

Effect of Health Teaching Sessions on Women's Knowledge Regarding Selected Danger Signals During Pregnancy

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Abstract

Background: Pregnant woman may face the risk of sudden, unpredictable complications called danger signals that could potentially be life threatening to the mother or her fetus. Raising women's awareness about danger signals through antenatal health teaching sessions improved identification and early detection of problems.

Aim of Study: The effect of health teaching sessions on women's knowledge regarding selected danger signals during pregnancy. Hypothesis: (H1) women who receive health teaching sessions regarding selected danger signals during pregnancy will show higher knowledge scores in posttests than in their pretest. (H2) Women who receive health teaching sessions regarding selected danger signals will exposed to less danger signal.

Subjects and Methods: Design: One group pre-posttest quasi experimental design. Sample: Purposive sample of 150 primigravida pregnant women who free from any medical or obstetrical problem, their gestational age from 20 to 36wks Setting: Data was collected from June, 2016 to January, 2017 at Antenatal outpatient clinic in Obstetrics and Gynecology, Cairo University Hospitals Tool: Semi-structured interview schedule to collect data related to socio-demographic characteristics, Pre-posttest questionnaire for assessment of knowledge related to selected dangerous signal and follow-up questionnaire.

Results: Women's age ranged from 18 to 35yrs with different level of education. Total knowledge score of all posttests was highly statistically significant difference than pretest ($p < 0.0001$).

Conclusion: The current study findings concluded that health teaching sessions had an effect on increasing women's knowledge regarding danger signals during pregnancy which will help in early detection & control the dangerous symptoms and complications that may arise during pregnancy progress.

Key Words: Danger signals– Health teaching.

Introduction

PREGNANCY is a normal physiological event which involve a variety of physical and psycholog-

ical changes but it might progressed into unexpected complications that expose both of women and her fetus to threats and associated morbidities [1]. These complications called danger signals during pregnancy which considered symptoms that indicate risk and are easily recognized by the woman and her family that include the following: Vaginal bleeding; recurrent frontal headache associated with blurring of vision; swelling of face, feet and hands; sudden decrease or absence of fetal movement; sudden escape of fluid from the vagina; persistent severe vomiting; fits and high grade fever [2,3,4].

World Health Organization (WHO) [5], which reported that direct obstetrical complications are the main causes of maternal deaths which involve bleeding as the first cause; globally, Hemorrhage either antepartum, intra-partum, and postpartum hemorrhage is the leading cause of maternal mortality, accounting for approximately 27% of deaths worldwide. Vaginal bleeding is observable signals which reported by pregnant women and considered as alarming signs that need immediate intervention to avoid unpredicted complications as mal-presentation, premature labor, Postpartum hemorrhage (PPH), sepsis, shock and retained placenta [6].

Gabal [7] defined gestational hypertension or pregnancy induced hypertension (PIH) as "development of new hypertension in pregnant women after 20 weeks gestation without the presence of protein in the urine or other signs of preeclampsia" and estimate the incidence of hypertensive diseases of pregnancy in Egypt (4.2%) had pregnancy induced hypertension, 3.8 % of them had preeclampsia and eclampsia was (0.3%). Any pregnant women should be aware of these signs like; severe headache, blurring vision or flashing before the eyes, severe pain just below the ribs, vomiting and sudden

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swelling of the face, hands or feet as these symptoms indicate pregnancy induced hypertension or deteriorated to preeclampsia or toxemia.

Education through antenatal health teaching for pregnant mother according to each trimester as minor discomfort during pregnancy, adequate nutrition and supplementation, danger signals, planning for birth setting, family planning, breast feeding are important activities provided through antenatal care (ANC) in addition to screening and counseling to maintain health pregnancy, so ANC provide opportunity for discussing expected complications that might be happened and expected health seeking behavior to deal with it [8].

Significance of the study:

Antenatal classes in the form of health education about antenatal care help pregnant women to have safe and healthy period of motherhood. So, this study finding will contribute to improving health care, identifying early danger signals, prevent further complications, and change hospital policy to activate regular antenatal classes provided by hospital staff and improving pregnancy outcomes.

A study conducted by Rashad and Essa [9] about Women's Awareness of Danger Signs of Obstetrics Complications in Alexandria revealed that 26.5% of study sample were unaware of pregnancy danger signs, so awareness of the danger signals of pregnancy is the first step to seek appropriate and timely referral to health care facility and reduce maternal morbidity, so raising pregnant women's awareness about danger signals through antenatal classes provided by health care provider will improve early detection of problems and reduces the delay in deciding to seek obstetric care.

Counseling intervention in the form of health education by health care providers plays vital role for women during childbearing period of their lives in providing information to allow the woman and her partner to make an informed decision, in addition, supporting women and their families through encourage her to answer questions, provide anticipatory guidance and counsel during the pregnancy and to make appropriate community referrals to meet the needs of these women to report any health problem and foster well-being of pregnant women and their fetuses [10].

Operational definition:

Selected danger signals: Selected danger signals in the current study means vaginal bleeding (early, late) and blood pressure elevation during pregnancy

Aim of the study:

The aim of this study was to investigate the effect of health teaching sessions on women's knowledge regarding selected danger signals during pregnancy.

Research hypothesis:

To achieve the aim of the current study the following hypothesis were formulated as:

- H1- Women who receive health teaching sessions regarding selected danger signals during pregnancy will have higher knowledge scores in posttests than in their pretest.
- H2- Women who receive health teaching sessions regarding selected danger signals will exposed to less danger signals.

Patients and Methods

Research design:

One group pre-posttest quasi experimental design adopted in this study to achieve the stated aim.

Sample:

Purposive sample of 150 pregnant women recruited for the current study according to the following inclusion criteria: Primigravida who can read and write, free from any medical or obstetrical problems and gestational age from twenty to thirty six weeks of gestation as most common pregnancy disorders were developed. Exclusion criteria: Pregnant women who attend previous similar training or with psychological disorders and on antipsychotic drugs were excluded.

Setting:

The study conducted at outpatient antenatal clinic in El-Kasr Al-Ainy Obstetrics and Gynecology Hospital affiliated to Cairo University Hospitals.

Tools for data collection:

Three tools were used for data collection: A semi-structured interview schedule, Pre-posttest and follow-up questionnaire were developed by the investigator based on extensive review of relevant literatures:

- 1- *Semi-structured interview schedule:* It included (5) items which elicit data related to women's identification and socio-demographic characteristics (age, place of residence, educational level, occupation and nature of work).

2- *Pre -posttest questionnaire: Consists of three parts as following:*

- a- General questions about types of danger signals during pregnancy (ten questions).
- b- Questions related to causes of vaginal bleeding during pregnancy (six questions).
- c- Questions related to blood pressure elevation during pregnancy (eight questions), so total questions are (24) questions.

Scoring system: Each question was to be checked as correct or incorrect answer, these was scored one and zero respectively. The total knowledge score calculated by (23) questions $\times 1 = 23$ score and one question has three choices with two scores, so total knowledge score is (25 marks) which categorized as following: The total score of knowledge less than or equal 50% was considered as unsatisfactory level of knowledge while score of 50% and more was considered as satisfactory level.

3- *Follow-up questionnaire:* It was concerned with follow-up to detect the occurrence of any of nine danger signals which may rise during current pregnancy.

Tool validity:

Developed tools submitted to five nursing experts in the field of obstetrics and gynecology after extensive review of literature to test the content and face validity. Modifications were carried out according to the expert's judgment on clarity of sentences and the appropriateness of contents.

Pilot study:

A pilot study conducted on 10% of the sample to ensure the clarity & feasibility of tools without modification added. Since no modifications were done, these mothers were included in the study sample.

Ethical consideration:

A primary approval was granted from the Ethical Research Committee at Faculty of Nursing Cairo University to undergo the current research on May, 2016. An official permission was granted from the administrative personnel in the selected setting for data collection. Informed written consent was taken from each pregnant woman who accepted to participate in the research and met the inclusion criteria, the investigator emphasized that their participation in the research is entirely voluntary, and that she has the right to withdraw at any time without giving any reason and without affecting her care. At the same time, pregnant women were

informed that the research posed no risks or hazards on their health. Measures were taken to assure confidentiality as coding of data and participants were ensured that the collected data used only for the purpose of the research.

Procedures:

The study was conducted through 4 phases: Preparation, interviewing, implementing, evaluating and follow-up phases:

1- *Preparation phase:* In this phase tool developed by the investigator and revised by five nursing expertise in maternity nursing department. The investigator constructed and prepared the study tools, designed teaching material, pictures after extensive literature review. An official permission to conduct the proposed study was obtained from the Ethical Research Committee (primary consent) in the faculty of nursing Cairo University to undergo the current study at May 2016 then contacted the medical and nursing directors of the antenatal outpatient clinic and explained the purpose of the study, benefits to women and then obtained written approval provided by medical and nursing directors to conduct the study.

2- *Interviewing phase:* The investigator introduced her to the pregnant women and explained the purpose and nature of the study to obtain informed written consent as well as to gain their cooperation. Data collected in this phase through:

A- *History taking:* The investigator interviewed pregnant women for taking Semi-structured interview schedule.

B- *Knowledge assessment:* The investigator obtained assessment of women's knowledge about selected danger signals during pregnancy as base line knowledge by using pre/posttest questionnaire. This phase took fifteen minutes.

3- *Implementing phase:* The investigator provided health teaching about selected danger signals of pregnancy using designed teaching material in simple Arabic language. It was developed and prepared by the investigator including definition, description, and women response to selected danger signals in case of its occurrence. The session was carried out in the form of individualized health teaching session. Designed teaching material in Arabic version was used to facilitate the process of teaching, and immediate posttest assessment performed after the end of health teaching session using pre/posttest questionnaire. This phase took 40 minutes.

4- *Evaluating and follow-up phase:* The second and the third time posttest carried out three weeks apart each after first posttest through phone calls using pre/posttest questionnaire. Follow-up of occurrence of any danger signals using follow-up questionnaire. This phase took twenty minutes each.

Statistical analysis: The collected data scored, tabulated and analyzed by personal computer, using statically package for social sciences (SPSS) program version 20. Descriptive as well as inferential statistical will be utilized to analyze data pertinent to the study. Level of significance set at $p < 0.05$.

Results

The Current study was carried out to investigate the effect of health teaching sessions on women's knowledge regarding selected danger signals during pregnancy, so findings of the current study will be presented in four sections.

Section I: Description of the pregnant women, Section II. Pregnant women's knowledge regarding selected danger signals during pregnancy in pre/posttest questionnaire, Section III. Effect of health teaching on women's knowledge regarding selected danger signals during pregnancy; and Section IV. Follow-up of occurrence of any danger signals during current pregnancy.

Age of the pregnant women was ranged from 18 to 35 years old, with mean of 24.25 ± 4.14 years old. Thirty eight percent of the pregnant women was in the age group $20 < 25$ years, while 12% was in the age group $30 < 35$ years. As well as, 54.7% of pregnant women lived in urban areas. Regarding level of education 38.7% can read and write 29.3% of the sample had basic (primary or preparatory) level of education, and only 12.7% had university level. In relation to occupation, 97.3% of pregnant women were housewives and 2.7% of them were worked (Table 1).

Section II: Pregnant women's knowledge regarding general danger signals during pregnancy:

Most of pregnant women had incorrect answer in almost questions in pretest while the vast majority of them had correct answer in immediate posttest, 2nd posttest and 3rd posttest. Table (2) reveals that the mean score knowledge regarding general danger signals during pregnancy is 8.1 ± 1.27 out of 10 compared to $7.69 \pm .86$ in immediate posttest, $9.06 \pm .55$ in, 2nd posttest and $8.92 \pm .74$ in 3rd posttest.

Most of pregnant women had high percent of incorrect answer in almost questions in pretest while the vast majority of them had correct answer in immediate posttest, 2nd posttest and 3rd posttest. Table (3) reveals that the mean score knowledge regarding causes of vaginal bleeding during pregnancy is 0.41 ± 0.64 out of 6 compared to 3.84 ± 0.68 in immediate posttest, 4.21 ± 0.5 in 2nd posttest and 3.86 ± 0.78 in 3rd posttest.

Results reveal that, the mean score knowledge related to blood pressure elevation during pregnancy in pretest is 1.94 ± 1.56 out of 9, while it increased to 8.23 ± 0.73 in immediate post after health teaching session, $8.63 \pm .55$ in 2nd posttest, and 7.78 ± 0.47 in 3rd posttest (Table 4).

Section III: Effect of health teaching on women's knowledge regarding selected danger signals during pregnancy:

Results reveal that, pregnant women had 100% unsatisfactory level of knowledge regarding general danger signals during pregnancy in pretest while the vast majority of them had satisfactory level of knowledge 98% in immediate posttest, 99.3% in 2nd posttest and 100% in 3rd posttest (Table 5).

In relation to level of knowledge regarding causes of vaginal bleeding during pregnancy, results reveals that pregnant women had 100.0% unsatisfactory level of knowledge in pretest while the majority of them had satisfactory level of knowledge 75.3% in immediate posttest, 93.2% in 2nd posttest and 75.6% in 3rd posttest (Table 6).

Table (1): Distribution of the pregnant women according to their socio-demographic characteristics.

Items	Freq. (n=150)	%
<i>Age:</i>		
Below 20yrs	25	16.7
20–	57	38.0
25–	50	33.3
30-35	18	12.0
Mean \pm SD = 24.25 ± 4.140		
<i>Residence:</i>		
Urban	82	54.7
Rural	68	45.3
<i>level of Education:</i>		
Read & write	58	38.7
Primary/preparatory education	44	29.3
Secondary education	29	19.3
University education	19	12.7
<i>Occupation:</i>		
House wife	58	97.3
Working	44	2.7

Table (2): Distribution of the pregnant women regarding to their knowledge related to general danger signals during pregnancy.

Type of dangerous signals	Pretest (n=150)		Immediate post test (n=150)		2nd posttest (n=148)		3rd posttest (n=128)	
	Freq	%	Freq	%	Freq	%	Freq	%
<i>Had knowledge:</i>								
Yes	46	30.7	150	100	148	100	128	100
No	104	69.3	00	00	00	00	00	00
<i>Vaginal bleeding:</i>								
Correct answer	31	20.7	133	88.7	148	100	128	100
Incorrect answer	119	79.3	17	11.3	00	00	00	00
<i>Gush of amniotic fluid:</i>								
Correct answer	14	9.3	119	81.0	146	98.6	127	99.2
Incorrect answer	136	90.7	28	19.0	2	1.4	1	0.8
<i>Swelling of hand -face:</i>								
Correct answer	12	8.0	109	72.7	134	90.5	113	88.3
Incorrect answer	138	92.0	41	27.3	14	9.5	15	11.7
<i>Continuous Headache:</i>								
Correct answer	1	0.7	76	50.7	126	85.1	112	87.5
Incorrect answer	149	99.3	74	49.3	22	14.9	16	12.5
<i>Decreased fetal movements:</i>								
Correct answer	12	8.0	133	88.7	143	96.6	122	95.3
Incorrect answer	138	92.0	17	11.3	5	3.4	6	4.7
<i>Fits:</i>								
Correct answer	00	00	107	71.3	123	83.1	104	81.3
Incorrect answer	150	100	43	28.7	25	16.9	24	18.8
<i>High grade Fever:</i>								
Correct answer	3	2.0	131	87.3	135	91.2	118	92.2
Incorrect answer	147	98.0	19	12.7	13	8.8	10	7.8
<i>Continuous vomiting:</i>								
Correct answer	00	00	122	81.9	138	93.2	114	89.1
Incorrect answer	150	100	27	18.1	10	6.8	14	10.9
<i>Severe lower abdominal pain:</i>								
Correct answer	2	1.3	74	49.3	100	67.6	76	59.4
Incorrect answer	148	98.7	76	50.7	48	32.4	52	40.6
Mean ± SD	0.81±1.270		7.69±0.86		9.06±0.55		8.92±0.74	

N.B1: Two cases in 2nd posttest were delivered so total number decreased to 148.

N.B2: Twenty two cases were delivered during 3rd posttest so total number decreased to 128.

Table (3): Distribution of the pregnant women according to their knowledge regarding causes of vaginal bleeding during pregnancy.

Causes of vaginal bleeding	Pretest (n=150)		Immediate post test (n=150)		2nd posttest (n=148)		3 rd posttest (n=128)	
	Freq	%	Freq	%	Freq	%	Freq	%
<i>Placenta previa:</i>								
Correct answer	7	4.7	134	89.3	133	89.9	113	88.3
Incorrect answer	143	95.3	16	10.7	15	10.1	15	11.7
<i>Placenta abruptio:</i>								
Correct answer	9	6.0	122	81.3	121	81.8	111	86.7
Incorrect answer	141	94.0	28	18.7	27	18.2	17	13.3
<i>Ectopic pregnancy:</i>								
Correct answer	00	00	129	86	124	83.8	107	83.6
Incorrect answer	150	100	21	14	24	16.2	21	16.4
<i>Abortion:</i>								
Correct answer	14	9.3	134	89.3	137	92.6	113	88.3
Incorrect answer	136	90.7	16	10.7	11	7.4	15	11.7
<i>Carry heavy object:</i>								
Correct answer	22	14.7	40	26.7	66	44.6	28	21.1
Incorrect answer	128	85.3	110	73.3	82	55.4	101	78.9
<i>Having aggressive sex:</i>								
Correct answer	9	6.0	17	11.3	42	28.4	19	14.8
Incorrect answer	141	94.0	133	88.7	106	71.6	109	85.2
Mean ±SD	0.41±0.640		3.84±0.68		4.21± 0.56		3.86 ±0.78	

N.B1: Two cases in 2nd posttest were delivered so, total number decreased to 148.

N.B2: Twenty two cases were delivered during 3rd posttest so total number decreased to 128.

Table (4): Distribution of the pregnant women according to their knowledge regarding blood pressure elevation during pregnancy.

Women's knowledge related to	Pretest (n=150)		Immediate post test (n=150)		2nd posttest (n=148)		3 rd posttest (n=128)	
	Freq	%	Freq	%	Freq	%	Freq	%
<i>Signs of blood pressure elevation:</i>								
Correct answer	7	4.7	95	63.3	118	79.7	104	81.3
Incorrect answer	143	95.4	55	36.7	30	20.3	24	18.8
<i>The effect of hypertension on pregnancy:</i>								
Correct answer	00	00	150	100	148	100	128	100
Incorrect answer	150	98.7	00	00	00	00	00	00
<i>Proper time for start monitoring BP:</i>								
Correct answer	20	13.3	149	99.3	147	99.3	124	96.9
Incorrect answer	130	86.7	1	0.7	1	0.7	4	1.3
<i>Relation between blood pressure elevation and fits of pregnancy:</i>								
Correct answer	00	00	150	100.0	148	100.0	128	100
Incorrect answer	150	100	00	00	00	00	00	00
<i>Fits as danger signals:</i>								
Correct answer	00	00	149	99.3	147	99.3	128	100
Incorrect answer	150	100	1	0.7	1	0.7	00	00
<i>Hand and face edema as danger signals:</i>								
Correct answer	87	58.0	149	99.3	148	100	128	100
Incorrect answer	63	42.0	1	0.7	00	00	00	00
<i>Response to edema:</i>								
Ignorance	73	49.0	00	00	00	00	00	00
Self-management	27	18	58	38.7	23	15.5	128	100
Consulting doctor	50	33.3	92	61.3	125	84.5	00	00
Mean ±SD	1.94±1.56		8.23 ±.73		8.63 ±.55		7.78±.47	

N.B1: Two cases in 2nd posttest were delivered so, total number decreased to 148.

N.B2: Twenty two cases were delivered during 3rd posttest so total number decreased to 128.

Table (5): Comparison between level of knowledge regarding general danger signals during pregnancy.

Level of knowledge	Pretest		Immediate post test		2nd posttest		3 rd posttest	
	Freq	%	Freq	%	Freq	%	Freq	%
Satisfactory	00	00	147	98	147	99.3	128	100
Unsatisfactory	150	100	3	2.5	1	0.7	00	00
Mean \pm SD	0.81 \pm 1.27		7.69 \pm 0.86		9.06 \pm 0.55		8.92 \pm 0.74	

Table (6): Distribution of pregnant women according to their level of knowledge regarding causes of vaginal bleeding during pregnancy.

Level of knowledge	Pretest (n=150)		Immediate post test (n=150)		2nd posttest (n=148)		3 rd posttest (n=128)	
	Freq	%	Freq	%	Freq	%	Freq	%
Satisfactory	00	00	113	75.3	138	93.2	96	75.6
Unsatisfactory	150	100	37	24.7	10	6.8	32	24.4
Mean \pm SD	0.41 \pm .64		3.84 \pm .68		4.21 \pm .56		3.86 \pm 0.78	

In relation to the level of knowledge regarding blood pressure elevation during pregnancy, 94.7% of pregnant women have unsatisfactory level of knowledge in pretest, compared to 100% of them have satisfactory level of knowledge during all posttests (Table 7).

Table (8) reveals that, there is a highly statistically significant difference between mean knowledge score regarding general danger signals during pregnancy in pretest and all posttests ($p < 0.0001$).

Results of knowledge comparison reveals that, there is a highly statistical significant difference between mean knowledge score regarding causes of vaginal bleeding during pregnancy in pretest and all posttests ($p < 0.0001$) (Table 9).

Results of the study reveals that, there is a highly statistically significant difference between mean knowledge score regarding blood pressure elevation during pregnancy in pretest and all posttests ($p < 0.0001$) (Table 10).

Results reveals that a highly statistically significant difference between level of knowledge regarding causes of vaginal bleeding during pregnancy in pretest and 2nd posttest as ($p < 0.0001$), in addition, there is a highly statistically significant difference between level of knowledge in pretest and 3rd posttest as ($p < 0.0001$) (Table 11).

Regarding level of knowledge related to blood pressure elevation during pregnancy, Table (12) reveals that, pregnant women had 94.7% unsatisfactory level of knowledge in pretest while all of them had satisfactory level of knowledge 100.0 % in 2nd & 3rd posttest. A highly statistically difference has been found between level of level of knowledge pretest & 2nd posttest as ($p < 0.0001$)

and in addition, there is a highly statistically significant difference between level of knowledge in pretest and 3rd posttest as ($p < 0.0001$).

In relation to total knowledge regarding selected danger signals during pregnancy, in pretest the mean knowledge score is 3.15 ± 2.299 out of 25, which indicated unsatisfactory level of knowledge, while it increased in immediate posttest to 20.50 ± 1.39 , in 2nd posttest 21.89 ± 1.05 and in 3rd posttest 19.77 ± 1.30 which indicated satisfactory level of knowledge (Table 13).

A highly statistical significant difference between total mean knowledge score regarding selected danger signals during pregnancy at pretest and all posttests ($p < 0.0001$) (Table 14).

Section IV: Follow-up of attacks of any danger signals during current pregnancy among study sample:

During monitoring of pregnant women after health teaching sessions, it was found that some cases had attacks of certain danger signals and they referred for seeking medical help either during screening of 2nd posttest or 3rd posttest. Regarding occurrence of danger signals during current pregnancy; the results of 1st follow-up reveals that 8.8% of pregnant women has continuous headache; 6.8% has vaginal bleeding; 4.7% has decreased fetal movements and 2.7% has high grade fever, severe lower abdominal pain and Continuous vomiting. During 2nd follow-up; the results reported that 7.0% of pregnant women has continuous headache; 5.5% has decreased fetal movements; 4.7% has vaginal bleeding and 0.7% has sudden gush of amniotic fluid, swelling of hand-face and continuous vomiting (Table 15).

Table (7): Distribution of pregnant women according to their level of knowledge regarding blood pressure elevation during pregnancy.

Level of knowledge	Pretest		Immediate post test		2nd posttest		3rd posttest	
	Freq	%	Freq	%	Freq	%	Freq	%
Satisfactory	8	5.3	150	100	148	100	128	100
Unsatisfactory	142	94.7	00	00	00	00	00	00
Mean ±SD	1.94±1.56		8.23±.73		8.63±.55		7.78±.47	

Table (8): Comparison between mean knowledge score regarding general danger signals during pregnancy pretest and all posttests.

Comparison	Differences		Paired t-test	
	Mean	± SD	Z	p
Pretest & Immediate posttest	6.89	1.57	53.59	<0.0001
Pretest & 2nd post test	8.24	0.11	71.00	<0.0001
Pretest & 3 rd post test	8.10	1.44	63.85	<0.0001

Table (9): Comparison between mean knowledge score regarding causes of vaginal bleeding during pregnancy pretest and all posttests.

Comparison	Differences		Paired t-test	
	Mean	± SD	Z	p
Pretest & Immediate posttest	3.433	3.433	44.20	<0.0001
Pretest & 2nd post test	3.797	3.797	49.92	<0.0001
Pretest & 3 rd post test	3.44	3.44	38.27	<0.0001

Table (10): Comparison between mean knowledge score regarding blood pressure elevation during pregnancy.

Comparison	Differences		Paired t-test	
	Mean	± SD	Z	p
Pretest & Immediate posttest	6.29	1.64	46.98	<0.0001
Pretest & 2nd post test	6.66	1.64	49.44	<0.0001
Pretest & 3 rd post test	5.92	1.63	41.13	<0.0001

Table (11): Comparison between level of knowledge regarding causes of vaginal bleeding during pregnancy pretest & 2nd posttest and 3rd posttest

Level of knowledge	Satisfactory		Unsatisfactory		Two related sample test	
	Freq	%	Freq	%	Z	p
Pretest	00	00	150	100	11.75	<0.0001
2nd posttest	138	93.2	10	6.8		
Pretest	00	00	150	100	9.798	<0.0001
3 rd posttest	96.0	75.6	31	24.4		

Table (12): Comparison between level of knowledge regarding blood pressure elevation during pregnancy pretest & 2nd posttest and 3rd posttest.

Level of knowledge	Satisfactory		Unsatisfactory		Two related sample test	
	Freq	%	Freq	%	Z	p
Pretest	8	5.3	142	94.7	11.83	<0.0001
2nd posttest	148	100	00	00		
Pretest	8	5.3	142	94.7	11.09	<0.0001
3 rd posttest	128	100	00	00		

Table (13): Distribution of the pregnant women according to their level of total knowledge regarding selected danger signals during pregnancy.

Level of knowledge	Pretest		Immediate post test		2nd posttest		3 rd posttest	
	Freq	%	Freq	%	Freq	%	Freq	%
Satisfactory	00	00	150	100	148	100	128	100
Unsatisfactory	150	100	00	00	00	00	00	00
Mean ±SD	3.15±2.299		20.50±1.39		21.89±1.05		19.77±1.30	

Table (14): Comparison between total mean knowledge score regarding selected danger signals during pregnancy pretest and all posttests.

Comparison	Differences		Paired <i>t</i> -test	
	Mean	± SD	<i>t</i>	<i>p</i>
Pretest & Immediate posttest	16.61	2.39	84.81	<0.0001
Pretest & 2 nd post test	18.70	2.59	87.54	<0.0001
Pretest & 3 rd post test	17.39	2.58	76.30	<0.0001

Table (15): Distribution of the pregnant women according to attacks of any danger signals during current pregnancy.

Items	1 st follow-up during 2 nd posttest (n=45)		2 nd follow-up during 3 rd posttest (n=31)	
	Freq	%	Freq	%
	Vaginal bleeding	10	6.8	6
Sudden gush of amniotic fluid	2	1.4	1	0.7
Swelling of hand–face	1	0.7	1	0.7
Continuous headache	13	8.8	9	7.0
Decreased fetal movements	7	4.7	7	5.5
High grade Fever	4	2.7	4	2.7
Severe lower abdominal pain	4	2.7	2	1.3
Continuous vomiting	4	2.7	1	0.7

N.B1: Two cases in 2nd posttest were delivered so total number decreased to 148.

N.B2: Twenty two cases were delivered during 3rd posttest so total number decreased to 128.

Discussion

In the current study the researcher attempted to investigate the effect of health teaching sessions on women's knowledge regarding selected danger signals during pregnancy. The study findings indicate inadequate knowledge among pregnant women related to bleeding and elevation of blood pressure during pregnancy as dangerous signals in pretest results, while after the health teaching session to these mothers proved to be effective in improving their knowledge in posttest. This leads to acceptance of the set research hypotheses.

More than one third of the pregnant women (38%) was in the age group 20<25 and Vast majority of pregnant women were housewives. These findings agreed with a study in India conducted by Mahalinga & Venkatesan [11] about "mother's knowledge of warning signs of pregnancy, labour and puerperium" in maternity centers as that ma-

ajority (78%) of mothers were house wives and age category up to 25yrs. Regarding level of education, more than one third of pregnant women can read and write (38.7%) and more than half of sample (54.7%) from urban areas. This is probably because urban areas are exposed to different health care facilities and available transportation.

The present study findings revealed that, more than two third of women didn't have any knowledge regarding general danger signals during pregnancy. The reason for this finding might be due to low emphasis of danger signs of obstetric complications during antenatal care follow-up among health service providers as timing of visit not exceed three minutes due to work overload on health care provider. The study findings is in line with a study conducted by El-Nagar, Ahmed & Belal [12] about "Knowledge and Practices of pregnant women regarding danger signs of obstetric complications" in maternal and child health centers in Tanta, Egypt on 200 pregnant women and revealed that poor level of knowledge was reported regarding danger signs of obstetric complications among pregnant women. It might be due to more than one quarter of Egyptian pregnant women didn't receive antenatal care and among those who receive antenatal care only one third of them received minimal information about danger signs of obstetric complications and where and when to seek medical assistance.

Another study conducted by Jindal [13] about "Knowledge regarding danger signs of pregnancy among antenatal mothers" in India was disagreed with the results of the current study as it revealed that 58% of the antenatal mothers had good level of knowledge regarding danger signs of pregnancy followed by 12% had very good level of knowledge and 30% of the antenatal mothers had average level of knowledge and regarding danger signs of pregnancy.

Regarding effect of conducted teaching sessions on women's awareness about vaginal bleeding, the current study revealed that women's knowledge score increase during immediate posttest, 2nd posttest and 3rd posttest than during pretest with *p*-value (*p*<0.0001) which represent high statistically significant differences. This is in line with Radoff, Levi & Thompson [14] who conducted a study about A radio-education intervention to improve maternal knowledge of obstetric danger signs in Nicaragua using pretests and posttests and the findings showed that participant knowledge about vaginal bleeding increased significantly after the intervention(*p*<0.0001).

Regarding effect of conducted health teaching sessions on women's awareness about selected danger signals as elevation of blood pressure during pregnancy, it revealed significant effect in increasing pregnant women's knowledge score during immediate posttest, 2nd posttest and 3rd posttest than during pretest with p -value ($p < 0.0001$). This study findings are in line with August [15] who conducted a study about "Effectiveness of the home based lifesaving skills training by community health workers on knowledge of danger signs, birth preparedness, complication readiness and facility delivery" among women in Rural Tanzania and showed that there was significant improvement in level of knowledge of danger signs during pregnancy in post intervention than pre intervention ($p < 0.0001$). Also, in a study mentioned before, the researcher concluded that pregnant women's knowledge about elevation of blood pressure symptoms increased significantly after intervention ($p < 0.0001$) [14].

The current study revealed that less than one third of the pregnant women (30.4%) had experienced danger signals during first follow up phase and the most danger signals experienced and recognized was continuous headache, vaginal bleeding and decreased fetal movements. As they are the most visible and observed signals compared with other signals. This is in line with a study conducted by Mwilike [16] in Tanzania about "Knowledge of danger signs during pregnancy and subsequent healthcare seeking actions among women in Urban Tanzania which reported that sixty seven (17%) out of three hundred eighty four pregnant women who experienced danger signals as edema and reduced fetal movement after identifying it and seek for medical help.

In the same context of this findings; Eittah [17] reported that edema, continuous vomiting and decreased or absence of fetal movement were the most occurred danger signals in a descriptive study which carried out in Shebien El-Kom City, Egypt about "Pregnant woman's Knowledge, reaction to danger signs of pregnancy and utilization of antenatal services" on two hundred pregnant women.

Conclusion:

The result of the study reveals that 100% of the pregnant women during the pretest only had unsatisfactory level of knowledge regarding selected danger signals during pregnancy and health teaching helped to improve their knowledge. Level of women's knowledge was unsatisfactory regarding all of selected dangerous signals which started to be raised after using health teaching session and

monitor their score of knowledge changed about two times of assessment carried out three weeks a part. The knowledge gained supported the pregnant women for early identification of problem and preventing further complications. Thus, manage and make appropriate time decisions making will promote maternal health and wellbeing.

Recommendations:

Based on the findings, the following are recommended:

- 1- An educational classes regarding danger signals during pregnancy has to be included as part of routine antenatal visit.
- 2- Health care provider should inform each pregnant women about expected complications that may face her during pregnancy.
- 3- Mass media can be used to raise the women's awareness to the dangerous signals which may affect their pregnancy.

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تأثير جلسات التثقيف الصحي على معلومات السيدات تجاه علامات الخطر المختارة أثناء الحمل

المقدمة: يعتبر الحمل حدث فسيولوجي طبيعي التي تنطوي عليه مجموعة متنوعة من التغيرات الجسدية والنفسية، وهذه التغيرات تشمل جميع أنظمة الجسم والتي تحمي الجنين وتدعم نموه، وأيضاً إعداد الأم للولادة، ولكن في بعض الأحيان قد تتطور إلى مضاعفات غير متوقعة وتتمثل في ظهور علامات الخطر أثناء الحمل والتي تتعرض لها النساء وجنينها للتهديدات والمضاعفات المرتبطة بها والتي تتمثل في: نزيف مهبلي صداع شديد مصطحب بزغلة وعدم وضوح الرؤية، تورم اليدين والقلابين والوجه، قلة أو عدم الأحساس بحركة الجنين: نزول سائل شفاف من المهبل (سائل آمنوسي)، تشنجات، ارتفاع مفاجئ في درجة حرارة الجسم، القيء المستمر، ألم شديد أسفل البطن.

هدف البحث: لذلك فإن الهدف من الدراسة الحالية هو دراسة تأثير جلسات التثقيف الصحي على معلومات السيدات تجاه علامات الخطر المختارة أثناء الحمل.

العينة ومكان البحث: تم إجراء هذه الدراسة بالعيادات الخارجية بمستشفى النساء والتوليد - القصر العيني وقد خضعت عدد ١٥٠ سيدة تم اختيارهن لإجراء هذه الدراسة أثناء فترة منتصف الحمل من الشهر الخامس إلى الشهر التاسع وقد تم جمع البيانات خلال فترة ٨ أشهر بدأت شهر يونيو ٢٠١٦ وإنتهت في شهر يناير ٢٠١٧ .

أدوات الدراسة: تم جمع البيانات الخاصة بالبحث عن طريق أداة صممت بواسطة الباحث.

استمارة المقابلة الشخصية وتتضمن الآتي: البيانات الشخصية مثل السن - محل الإقامة - مستوى التعليم - الوظيفة - طبيعة العمل - استمارة تقييم معلومات الأمهات تجاه علامات الخطر المختارة أثناء الحمل وتتضمن معلومات عن أثنان من علامات الخطر الأكثر حدوثاً أثناء الحمل وهما النزيف المهبلي وارتفاع ضغط الدم أثناء الحمل وتستخدم هذه الأداة لتقييم معلومات الأمهات بعد جلسة التثقيف الصحي مباشرة وجلسة التقييم الثاني بعد مرور ثلاث أسابيع من التثقيف الصحي والتقييم الثالث بعد مرور ثلاث أسابيع من التقييم الثاني.

نتائج البحث: النتائج الرئيسية للدراسة الحالية تتلخص فيما يلي:

فيما يتعلق بالعمر، فإن عمر السيدات يتراوح ما بين أقل من ٢٠-٣٥ سنة بمتوسط قدره 24.25 ± 4.14 سنة. وكانت نسبة ٩٧٪ من السيدات ربات بيوت وكان ٥٥٪ من السيدات يعيشون في الحضر. وفيما يتعلق بمتوسط عمر الحمل الرحمي 27.64 ± 4.14 .

أوضحت الدراسة أن متوسط المعلومات لدى السيدات الحوامل عن علامات الخطر المختارة أثناء الحمل قبل التثقيف الصحي كان (٣.١٥) وبعد التثقيف الصحي مباشرة (٢٠.٥٠) وبعد ثلاث أسابيع من التثقيف الصحي (التقييم الثاني) (٢١.٨٩) و ثلاث أسابيع أخرى من التقييم الثاني (التقييم الثالث) (١٩.٧٧).

التوصيات: في ضوء هذه النتائج توصي الدراسة بما يلي:

- رفع الوعي لدى السيدات الحوامل عن علامات الخطر المختارة أثناء الحمل.
- رفع الوعي لدى الفريق الطبي وهيئة التمريض أعطاء الأمهات المعلومات المحتمل حدوثها والتي تشكل خطورة على السيدة الحامل وجنينها.
- إجراء المزيد من الأبحاث التي تتعلق بالمعلومات التي تخص السيدة الحامل أثناء فترة الحمل للحصول على ولادة آمنة وطفل سليم.