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Nursing Intervention for Pregnancy Induced Hypertension Hospitalized and Home Group

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Abstract

Background, Pregnancy induced hypertension is a form of high blood pressure after 20 weeks gestation without significant proteinuria and one of the leading causes of mortality and morbidity among pregnant women. **Aim**: This study aims to evaluate effectiveness of implementing nursing intervention for pregnancy induced hypertension among hospitalized and home group. **Design**: A quasi-experimental design was utilized. **Setting**: The study was conducted at outpatient clinic and obstetrics and gynecological department at Benha University Hospital. **Sampling**: A purposive sample of (120) pregnant women. **Tools of data collection**: four tools were used, **tool I**): A structured interviewing questionnaire **tool II**): Knowledge assessment sheet **tool III)** Practices report assessment sheet. **Tool (IV):** Modified Women's Satisfaction Sheet: **Results** there was statistical significant difference improvement on total knowledge and total practices score among pregnant women in hospital group compared to home group at post intervention and follow up phases. The present study reveals that pregnant women in hospitalized group more satisfied than those in home group post intervention and follow up phases. Moreover, there was a highly statistical significant positive correlation between total knowledge score and total practices score regarding pregnancy induced hypertension in both groups at pre intervention, post intervention and follow up phases. **Conclusion:** Nursing intervention program regarding pregnancy induced hypertension in hospitalized pregnant women group would improve total knowledge and total practices score than home group post intervention and follow up phases. Furthermore, pregnant women in hospitalized group showed more satisfaction from the nursing intervention program than the home group **Recommendation**: Developing awareness program regarding early detection, referral and management of pregnancy induced hypertension for pregnant women at antenatal clinics.

Key words: Hospital and home group, Nursing intervention, Pregnancy induced hypertension.

1. Introduction

Pregnancy Induced Hypertension (PIH) is the most prevalent complication of pregnancy, the common causes of maternal death, and also contribute to neonatal morbidity and mortality. That influences approximately 10% of all pregnant women worldwide **[1]**

Pregnancy-induced hypertension is common in young primigravid women. Primi women over the age of 35, as well as numerous with diabetes and obese mothers, are more likely to develop it. It is universally prevalent in low-income mothers who are unlikely to receive routine prenatal care. After 20 weeks of pregnancy, PIH is a pregnancy specific multisystem illness characterized by edema, hypertension, and proteinuria **[2].** Pregnancy-Induced Hypertension is a multisystem disorder of pregnancy, is a form of high blood pressure during pregnancy, which is defend as Systolic Blood Pressure (SBP) ≥140 mmHg and/or Diastolic Blood Pressure (DBP) ≥90 mmHg on the basis of measurements in clinic settings. And it may be divided into 3 grades: mild (SBP 140 ~ 149 mmHg and DBP 90 ~ 99 mmHg), moderate (SBP 150 ~ 159 mmHg and DBP 100 ~ 109 mmHg) and severe (SBP ≥ 160 and DBP ≥ 110 mmHg) **[3].**

Preeclampsia can have an impact on a woman's entire body, resulting in more pregnancy-related issues such HELLP syndrome and neurologic diseases as well as complications with the renal systems, uterine, cerebrovascular, cardiovascular, hepatic, and pulmonary. Also, Eclampsia can occur if Preeclampsia is uncontrolled for more than 24 hours **[4].** .

Adequate knowledge about a disorder aid in its prevention, control and management. According to reports, patients' awareness of a condition has a considerable impact on compliance with treatment and helps to reduce the disease related consequences. Preeclampsia is a condition with signs and symptoms that require immediate medical intervention. Women who are informed about preeclampsia are more likely to seek medical help early, receive timely management and have less negative effects. This stresses the need for women to have adequate knowledge of the **[5,6].**

Self-care is care programs that provides conditions leading to desirable clinical outcomes for effective prenatal self-care, pregnant women need information such as regular blood pressure control, healthy diet, not smoking and social supports **[7].**

Self-care behaviors increase client awareness and satisfaction, increase participation in health care programs and reduce the Possibility of hospitalization and related costs of patients with chronic diseases . Self-care is a conscious, learned, and purposeful action that a person takes to maintain own life and the health of oneself and one's family. Conscious self-care by the mother during pregnancy can ensure the health of her and the fetus during pregnancy, delivery and postpartum. Pregnant women need information, skills, and social support to be able to take care of themselves during pregnancy so that they can adopt the right behaviors to take care of themselves **[8].**

The nurse's role in the care for a woman with preeclampsia relies on close monitoring of blood pressure and ongoing evaluation for signs of disease progress. The woman should be monitored for blood pressure on a regular basis and any elevated readings should be reported, also tested for the amount of protein

contained in urine and checked for weight daily. A woman should take daily fetal movement counts. A well-balanced diet with no sodium restriction is advised. Besides, a woman is advised to drink six to sodium restriction is advised. Besides, a woman is advised to drink six to eight glasses of water per day **[9].**

Significance of the study:

Pregnancy induced hypertension (PIH) is a global health problem which Hypertension in pregnancy affects about 5-22% of pregnancies worldwide. Pregnancy induced hypertension is an emerging clinical and public health problem that associated with preterm birth, intrauterine growth retardation and prenatal death worldwide **[10].**

Hypertensive disorders of pregnancy remain a major health problem for women and the fetus in the world wide. The pregnancy induced hypertension is the second leading causes of maternal death. It is estimated that hypertensive complications approximately 10% of all pregnancies. The prevalence is increase as many as 20 to 40% of pregnancies in women with chronic hypertension. In Egypt pregnancy induced hypertension is considered a major cause of maternal death, associated with 27% of direct obstetric death and 22% of all maternal deaths **[11],** So this study was conducted to evaluate nursing intervention for pregnancy induced hypertension hospitalized and home group.

Aim of the Study

This study aimed to evaluate effectiveness of implementing nursing intervention for pregnancy induced hypertension on hospitalized and home group, this aim would be achieved through: -

- Assessing of pregnant women's knowledge and practices for hospitalized group and reported practices for home group regarding pregnancy induced hypertension.
- Designing and implementing nursing intervention program for pregnant women hospitalized and home group regarding pregnancy induced hypertension.
- Evaluating effect of nursing intervention program on pregnant women knowledge and practices regarding pregnancy induced hypertension.

Research Hypotheses:

H1: Pregnant women who received nursing intervention program regarding pregnancy induced hypertension in hospitalized group would have improvement in total knowledge and total practices score than home group post intervention and follow up phases.

H2: Pregnant women in hospitalized group would be more satisfied than those in home group post intervention and follow up phases.

2. Subjects and method

Research design:

A quasi-experimental design was utilized to fulfill the aim of the study. Two groups (pre / post test) were studied

Setting of the study:

The study was conducted in two setting in antenatal unite in Obstetrics and Gynecological department and outpatient clinic at Benha university Hospital. This clinic is located at ground floor of the outpatient building which including only one room divided into diagnostic and examination area. The clinic serving the province of Al-Qalubeiah and neighboring governorates. Women who attend the clinic were provided services of Obstetric and Gynecological care and family planning counseling.

Gynecological care and family planning counseling.

Sampling:

Sample type and size:

A Purposive sample of 120 women was included in the study sample who was attained to the previous mentioned setting with inclusion criteria for a period of nine months. The study sample was selected according to the following ; **inclusion criteria:**

- Pregnant women diagnosed with pre-eclampsia (mild, moderate)**.**
- Gestational age 28-33weeks.
- No other medical and obstetrical risk factor.
- Accept to participate in the study.
- Available phone number for communication and follow up.

Sample technique:

The selection sample was divided into two groups (hospital group include 60 women and home group include 60 women).

The hospital group, pregnant women with previous inclusion criteria and attained obstetrics and gynecological department, the pregnant women received routine hospital care in addition to the nursing intervention program and included of 60 women.

The home group, pregnant women with the same inclusion criteria and attained the out-patient clinic, the pregnant women received the outpatient routine care in addition to the nursing intervention program and included of 60 women.

Tools for data collection:

Four main tools were used for data collection

Tool (I): -A Structured interviewing questionnaire :-

The questionnaire was designed by the researcher after reviewing related literature **[12,2]** .It was written in an Arabic language, it included three parts:-

Part (1): personal demographic characteristic data of the studied sample such as (age, residence, level of education, occupation, Job, income, BMI.)

Physical examination involved weight (measure in kilograms) and height (measure in centimeters) which was converted in to Body Mass Index (women weight in kilograms divided by the square of the women height in meters (kg/m2). BMI = weight (kg)/Hight 2 (m)

Body Mass Index categories according to WHO, [13].

- Underweight = < 18.50 kg/ m2
- Normal weight = 18.50: 24.99 kg/ m2
- overweight = 25.00: 29.99 kg/ m2
- Obesity =BMI of 30 or greater

Part (2): -: **Obstetrical and family history** of the studied sample such as, PIH in previous pregnancy, gravidity, parity, previous abortions, family history of preeclampsia …)

Part 3: - History of current pregnancy such as ((gestational age, time of start antenatal visits, current

antenatal visits, the reason for the visit during pregnancy, complain during pregnancy related to PIH …….)

Tool (II):Women' knowledge assessment sheet :-

It was constructed by the researcher after reviewing the related literature **[14,15]** and was translated into Arabic language by the researcher. The 17 multiple choice items designed to assess women's knowledge regarding pregnancy induced hypertension and divided into 3 sections that included: -

Section (1): - General knowledge regarding pregnancy induced hypertension (9 questions) (definition of pregnancy induced hypertension, high risk women of pregnancy induced hypertension, signs and symptoms, Methods of diagnosis of pregnancy induced hypertension, Preventive measures pregnancy induced hypertension, complication of pregnancy induced hypertension on mother and fetus, Steps should be taken to reduce the risk of complications, Schedule of visits for high-risk pregnant women)

Section (2): - Knowledge regarding HEELP Syndrome induced (3 questions) (Definition of HEELP syndrome, Symptoms of HEELP syndrome, Treatment for HEELP syndrome).

Section (3): - Knowledge regarding Magnesium Sulfate induced hypertension (5 questions) (Indications of magnesium sulfate. Action of magnesium sulfate, Side effect of magnesium sulfate, Symptoms of magnesium sulfate toxicity, Interventions once magnesium sulfate toxicity occurs).

Scoring system of knowledge:

Each item was assigned scoring of (3) given when the answer was completely correct, a score (2) was given when the answer was incompletely correct and a score (1) was given when the answer was complete incorrect or unknown. The total score for the knowledge of women was classified as the following:

- Poor when the total score ≤60%.
- Average when the total score 60- 75%.
- Good when the total scores>75%

Tool (III): practices report assessment sheet:-

It was adopted and designed by the researcher after reviewing the related literature **[16,17],** it is was translated into Arabic language by the researcher. The 24 items have four subscales; Women's health practices regarding nutrition, Women's health practices regarding rest and sleep , Women's health practices regarding worries and anxiety, Women's health practices regarding medical examinations which focused on assessing the studied sample level of practices for hospitalized women and reported practices for home group regarding pregnancy induced hypertension.

Scoring system:

To obtain the outcome of practices subscales, each statement scored as the following; score (1) for never, score (2) for sometimes, score (3) for always. The total score is expressed as a percentage, the total practices score was converted into percentage and classified into: -

The total score of women's practices was classified as the following

Satisfactory practices ≥ 60%.

Unsatisfactory practices <60%.

Tool (IV): Modified Women's Satisfaction Sheet: -

It was adopted from **[18]** and the necessary modification were done by the researcher. The scale was used to evaluate implementing nursing intervention program regarding pregnancy induced hypertension, it would be consist of ten items as (The subject Was interesting , The subject presented in a logical sequence, the scientific content was new and added to enhance my knowledge, The booklet language was easy to understand , The scientific material include in the booklet would be clear and easy to understand, Education about healthy practices importance of measuring blood pressure , daily weight , testing protein in urine , self- care required for preventing complication of preeclampsia , self-care provide me with enough knowledge and practice regarding early detection of preeclampsia , self-care for preeclampsia affect positively on psychological health during pregnancy).

The items were judged according to a three continuum of the Likert scale ranged from (1) accepted, (2) good and (3) very good. Summing up the scores of the items then the overall score gave total satisfaction score. Pregnant women's total satisfaction score was the graded as

Scoring system for this tool as follow

Satisfied when total > 75%

uncertain when total 60 -75 %.

Unsatisfied when total< 60 %

Methods of Data collection

Operation of the study :

The study was executed according to the following steps :

Approval:

Before the conduction of this study a written approval from Dean of faculty of Nursing Benha University and director of Benha University Hospital after clarification of aim of the study to maintain collaboration to collect necessary data

An official approval was obtained from the Maternity and gynecological Nursing department and the Scientific Research Ethical Committee that were approved by the Faculty of Nursing, Benha University, and an official approval with written letter was obtained from the director of Benha University Hospitals , In order to obtain a list of the pregnant women with (PIH) who were attending the outpatient clinic and who were admitted into the obstetric and gynecological department that eligible subjects for the study.

Tools validity: -

The validity of the tools was ascertained by a panel of three experts in the field of obstetrics and Gynecological nursing to test content validity.

Tools Reliability:

The revision of the tools of data collection was done by a panel of three expertise in the field of obstetrics and gynecology nursing to test the relevance, clarity of contents and tool applicability according to comments, the necessary modification was done accordingly. The reliability of the tools was done to check its internal consistency. The Cronbach's alpha coefficient test for the

Tool II (Knowledge Assessment Sheet) was 0.89, for Tool III (Practices assessment sheet) was 0.83 and for Tool IV (Modified Women's Satisfaction Sheet) was 0.86.

Ethical considerations:

aspects were considered before implementation of the study as the following: -

- Approval of the faculty ethics Committee for scientific research was obtained for the fulfillment of the study.
- An official permission from the director of the selected study setting was obtained for the fulfillment of the study.
- An oral consent was obtained from each woman before starting data collection.
- Each woman was informed about the purpose and benefits of the study at the beginning interview and time throughout the study.
- Each woman was informed that, participation is voluntary and withdrawn at any time.
- Confidentially was ensured throughout the study process, where personal data were not disclosed, and the women were assured that all data was used only for research purpose.
- The study would not cause any physical, social, psychological risks on the participant.

Pilot study:

A pilot study was carried out on 10 % of the total sample (8), for all women with PIH and meet the previous criteria) ; this pilot study was conducted one month before data collect. From the previously mentioned settings to test the clarity and applicability of the tools. No modifications were done according to the pilot results. Pilot study not excluded from the total sample to prevent contamination.

The purposes of the pilot study were to:

- Test the relevance and applicable of assessment sheet.
- Detect any problem peculiar to the tools.
- Determine the time needed to finish sheet.
- Find out any problems that interfere with the process of data collection.

The pilot study revealed that statement of the question were relevant

Field work:

The study conducted from beginning of November, 2021 till the end of July, 2022 covering a period of 9 months until the study was completed. The researcher visited the previously mentioned setting three days/ weeks (from 9.00Am to 2.00Pm).To fulfill the aim of the present study, the following phases were adopted, preparatory phases, interviewing and assessment phase, planning phase implementation and evaluation phase.

-Preparatory phase:

It included reviewing current, past, local and international related literature and theoretical knowledge of various aspects of the study using books, articles, internet, periodicals and magazines to develop tools for data collection.

Interviewing and assessment phase:

Interviewing and assessment phase were conducted for both groups and starting with hospital group. At the beginning of the interview the researcher introduced herself to each woman and great them, the researcher explained the purpose of the study and gave the women all the information about the study (purpose, duration, and activities) and their consent to participate in the study was obtained. Data were gathered by the researcher through the distribution of the structured interviewing questionnaire (Tool I) to collect women' general characteristics and obstetrical history, women' knowledge assessment sheet (Tool II pre-posttest) to assess women' knowledge regarding pregnancy induced hypertension, women' practices assessment sheet (Tool III pre-posttest) to assess women 'practices regarding pregnancy induced hypertension. The average time it took to fill the questionnaire was about (20-30 minutes).

- The hospital group was interviewed at obstetrics and gynecological department. The pregnant women received routine hospital care as well as the nursing intervention program
- The home group was interviewed at obstetrics and gynecological outpatient clinic. The pregnant women received routine home care as well as the nursing intervention program

Planning phase:

According to the results of the pretest assessment of women' knowledge, and practices related to pregnancy induced hypertension and the review of relevant literatures, the researcher designed the educational booklet in an Arabic language to covered needs of the studied women which provided with colored pictures and comprises two parts (theoretical and practical) two theoretical & two practices. The sessions' number and its content were determined. The researcher used a variety of teaching methods for theoretical session were lectures, group discussion, demonstration, and re-demonstration brain storming. Methods of teaching for practical sessions were women model The researcher also used the instructional media as video and supported materials as (stethoscope, manual sphygmomanometer, Urinalysis strips for albumin test tube, scale for weight measurement). Sessions were implemented at the end of mother medical examination at 12 pm.

Objectives of nursing intervention program were constructed and included the following:

General objectives: By the end of the intervention women in hospital and home groups would be able to acquire essential knowledge and healthy practices related to pregnancy induced hypertension.

Specific objectives: By the end of the intervention each a women will be able to

- Identify pregnancy induced hypertension
- Enumerate signs and symptoms of pregnancy induced hypertension
- Illustrate risk factors of pregnancy induced hypertension
- Enumerate causes of pregnancy induced hypertension

- Identify diagnostic measures of pregnancy induced hypertension
- Discuss complications of pregnancy induced hypertension
- Identify management of pregnancy induced hypertension
- Demonstrate healthy practices and self-care practices regarding pregnancy induced hypertension

Implementation phase:

The implementation phase was done for both groups at the previously mentioned study settings for each woman separately. The total sessions for each woman were four sessions and the duration of each session was between 45 and 60 minutes included times of discussion according to women' achievement, progress and feedback.

First session: At the beginning of the first session the researcher gave the woman the educational booklet and introduced an orientation including the general and specific objectives by using Arabic languish to match all level of education. Then the researcher started by the introduction of the theoretical part of the nursing intervention program and provided woman with general knowledge about pregnancy induced hypertension includes (definition of PIH, causes, classifications, signs and symptoms, high risk groups, expected a raised complications of PIH, and diagnosis of PIH).

Second session*:* knowledge regarding HEELP Syndrome, Magnesium Sulfate , healthy practices regarding nutrition, such as the importance of commitment to recommended antenatal visits, dietary management to preeclampsia as high protein, low salt, low fat, and drinking plenty of water daily.

Third session: provide knowledge about self-care practices based on need and problem of women, provide information about the importance of getting enough rest, maintaining sleep quality, performing regular physical activity and the importance of compliance with prescribed medications. Besides, the importance of worries and feeling anxiety reduction, medical examination and techniques to overcome preeclampsia-related stress such as benson relaxation technique.

fourth session*:* through this session women attention was diverted towards the importance of compliance with preeclampsia bundle of care besides the routine treatment, the importance of measuring and recording blood pressure on a regular basis, weighting daily, and teaching them how to check proteinuria with dipstick, the importance and procedure of counting and recording fetal movements daily,

At the end of each session, conclusion about the important points of each session was stressed by the researchers. Each woman was provided with an educational booklet at the end of the 1st session as a guide and was informed about the time of the next session. Feedback from the previous session was taken at the beginning of the new one; accordingly, the addressed educational content was rediscussed with full clarification. During data collection, the researchers communicated and followed women by the phone

Follow-up care: It will be conducted for each pregnant woman with PIH in the study group who was come to outpatient clinic in every visit during their antenatal follow up –visit and who was admitted to hospital (inpatient). Assessment of dietary intake and food pattern and exercise, blood pressure, bodyweight, urinary dipstick testing for screening for proteinuria, presence of edema and presence of any new symptoms was assessed until delivery through follow-up visit and at the inpatient unit for woman and if woman wouldn't come at time of visit or discharged before delivery will be take mother telephone number & address to facilitate follow up of cases and also researcher telephone number was registered to answer any question. and recording any arise problems and place of referral was also settled include the nearest general or private hospital in case of occurrence of any danger signs and complications.

Evaluation phase: was done at two times:

Post- test was applied one week after the intervention and follow up was applied three weeks after the intervention for both the home and hospital groups, to evaluate the effectiveness of the implementing nursing intervention program using the same format of (pre-post-test tool) (Knowledge assessment sheet, Practices assessment sheet, Modified**)** beside Women's satisfaction Sheet to assess women's satisfaction regarding the nursing intervention program

Statistical Analysis:

- Data were verified prior to computerized entry. The Statistical Package for Social Sciences (SPSS version 22) was used followed by data tabulation and analysis. Descriptive statistics were applied (e.g., mean, standard deviations, frequencies and percentages). Independent t-test, Chi-square test, Fisher Exact Test and Pearson correlation coefficients were used. For all of the statistical tests done, p-value > 0.05 indicated no statistical significant difference, p-value <0.05 indicated a statistical significant difference, and p-value ≤ 0.001 indicated a highly statistically significant difference.

Limitation of the study:

- Small sample size and decreased the number of preeclamptic cases
- No fixed place to conduct the interview and given the educational session.
- Sometimes the sessions were extended due to noise and other individuals' interruption.

3. Results:

Table (1) clarifies that 53.3% of home group and less than half (46.7%) of hospital group in age group (≥35 years) with a mean age of 33.91±3.82 years and 32.76± 5.00years respectively. Regarding residence, 66.7% of the home group and 60.0% of the hospital group were lived in rural area. Concerning level of education, it was cleared that 48.3% of home group and 46.7% of hospital group had secondary education. As regards job, 73.3% of home group and 60.0% of hospital group were house wife. Finally, 66.7% of the home group and 63.3% of the hospital group had not enough income. The two groups under study were homogenous.

Figure (1) illustrates that, 53.3% of home group and 58.3% of hospital groups were obese.

Table (2) clarifies that, there was no statistical significant difference between both hospital and home groups regarding all items of their dietary habits practices at pre intervention phase (P>0.05). Meanwhile, there was a statistical significant difference between both hospital and home groups in favor of hospital group regarding all items of their dietary habits practices at post intervention and follow up phases (P ≤0.05).

Table (3) clarifies that, there were no statistically significant difference between both hospital and home groups toward practices (dietary, rest and sleep as well as worries and feeling of anxiety) at pre intervention P >0.05. compared to a statistically significant difference at post intervention and follow up phases in favour of hospital group. Moreover, there was a highly statistically significant difference toward healthy practices regarding medical examination between both both hospital and home groups in favor of hospital group at pre intervention, post intervention and follow up phases P ≤0.001.

Figure (2): represents that, 61.7% of home group and 75.0% of hospital group were satisfied from nursing intervention program regarding pregnancy induced hypertension.

Table (4): Shows that, there was a highly statistically significant positive correlation between total knowledge score and total practices score regarding pregnancy induced hypertension in both groups at pre intervention, post intervention and follow up phases (P ≤ 0.001).

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Table (1) Distribution of the studied sample (home and hospital groups) according to demographic characteristics (n=120).

General characteristics	Home group n= 60		Hospital group n=60		FET/X2 p-value
	No	%	No	%	
Age (years)					
< 25	2	3.3	4	6.7	
25- < 30	10	16.7	18	30.0	4.54€
30- < 35	16	26.7	10	16.7	0.20
≥ 35	32	53.3	28	46.7	
Mean ± SD	33.91±3.82		32.76± 5.00		
Residence					
Rural	40	66.7	36	60.0	0.57
Urban	20	33.3	24	40.0	0.44
Education					
Not read nor write	4	6.7	4	6.7	
Read and write	8	13.3	4	6.7	2.20€
Primary education	5	8.3	8	13.3	0.72
Secondary education	29	48.3	28	46.7	
University education	14	23.4	16	26.6	
Job					
House wife	44	73.3	36	60.0	2.40
Employee	16	26.7	24	40.0	0.12
Monthly income					
Enough	20	33.3	22	36.7	0.14
Not enough	40	66.7	38	63.3	0.70

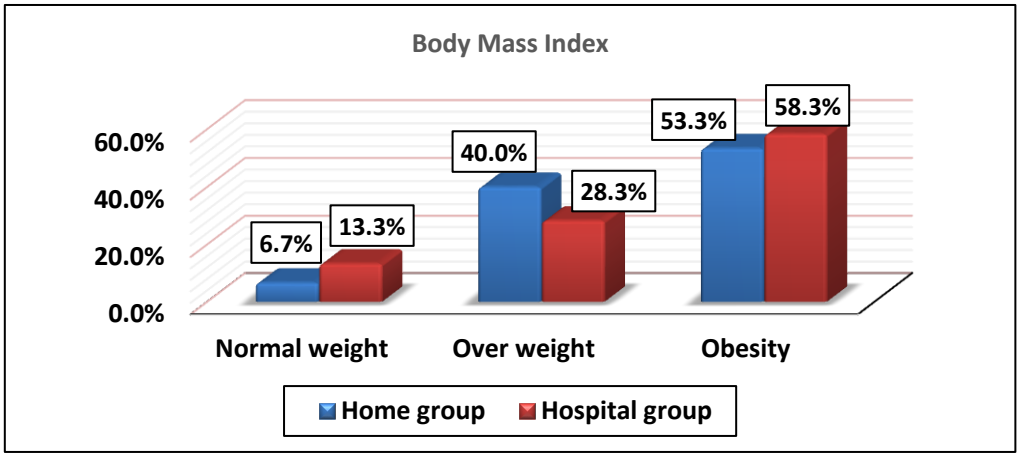

Fig. (1) Distribution of the studied sample (home and hospital groups) regarding their Body mass index (n=120)

Table (2) Distribution of the studied sample according to total knowledge regarding pregnancy induced hypertension, HEELP Syndrome and Magnesium Sulfate at pre intervention, post intervention and follow up phases (n=120).

Knowledge items	Pre-intervention					Post-intervention					Follow-Up				
	Home n=60		Hospital n=60		X2 p-value	Home n=60		Hospital n=60		X2 p-value	Home n=60		Hospital n=60		X2 p-value
	No	%	No	%		No	%	No	%		No	%	No	%	
General knowledge regarding pregnancy induced hypertension															
Good knowledge	15	25.0	19	31.7		32	53.3	44	73.4		35	58.3	45	75.0	
Average knowledge	15	25.0	12	20.0	0.82 0.66	10	16.7	8	13.3	7.2 0.02*	9	15.0	9	15.0	**5.7 0.05***
Poor knowledge	30	50.0	29	48.3		18	30.0	8	13.3		16	26.7	6	10.0	
Knowledge regarding HEELP Syndrome															
Good knowledge	10	16.7	11	18.3		28	46.7	40	66.7		33	55.0	45	75.0	
Average knowledge	9	15.0	13	21.7	1.10 0.57	12	20.0	11	18.3	6.3 0.04*	10	16.7	8	13.3	**6.2 0.04***
Poor knowledge	41	68.3	36	60.0		20	33.3	9	15.0		17	28.3	7	11.7	
Knowledge regarding Magnesium Sulfate															
Good knowledge	8	13.3	9	15.0		27	45.0	38	63.3		29	48.3	43	71.7	
Average knowledge	7	11.7	12	20.0	1.80 0.40	11	18.3	13	21.7	7.4 0.02*	14	23.3	10	16.7	**7.5 0.02***
Poor knowledge	45	75.0	39	65.0		22	36.7	9	15.0		17	28.4	7	11.7	

Chi-square test (X^2); P >0.05 (No statistical significant); * P ≤0.05 (statistically significant).

Table (3) Distribution of the studied sample according to their total healthy practices regarding pregnancy induced hypertension at pre, post intervention and follow up phases (n=120).

Practices items	Pre-intervention					Post-intervention					Follow-Up				
	Home n=60		Hospital n=60		X2 p-value	Home n=60		Hospital n=60		X2 p-value	Home n=60		Hospital n=60		X2 p-value
	No	%	No	%		No	%	No	%		No	%	No	%	
Healthy practices regarding dietary															
Satisfactory	21	35.0	26	43.3	0.87	35	58.3	46	76.7	4.49	46	76.7	54	90.0	3.84
Unsatisfactory	39	65.0	34	56.7	0.35	25	41.7	14	23.3	0.03*	14	23.3	6	10.0	0.04*
Healthy practices regarding rest and sleep															
Satisfactory	20	33.3	28	46.7	2.22	41	68.3	50	83.3	3.68	43	71.7	52	86.7	4.09
Unsatisfactory	40	66.7	32	53.3	0.13	19	31.7	10	16.7	0.05*	17	28.3	8	13.3	0.04*
Healthy practices regarding worries and feelings of anxiety															
Satisfactory	24	40.0	29	48.3	0.84	39	65.0	49	81.7	4.26	45	75.0	54	90.0	4.67
Unsatisfactory	36	60.0	31	51.7	0.35	21	35.0	11	18.3	0.03*	15	25.0	6	10.0	0.05*
Healthy practices regarding medical examinations															
Satisfactory	33	55.0	60	100.0	34.8	47	78.3	60	100.0	14.5	50	83.3	60	100.0	10.9
Unsatisfactory	27	45.0	0	0.0	0.000**.	13	21.7	0	0.0	0.000**.	10	16.7	0	0.0	0.001**

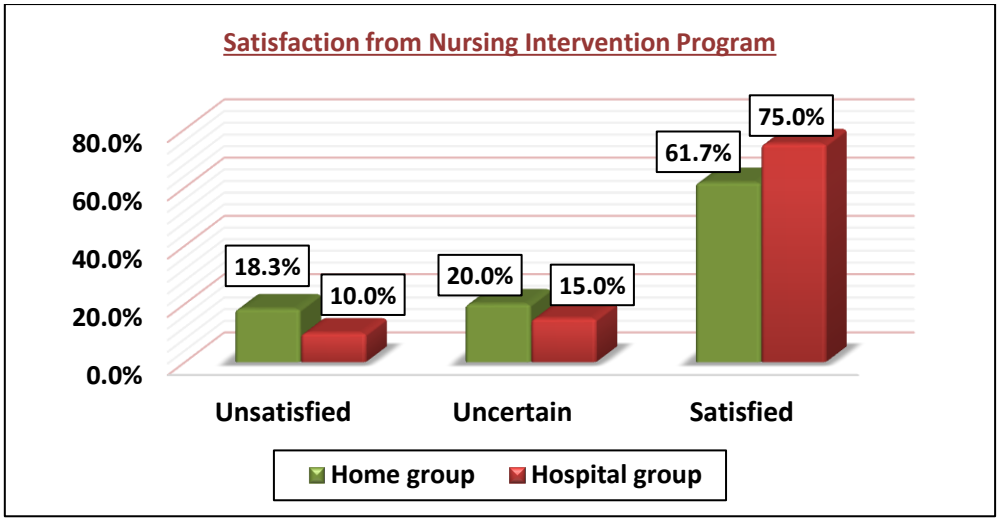

Fig. (2) Distribution of studied pregnant women satisfaction from nursing intervention program regarding pregnancy induced hypertension (n=120).

Table (4) Correlation between women' total knowledge score and total practices score regarding pregnancy induced hypertension at pre-intervention, post intervention and follow up phases (n=120).

Variables	Total knowledge score											
	Home group (n= 60)						Hospital group (n= 60)					
	Pre-intervention		Post-intervention		Follow-Up		Pre-intervention		Post-intervention		Follow-Up	
	R	P value	R	P value	R	P value	R	P value	r	P value	R	P value
Total practices score	0.673	0.000**	0.767	0.000**	0.753	0.000**	0.615	0.000**	0.699	0.000**	0.811	0.000**

4. DISCUSSION

The results of the current study covered six main areas as follow, demographic characteristics and obstetrics history of studied sample. Knowledge of the studied sample , Healthy practices of the studied sample , Satisfaction of the studied sample regarding nursing intervention program , relation between studied women total knowledge as well as total practices score and their demographic characteristics and correlation between studied variables.

Part I: Demographic characteristics and obstetrical history of the studied women (home and hospital groups)

The current study revealed that, the two groups under study were homogenous.

Regarding age; the current study revealed that, more than half of home group and less than half of hospital group in age (≥35 years) with a mean age of 33.91±3.82& 32.76± 5.00years respectively. two groups under study were homogenous, This result supported by **[19]** who studied" knowledge of hypertensive disorders of pregnancy among pregnant women attending antenatal clinic at a tertiary hospital in Ghana", on 156 women and reported that 52% of studied group were age 35-39 years, but this result contrary with **[20]** whose study entitled "maternal risk factors and adverse birth outcomes associated with HELLP syndrome: a population-based study world Pre-eclampsia," Canada on sample 1 078 323 as reported that 34% of studied sample their age were 30-34 years. The variation between these findings and the finding of the current study may be due to difference in study sample ,place and time

Regarding residence, the current study illustrated that two thirds of the home group and less than two-thirds of the hospital were lived in rural area. This may be due to un availability of hospital in rural area so that they came to nearest hospital in city. This result similar to Quasi-experimental study carried out by **[21]** about "impact of self-care guidelines on women's awareness and identification of early signs and symptoms of preeclampsia" , Minia, Egypt on 100 pregnant women and reported that , 62%, 74% of both study & control group were coming from rural area, but this result contradicted with **[22]** who studied "knowledge and attitude of pregnant women towards preeclampsia and its associated factors in South Gondar Zone", Northwest Ethiopia: among 423 pregnant women's and mentioned that 67.6 % of participants were Urban residents

Concerning level of education, it was cleared that less than half of both home and hospital groups had secondary education. This might be due to most of the culture in the countryside is middle education and early married. This result in same line with **[23]** who studied "prevalence of pregnancy induced hypertension and pregnancy outcomes among women seeking maternity services in Harare, Zimbabwe" on sample 50 women,

and reported that, 89% of studied sample had secondary education. Other -wise this result disagreed with **[19]** who reported that, 52.2% of studied group had university education. Also In same line with **[24]** who studied "knowledge and attitude of pregnant women towards management of pregnancy-induced hypertension in Southwest Nigeria" on 410 women and reported that, 58% of studied sample had university education.

As regards job, the current study revealed that less than three-quarters of home group and three fifth of hospital group were house wife. From the researcher point of view this may be due to the most of studied women had moderate education which can't give him chance for employment; also Egypt is developing country where unemployment is widespread, This result congruent with **[25]** who studied "Knowledge, attitude and practices of pregnant women aged 18-49 years towards pregnancy induced hypertension (PIH)" in Bindura, on 434 pregnant women as reported that 55% of studied sample were unemployment, on other hands this result contrary with **[26]** who done a cross sectional study about" awareness of pregnancy induced hypertension among pregnant women in Tigray Regional State", Ethiopia, on 798 pregnant women attending antenatal care in general hospitals of Tigray Regional State as reported that 52% of studied group were employed**.**

Finally , In relation to income, the current study showed that two thirds of the home group and less than two-thirds of the hospital group had not enough income. The two groups under study were homogenous. This result consistent with **[27]** who carried an institutionally based unmatched case-control study studied about "determinants of pregnancy-induced hypertension among mothers attending public hospitals in Wolaita Zone", South Ethiopia, on 283 study participants as reported that 42% of controlled group hadn't enough income. According to **[28]** who done across sectional study about the "Effect of Socioeconomic Status on Preeclampsia". Assiut University and Luxor General Hospital, in Egypt on 145cases, as mentioned that preeclampsia is more prevalent in low-income women, and the severity of preeclampsia raises with lower income.

Regarding body mass index, the current study illustrated that more than half (of both home and hospital groups were obese with body mass index 30.00±3.46 kg / m2 and 30.56±3.34kg / m2, respectively from the researcher point of view, it may be due to both group hadn't made daily activity and exercise and bad lifestyle. This result in same line with **[29]** who conducted an exploratory descriptive design on 200 women about risk factors and pregnancy outcomes among pregnant Women with pre-eclampsia, Egypt as reported that 38 % of studied group body mass index were 40kg (were obese). Also this result in the same line with **[30]** who conducted prospective case control study included 90 patients about "Vitamin D Level in Patients Suffering from Pregnancy Induced Hypertension," El-Minia, Egypt, as reported that Mean ± SD of weight of both control & study group were 26.9±3.4 , 28.3±5.1, on the other hands; this result contrary with **[31]** who studied "analysis and reliability of anthropometric measurements during pregnancy" , Spain as reported that mean SD of participants were 25.52± (4.50)kg/ m2, also in similar **[30]** as reported that body mass index for control & study group were 25.2±3.7& 26.4±5.1.

Regarding total knowledge score , the present study illustrated that less than one quarter of both home and hospital groups had good total knowledge score before intervention, that improved to more than half of the had good total knowledge score at post intervention and follow up phases form the researcher point of view , the poor knowledge before the intervention might be due to the majority of studied group had basic education, education plays a role in acquiring knowledge to promote maternal and neonatal health. Also, two thirds of studied women lived in rural areas. This may be one of the causes of poor knowledge level and resource deficiency in rural areas than urban areas.

This result supported by **[21]** as reported that 24% of study group has satisfactory level regarding knowledge score pre-intervention that jumped to 96% post-intervention, also in similar **[32]** who studied "assessment Knowledge Regarding Self-Care Management among the Pregnant Mother with PIH Attending Selected Maternity OPD's of Tertiary Hospitals in Sangli", Miraj and Kupwad Corporation Area, India on sample 245 as reported that 65% of studied sample had poor knowledge about PIH. On other hands, this result contradicted with A descriptive cross sectional survey on 250 participants by **[33]** about "awareness and attitudes of pregnant women towards hypertension in pregnancy Proceedings of the University of Benin", as reported that participants awareness and positive attitudes towards hypertension was noticed. Participants had good knowledge of hypertension in pregnancy.

Concerning total healthy practices of studied sample regarding pregnancy induced hypertension at pre intervention, the current study clarified that, more than one thirds of home group and less than half of hospital group had satisfactory practices score be23fore intervention. From the researcher point of view this might be due to the lack of adequate knowledge on preeclampsia which reflects on practices. This result consistent with **[34]** as reported that 93% of studied sample had bad practices before intervention. Also similar to **[35]** as indicated that, the majority of women (82%) had inadequate self-care practice level before intervention

The result of the current study showed that two thirds of home group and four fifth of hospital group had good total knowledge score at post intervention and follow up phases. From the researcher point of view, this might be due to the continuing sensitization process that motivated, encouraged, and empowered these women to adhere to healthy behaviors to control and reduce the complications of preeclampsia. In addition, the effect of regular attendance at sessions.

This result consistent with **[35]** as indicated that, the majority of women (82%) had inadequate self-care practice level before intervention, while after intervention this level of practice were changed as 93% and 89% had adequate self-care practice post intervention and 4 weeks follow up respectively with a statistical significance differences , also this result congruent with **[36]** who studied effect of mothers' Self-Care Brochure on Early Detection Of Preeclampsia, Egypt on 100 case and reported that that mothers` self-care brochure can help on empowering mother`s, practice and attitude regarding self-care of preeclampsia with highly statistically significant relation between pre & post intervention.

Concerning Satisfaction of the studied sample regarding nursing intervention program. The current study illustrated that less than two thirds of home group, about three quarter of hospital group were satisfied from nursing intervention program regarding pregnancy induced hypertension. This might be due to the session of programmed covered all items, variety of material and present continuously to hospital, giving instruction and follow up, also hospital group had satisfied more than home this might be due to hospital group adherent all time with staff member , asking questions , and discussed with staff member. this result in same line with **[37]** who studied entitled to" explore the Application Effect and Value of Evidence-Based nursing in Patients with Pregnancy-Induced Hypertension Syndrome", in Philippines on 200 patients as reported that the study group was satisfied of programme, with significantly higher than that in the control group ($P < 0.05$)**.**

Finally the recent study conducted correlation between women' total knowledge score and total practices score regarding pregnancy induced hypertension at pre-intervention, post intervention and follow up phases, The current study revealed that, there was a highly statistically significant positive correlation between total knowledge score and total practices score regarding pregnancy induced hypertension in both groups at pre intervention, post intervention and follow up phases. This explained by the researcher perspectives that: poor knowledge makes pregnant women at great risk of poor practice, also, This finding indicated that skills can be easily improved especially if linked with their in relevant scientific base of knowledge.

This result is supported by **[38]** who studied entitled the "impact of self-Care Counseling on quality of Life in Pregnant Women with Gestational Hypertension" , iran, on 90 pregnant women as reported that there was a highly statistically significant relation between total knowledge score and total practices score . also in same line with cross-sectional study, done by **[39]** on 136 sample for assessing the "effect of a primary health care intervention for improving pre-eclampsia and eclampsia knowledge and practice in Bangladesh", as reported that there were statistically significant relation between total knowledge & practice of participants.

Concerning Satisfaction of the studied sample regarding nursing intervention program. The current study illustrated that less than two thirds of home group, about three quarter of hospital group were satisfied from nursing intervention program regarding pregnancy induced hypertension. This might be due to the session of programmed covered all items, variety of material and present continuously to hospital, giving instruction and follow up, also hospital group had satisfied more than home this might be due to hospital group adherent all time with staff member , asking questions , and discussed with staff member. this result in same line with **[38]** who studied entitled to" explore the Application Effect and Value of Evidence-Based nursing in Patients with Pregnancy-Induced Hypertension Syndrome", in Philippines on 200 patients as reported that the study group was satisfied of programme, with significantly higher than that in the control group ($P < 0.05$).

Conclusion

In the light of the results of the current study, was concluded that; there was a marked improvement in total knowledge and total practices score regarding pregnancy induced hypertension among pregnant women in hospital group compared to home group at post intervention and follow up phases. Furthermore pregnant women in hospital group would be more satisfied than those home group . moreover, there was a highly statistical significant positive correlation between total knowledge score and total practices score regarding pregnancy induced hypertension in both groups at pre intervention, post intervention and follow up phases. hence the aim of study was achieved and research hypotheses were supported

Recommendations

Based on the finding of the current study, the following recommendations were suggested:

- Developing awareness program regarding early detection, referral and management of pregnancy induced hypertension for pregnant women at antenatal clinics.
- Implementing instructional guidelines and mother class in antenatal unit to pregnant women about how to management pregnancy induced to hypertension prevent complication (sever degree).
- Develop awareness and increase knowledge related to pregnancy induced hypertension to the health care providers to be applied basic health habit for pregnancy induced hypertension to pregnant women .
- Regular follow up of women with pregnancy induced hypertension to detect any health problem early

Further study need to be performed:

- Replication of the study using larger sample from different geographical areas to help for generalization of the results.
- Design and implementing study to identify factors and barriers that affecting early detection of preeclampsia.
- Develop awareness and increase knowledge related to pregnancy induced hypertension to the health care providers to be applied basic health habit for pregnancy induced hypertension to pregnant women

Reference

[1] Tadele, W., Debebe, F., Tadele, A., & Tilahun, L. (2020): Assessment Of Knowledge And Practice Of Nurses Working In Gynecology Emergency Room Towards Pregnancy Induced Hypertension In Selected Government Public Hospitals Found In Addis Ababa, Ethiopia , International . Journal. of Allied Medical Science and Clinical. Research Vol-8(2) 2020 (341-350)

[2] Abdalmajed, Sh A. (2018) : Nurses' Knowledge regarding Nursing Care of Pregnancy Induced Hypertension at Kassala Saudi New Hospital, Kassala State, Sudan; Faculty of Applied Medical Sciences; http://repo.uofg.edu.sd/handle/123456789/3920. P15-25

[3] Zhang, J ., Jing, SH. Zhang, Jand Feng, L(2022): Low-dose aspirin prevents LPS-induced preeclampsia-like phenotype via AQP-1 and the MAPK/ERK 1/2 pathway, https://doi.org/10.1016/j.placenta.2022.03, Vol; 121.

[4] Sabry, F.A., Atia, A.G., Abd Elkhalek, N K. (2021): Effect of Precede Model Educational Program on Nurses' Knowledge and Attitude toward Health Promotion of preeclampsia, Egyptian Journal of Nursing and Health Sciences, 2(2), 137-158 .

[5] John A & & Kibusi s. (2020): Knowledge on Prevention and Management of Preeclampsia and Eclampsia among Nurses in Primary Health Settings, East African, health research,4(1),33

[6] Fondjo, L. A., Boamah, V.E., Fierti, A. & Gyesi, D. (2019): Knowledge of preeclampsia and its associated factors among pregnant women: a possible link to reduce related adverse outcomes, Ghana, BMC Pregnancy and Childbirth 19 (1) :456 https://doi.org/10.1186/s12884-019-2623-x.

[7] Ahmadinezhad F , Nematolahi A & Akbarzadeh M ,(2020): Effect of Educational Program of Self-care Behaviors on Perceived Social Support Among Mother With Preeclampsia From Southeastern Iran, A Clinical Trial Study , DOI: https://doi.org/10.21203/rs.3.rs-45951/v1 .

[8] Karbalai FS , Karami MZ, Kia S, (2020) :The Effect of Self-care Training on Perceived Stress, Health Literacy, and Self-care Behaviors in Women with Gestational Diabetes. Community Health Journal.; 14(2): 30-39

[9] EL Sayed A A, Sarhan E A, Abdel-Mordy A M. (2020): Effect of Implementing Continuous Care Model on Health-Related Behaviors and Quality of Life among Women with Preeclampsia. Egyptian Journal of Health Care, EJHC, 11 (4) , 726-742.

[10] Adeosun, F ., Margaret, A.A., Samuel, B.O., Adewole, J. O. (2018): Pregnancy induced hypertension: expectant mothers' care seeking behaviour in Ekiti State, Nigeria, International Journal of Advanced Research and Publications (IJARP), 1 (4) ,ISSN: 2456-9992 p 88- 90.

[11] Baha ,M.,(2019):Preeclampsia and Hypertensive Disorder, Cheslys Hypertensive disorder in pregnancy 4th ., United states; Data Center from by Elsevier on February ,Elsevier Inc;pp:662-684.

[12] Harika CH .,(2015) .A study on Assessment of Anthropometric measurement and dietary intakes among adult males .international journal of sciences and research (online):2319-7064 . vol 4 ,issue 12 .www.ijsr.net .

[13] World Health Organization (2019). Trends in maternal mortality: 2000 to 2017: Estimates by WHO, UNICEF, UNFPA, World Bank Group and the Geneva.United Nations Population Division. accessed on (May 2021).

[14] Al Ebrahimy E ., Al Jobori S., Al Safi W ., (2019):Knowledge about pregnancy induced hypertension among Pregnant women attending Gynecology and Obstetrics Teaching Hospital in Kerbala , Karbala Journal of Medicine ;12 (2): P 2212-2215.

[15] Sathiyabama G ., and Lokeshwari B ., (2020) .A study to assess the effectiveness of planned teaching program on knowledge regarding pre-eclampsia among antenatal mothers at government hospital, Thiruvallur,13(6); 1066.

[16] Salim, T. & Kuriakose, A. (2017): Knowledge of gestational hypertension and its self - care measures among primigravid woman. Journal Of Medical Science And Clinical Research, 5(1): P 15328-15335.

[17] Prathima P.(2014): Compare Knowledge of self-Care Management of PIH Between Primi Gravida and multi gravida. Nitte Univ J HealthSci.;4(3):61-5, (http://www.encylopedia.com

[18] Steven , R (2012) : Mindfulness-Based Stress Reduction Lowers Psychological Distress in Students , quarterly Journal of Political Science ,1 (3) :90 , united states .

[19] Agbeno, E., Osarfo, J., , Owusu,G.P. (2022): Knowledge of hypertensive disorders of pregnancy among pregnant women attending antenatal clinic at a tertiary hospital in Ghana, SAGE Open Medicine Volume 10: 1–10 The Author(s) 2022 Article reuse guidelines: sagepub.com/journals-permissions DOI: 10.1177/20503121221088432 journals.sagepub.com/home/smo.

[20] Lisonkova, S., Razaz, N., Sabr, Y., Muraca, G.M., Boutin,A. , Mayer, C., Joseph, K.S.& Kramer, M.S. (2020) : Maternal risk factors and adverse birth outcomes associated with HELLP syndrome: a population-based study World Pre-eclampsia Day 2021 – Highlights from BJOG, volume127, Issue10 , September 2020 Pages 1189-1198

[21] Mohamed , E., Youness , E., kamel, H. & Hasab Allah, M. (2022): Impact of Self-Care Guidelines on Women's Awareness and Identification of Early Signs and Symptoms of Preeclampsia , Minia Scientific Nursing Journal (Print – ISSN, 2537-012X) (Online - ISSN 2785-9797) Vol. (12) No. (1) p 323

[22] Mekie, M., Addisu, D., Bezie, M., Melkie, A., Getaneh, D. & Bayih, W. (2021): knowledge and attitude of pregnant women towards preeclampsia and its associated factors in South Gondar Zone, Northwest Ethiopia: a multi-center facility-based cross-sectional study

[23] Muti, M., Tshimanga, M., Notion , G.T & Bangure, D. (2015): Prevalence of pregnancy induced hypertension and pregnancy outcomes among women seeking maternity services in Harare, Zimbabwe , BMC Cardiovascular Disorders 15, (111); doi: 10.1186/s12872-015-0110-5 P 2-8.

[24] Fadare, R.I., . Akpor, O.A. & Oziegbe, O. B. (2018): Knowledge and Attitude of Pregnant Women towards Management of Pregnancy-induced Hypertension in Southwest Nigeria Fadare et al.; JAMPS, 11(2): xxx-xxx, 2018; Article no.JAMPS.29764.

[25] Kanyamura, D., Zvinavashe, M. & Makoni, P. (2021): Knowledge, attitude and practices of pregnant women aged 18-49 years towards pregnancy induced hypertension (PIH) in Bindura district: Zimbabwe: A case control study, International Journal of Advance Research in Nursing Volume 4; Issue 1; Jan-; P 340.

[26] Berhe, A., Ilesanmi, A.O., Aimakhu, C.O. & Bezabih, A.M.(2020): Awareness of pregnancy induced hypertension among pregnant women in Tigray Regional State, Ethiopia, Pan African Medical Journal. 2020;35:71. doi:10.11604/pamj.2020.35.71.19351.

[27] Belayhun , Y., Kassa , Y., Mekonnen , N., Binu, W. & Tenga, M. (2021): Determinants of Pregnancy-Induced Hypertension among Mothers Attending Public Hospitals in Wolaita Zone, South Ethiopia: Findings from Unmatched Case-Control Study, international Journal of Hypertension.

[28] Youssef, A.E., Mohamed, M.H., Habib, D.M., and Moussa, S.A.(2018): Effect of Socioeconomic Status on Preeclampsia. Cross Sectional Study, Med. J. Cairo Univ., 2018;86 (7)(4227-4234.

[29] Gaikwad, S.J. & Kumbhar, V. (2019): A Study to Assess the Knowledge Regarding Self-Care Management among the Pregnant Mother with PIH Attending Selected Maternity OPD's of Tertiary Hospitals in Sangli, Miraj and Kupwad Corporation Area, Indian Journal of Public Health Research & Development,.10,(7) .

[30] Soni, J., Oparah, A.C., Oseji, F., Yakubu, V., Aghahowa, M. (2018): Awareness and attitudes of pregnant women towards hypertension in pregnancy Proceedings of the University of Benin, , Journal of Science and Practice of Pharmacy June 2018; 5 (1): 214-215 Available at http://www.jsppharm.org .

[31] Abd Elhaleem et al., (2021): effect of nursing intervention guided by PRECEDE Model on knowledge and practice of preventive behavior of high-risk pregnant women regarding preeclampsia, Egyptian Journal of Health Care, 2021 EJH vol. 12 no. 2

[32] Afefy, N. & Kamel, A. (2019): Effect of an Educational Module on the Knowledge and Self-Care of Women suffering from Pre-eclmpsia, Submitted for Partial Fulfillment of Doctorate Degree in Nursing Science Maternal and Newborn Health Nursing, Faculty of Nursing, Cairo University, Egypt IOSR Journal of Nursing and Health Science (IOSR-JNHS(e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 8, Issue 2 Ser. X. (Mar. - Apr .2019), PP 33-42.

[33] Hessien, M. (2017): Effect of Mothers' Self-Care Brochure on Early Detection Of Preeclampsia Submitted for Partial Fulfillment of Doctorate Degree in Nursing Science Obstetric and gynaecological Nursin, Faculty of Nursing , Ain-Shams University 2017

[34] Ahmadinejad , G., Khadivzadeh , T., Eftekharyazdi , M., Esmaeili, H. (2022) ;The Impact of Self-Care Counseling on Quality of Life in Pregnant Women with Gestational Hypertension , Journal of Midwifery and Reproductive Health , iran 10(4): 3432-3442. DOI: 10.22038/jmrh.2022.63744.1850 .

[35] Hossain, S., Roy, S., Sultana, K., Warren, C. (2019): Assessing the effect of a primary health care intervention for improving pre-eclampsia and eclampsia knowledge and practice in Bangladesh, at: https://knowledgecommons.popcouncil.org/departments_sbsr-rh.

[36] Han, X., Garma , P., Zhang, Y. & Quan, H. (2022): To Explore the Application Effect and Value of Evidence-Based Nursing in Patients with Pregnancy-Induced Hypertension Syndrome, Philippines Media & Molecular Imaging 2022(6):1-8

[37] Essa, R.M. & Madian, A.A. (2019): Risk factors and pregnancy outcomes among pregnant Women with pre-eclampsia, sunbtted fo partial fullment degree master degree, Faculty of Nursing, Damanhour University,

[38] Gad Alrb, M. T., Hassan, M., Bahaa El-Den, H. & Ali, A. (2019): Vitamin D Level in Patients Suffering from Pregnancy Induced Hypertension Department of Obstetrics and Gynecology, El-Minia Faculty of Medicine , MJMR, 30, (3), p 42-45.

[39] Gómez-Carrascosa, I., Sánchez-Ferrer, M. & Torres-Cantero, A. (2022): analysis and Reliability of Anthropometric Measurements during Pregnancy: A Prospective Cohort Study in 208 Pregnant Women Clin. Med. doi.org/10.3390/jcm10173933