANEMIA AMONG PREGNANT WOMEN MUANG DISTRICT KRABI PROVINCE**

**Manirat Terawiwat\***

**Nirat Imamee\***

**Amitta Janchaum\*\***

*Mahidol University*

## **ABSTRACT :**

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\* Department of Health Education and Behavioral Sciences, Faculty of Public Health, Mahidol University.

\*\* Department of Nursing, Krabi Hospital, Krabi Province, Thailand.

The main purpose of this quasi-experimental study was to assess the effectiveness of a health education program on the prevention of iron deficiency anemia among pregnant women. Health Belief Model and social support concepts were applied to develop the program interventions which consisted of lecture with video, group discussion, demonstration and practice modeling and reminders given by village health volunteers. Thirty six pregnant women were selected and assigned into the experimental group, while 34 women were assigned into the comparison group. The experimental group was required to attend the health education program 3 times. Data were collected before and after the experiment through interview questionnaires.

The results of this study show that the knowledge on iron deficiency anemia, the perceived severity and susceptibility about iron deficiency anemia and the preventive behaviors of the study women were significantly improved. Thus, this study program might be useful in health promotion programs for pregnant women in rural communities.

## Introduction

Anemia is a major health problem among Thai pregnant women. It is the condition in which the body has red blood cells lower than normal.<sup>1</sup> Most of the anemia cases in Thailand are iron deficiency anemia. The common causes of the iron deficiency anemia are chronic blood lost from hookworm infection, the body does not get enough ferrous and the body needs more ferrous than usual especially during pregnancy.<sup>2</sup> The obvious symptoms of the anemia are pale, tire and having low resistant to some diseases. Anemia condition is the high risk factor of premature birth and lossing blood during labour. It also affect the growth and development of the baby and it is a major cause of his low birth weighth.

Report on the survillance of the anemia among pregnant women conducted by the Department of Health, Ministry of Public Health of Thailand indicated that during 1992 to 1996 the Southern part of the country has the highest prevalence rate of anemia.<sup>3</sup> From the first and the second quarter reports of 1998, among provinces in Region 11, Krabi was ranked second and first on anemia prevalence rate (18.9%).<sup>4</sup> Thus, a health education program was developed to promote pregnant mother's preventive behaviors related to iron deficiency anemia. Health Belief Model and social support were used as a basic concepts to design the content and the activities of the program. Village health volunteers were chosen to provide social support to the mothers.

## Objectives of the study

The main objective of this study was to

assess the effectiveness of the designed health education program on prevention of iron deficiency anemia among pregnant women in Muang distric, Krabi province. More specifically, the study was designed for the experimental group to increase

- the essential knowledge about the prevention of iron deficiency anemia.
- the favorable perception on severity and susceptibility about iron deficiency anemia.
- the desirable preventive behaviors of iron deficiency anemia regarding taking ferrous tablet and food consumption.

## Procedure

The study design of this research was quasi-experimental research with pretest and posttest. The experimental and the comparison area were randomly selected from Tambols (sub-district) of Muang district which had high prevalence rate of iron deficiency anemia. From the study areas, the study samples were then chosen through certain criteria. As a result, 36 pregnant women were in the experimental group and 34 women were in the comparison group.

The experimental group were required to attend the program activities once a month, on the day they were scheduled to visit the ANC clinic, for three months.

On the first visit, the experimental samples were interviewed and took a haematocrit test. Then, the information about iron deficiency anemia was provided by small group teaching. The perceived susceptibility and severity of the anemia in pregnant women were presented through video-tape

**Table 1** Number and percentage of the study groups by demographic variables and haematocrit Level.

	<b>Experimental Group</b>		<b>Comparison Group</b>	
	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>
<b>Age (years)</b>				
15 - 20	8	22.2	7	20.6
21 - 25	7	19.4	11	32.4
26 - 30	10	27.8	12	35.3
31 - 35	6	16.7	3	8.8
36 - 40	5	13.9	1	2.9
<b>Total</b>	<b>36</b>	<b>100.0</b>	<b>34</b>	<b>100.0</b>
<b>X</b>	<b>26.8</b>		<b>25.1</b>	
<b>S.D.</b>	<b>6.95</b>		<b>4.61</b>	
<b>Religion</b>				
Buddhism	8	22.2	32	94.1
Islam	28	77.8	2	5.9
<b>Education</b>				
Primary	27	75.0	24	70.6
Secondary	4	11.1	10	29.4
Vocational	3	8.3	0	0.0
Bachelor	2	5.6	0	0.0
<b>Occupation</b>				
House wife	21	58.3	7	20.6
Farming	5	13.9	22	64.7
Small Trading	4	11.1	1	2.9
Labour	6	16.7	4	11.8
<b>Week of pregnancy</b>				
16	12	33.3	12	35.3
20	7	19.4	3	8.8
24	7	19.4	5	14.7
28	3	8.3	5	14.7
32	7	19.4	9	26.5
<b>No. of pregnancy</b>				
1	16	44.4	15	44.1
2	14	38.9	12	35.3
3	6	16.7	7	20.6
<b>Haematocrit Level</b>				
≥ 33% normal	30	83.3	26	76.5
< 33% Below normal	6	16.7	8	23.5

**Table 2** t-test for the Study Groups' Knowledge, Perception and Preventive Behaviors after the Experiment.

	n	$\bar{X}$	S.D.	t-value	df	p-value
<b>Knowledge</b>						
Experiment Group	36	7.81	1.31	2.17	68	0.033
Comparison Group	34	7.12	1.34			
<b>Perceived Susceptibility</b>						
Experiment Group	36	29.08	2.59	4.19	68	< 0.001
Comparison Group	34	26.53	2.50			
<b>Perceived Severity</b>						
Experiment Group	36	36.58	3.26	1.71	68	0.092
Comparison Group	34	35.29	3.04			
<b>Perceived Cost-Benefit</b>						
Experiment Group	36	38.53	3.37	1.44	68	0.154
Comparison Group	34	39.56	2.54			
<b>Preventive Behaviors</b>						
Experiment Group	36	18.94	1.76	0.86	68	0.391
Comparison Group	34	18.58	1.69			

**Table 3** Proportion for the Study Groups Haematocrit level after the Experiment.

	n	No. Hct increase	proportion	Z-test	P-value
<b>Haematocrit Level</b>					
Experimental Group	36	14	0.39	0.42	0.337
Comparison Group	34	15	0.44		

and group discussion. The samples also received a leaflet, food eating and ferrous pill taking record form to write their daily eating behavior while they were at home. This session lasted about one hour and a half.

The experimental group also got the haematocrit test and received the same information on the second and the third visit as they did on the first visit. Beside the above activities, a pregnant woman, who was a good model for the prevention of iron deficiency anemia, was invited to discuss with the study group on the second visit. While, on the third visit, the study samples were asked to prepare a good menu which has high ferrous.

The result of the haematocrit test on each visit was used for each sample self evaluation about her compliance behavior. The same structured interview questionnaire was used to collect the data at the end of experiment. Descriptive statistics were used to handle the raw data and SPSS/PC<sup>+</sup> was used in the statistical analysis (student's t-test).

## Results of the study

1. The experimental and the comparison group had similar characteristics namely their age, educational level, occupation, week of pregnancy, number of pregnancy and haematocrit level (Table 1)

2. After the experiment, the experimental group gained significantly more knowledge about iron deficiency anemia than before the experiment and than the comparison group. (Table 2)

3. The perception of the experimental group on severity and susceptibility about the iron deficiency anemia as well as their perception on cost-benefit in performing compliance health behaviors were significantly improved. (Table 2)

4. The preventive behaviors, food eating practices and taking ferrous pills, of the experimental group were significantly better than before the experiment. (Table 2)

5. It was found that the haematocrit level of the two groups were not significantly different. (Table 3)

## Discussion

The results of this study showed clearly that the health education program, based on concepts of Health Belief Model and social support, plus the supportive from village health volunteers can increase the knowledge and the perception of the study samples.<sup>5</sup> Even though the preventive behaviors of the two groups were not significantly different, but the behaviors of the experimental group at the end of the experiment was significantly better than before the experiment. However, this program study could not significantly increase the haematocrit level of the study groups. This can be explained by the high haematocrit level of the groups before the experiment and the experimental group were required to attend the program for only three visits. Thus, it is recommended the program should be extended and it should start at the early week of pregnancy.

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