

## **Investigate Evidence Based Nursing Practices In Preeclampsia Among Pregnant Woman**

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### **Abstract**

**Aim:** The present study aimed to investigate evidence based nursing practices in preeclampsia among pregnant woman.

**Research question:** Does nurses utilize evidence based nursing practices of preeclampsia in pregnancy?.

**Study design:** A cross sectional study was used.

**Setting:** This study was conducted at four hospitals in high risk department at Mansoura city .The study period was six months started from September 2014 to February 2015.

**Sample type:** A convenient sample.

**Subjects:** All nurses who working at four hospitals in high risk department (University Hospital (40nurse), General Hospital(11nurse), International Hospital (8nurses) and Insurance Hospital (11nurse)at Mansoura city. **Tools:** Two tools were used for data collection .Tool I: Assessment sheet to collect data regarding general characteristics of nurses. Tool II: observational checklist to evaluate nursing practices regarding management of preeclampsia.

**Results:** Data analysis revealed that the young age nurses had acquired the highest scores for EBNP practices of preeclampsia ( $35.25 \pm 11.7$ ) than older nurse. There was no statistically significant difference between places of work in practices of evidence based nursing of preeclampsia ( $P > 0.05$ ).

**Conclusion:** Nurses in four hospitals were not practices the skills necessary to implement EBP.

**Recommendations:** Improving nurse's awareness regarding EBNP by educational programs to encourage them to utilized EBP in their daily practice.

**Key words:** Evidence Based Nursing Practice-Preeclampsia

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### **I. Introduction**

Evidence based nursing practice (EBNP) consider as the use of the best scientific evidence integrated with clinical experience and incorporating patient values and preferences in the practice of professional patient care in order to make appropriate decisions **Salbach et al (2014)**. In addition to it involves integration of a problem solving approach within the context of caring, considering best evidence from studies, patient care data, clinical experience and expertise, and patients' preferences and values. (**Melynk et al ,2013**).

Moreover, EBNP is important to the healthcare professional for many reasons such as patient outcomes are substantially improved when health care is based on evidence from well-designed studies versus tradition or clinical expertise alone. (**Leufer & Cleary, 2012**). For example in obstetrics care it reduced morbidity and mortality sometimes dramatically by reduced the risk of premature infant death by 20% through using the seminal metaanalysis as Heater. (**Aarons et al., 2010**).

Also EBNP can be a guide for the standardized care of women affected by preeclampsia and most recent practice indicates that current managements of preeclampsia is a reflection of past treatments a more current review of evidence based information on the management of preeclampsia further demonstrates that the mainstay of treatment has remained consistent. (**Norwitz & Repke, 2012**).

Additionally, EBNP can be used as a basis for healthcare processes. Evidence can be incorporated into virtually every phase of the healthcare process. It is used in (assessment of patient conditions, diagnosis of patient problems, planning patient care and interventions) to improve the patient's condition, prevent complications and evaluation of patient responses to interventions. (**Oman, Duran & Fink, 2012**).

**ACOG (2014)** state that preeclampsia as a pregnancy induced hypertension in association with proteinuria ( $>0.3$  g in 24 hours) with or without edema. Virtually any organ system may be affected. It's relatively common condition but may become life-threatening for the mother and the fetus. It is characterized by maternal hypertension, proteinuria, edema, fetal intrauterine growth restriction and premature birth.

Nursing management with preeclampsia is a critical variable in promoting a positive outcome for both the mother and fetus. This begins with a review of prenatal records and an interview with the patient to clarify

history. Nursing intervention for woman with mild pregnant induced hypertension, which are promote bed rest, promote good condition, provide emotional support, while the nursing intervention for a woman with sever PIH are support, bed rest, monitor maternal wellbeing, monitor fetal wellbeing, support a nutritious diet, administer medications to prevent eclampsia and take note of any severe headaches, visual disturbances or severe epigastric pain.(Lowder& Wilson, 2010).

**Significant Of The Study:**

Preeclampsia complication arise in about 3% of pregnancies, and all hypertensive disorders affect about 5 -10% of pregnancies women who have or develop high blood pressure during pregnancy are all at increased risk of complications antenatal, intra- partum and in the puerperium. The increased risk applies to the mother as well to the fetus.( Hutcheon&Lisonkova, 2011). No previous study done at Mansoura city, so this study will done.

**Aim Of The Study**

The present study aimed to investigate evidence based nursing practices in preeclampsia among pregnant woman.

**Research Question:**

Does nurses utilize evidence based nursing practices of preeclampsia in pregnancy?

**II. Material andMethods**

**Setting:** This study was conducted at four hospitals in high risk department at Mansoura city .The study period was six months started from September 2014 to February 2015.

**Sample type:** A convenient sample.

**Subjects:** All nurses who working at four hospitals in high risk department (University Hospital (40nurse), General Hospital (11nurse), International Hospital (8nurses) and Insurance

**Tools of Data Collection:**

To achieve the aim of the study, two tools were used for data collection.

**Tool I: interviewing questionnaire sheet:**

This questionnaire included:

- General characteristics of nurses such as (Age, Marital status, Education level, Years of experience, Training programs, etc.....).

**Tool II Observational checklist:**

Observational checklist for assessing nursing practices regarding management of preeclampsia. Which consisted of four tables (quality of evidence, grade and level of evidence, competent practice points and general managements)

**The practice was evaluated as:**

Not done=<50%-60%

Done:

D (average practice) =60-<70%

C (good practice) =70 -<75%

B (very good practice) =75-<85%

A (excellent practice) =85- 100%

**Operational design**

The operational design includes preparatory phase, pilot study and fieldwork.

**A. Preparatory phase:**

It includes reviewing of related literature, and theoretical knowledge of various aspects of the study using books, articles, internet periodicals and magazines, as well as pioneer from nursing experts in order to develop the exact tools for data collection.

**Pilot study:** A pilot study will be 10 % of the total duration. It will be carried out three days for three weeks to evaluate the applicability and clarity of the tools, modification will be done according to the results of pilot study.

**B. Field work:**

- The researcher will attended to high risk unit at Mansoura governmental hospitals for 4 days/week after taking permission from September 2014 to the end of February 2015 according the nurses were selected from the previous mentioned setting according the previous criteria.
- Firstly the aim of the study will be explained to the nurses and their consents will be obtained from each one.
- The individual interview was conducted by the researcher by using tool I and tool II to collect necessary data from nurses at risk unit at Mansoura governmental hospitals
- The time for data collection was from 8:00 am to 2:00 pm. Each nurse interview was take 15 minutes to fill tool I and each one was interview individually. The care of preeclampsia was monitored for each case through tool II during the shift.

**Ethical Considerations And Administrative Design:**

- Ethical approval will be obtained from the women Health and Midwifery Nursing Department of the Faculty of Nursing Mansoura University.
- An official permission to conduct the study will be obtained from the responsible administration of the hospitals.
- Oral consents were obtained from each woman after explaining the purpose of the study. Each woman had the right to withdraw from the study at any time.
- Privacy and confidentiality of the collected data will be assured

**III. Results**

**Table 1. Frequency Distribution of General Characteristics of Nurses.**

General Characteristics	No.(n=70)	%
<b>Age :</b> 20-25years	28	40.0
26-30 years	18	25.7
31-35 years	9	12.9
36-40 years	5	7.1
≥41 years	10	14.3
<b>Educational Level:</b>		
School of nursing		
3years	28	40.0
5years	20	28.6
Technical institution nursing	12	17.1
Health institution nursing	10	14.3
<b>Employment degree:</b>		
First degree	15	21.4
Second degree	9	12.9
Third degree	18	25.7
Fourth degree	28	40.0
<b>Years of Work experiences:</b>		
1-5years	27	38.6
6-11 years	17	24.3
≥11 years	26	37.1
<b>Working hours/day</b>		
6 hours	8	11.4
12 hours	62	88.6
<b>Having training program in EBNP:</b>		
Trained	0	0.0
Not trained	70	100.0

**Table (1)** showed that, the general characteristics of the sample. It can be observed that more than one third (40.0%) of the sample their age was ranged from 20 to 25year.Regarding the education the highest percentage (40.0%) had a diploma 3years education. In addition, more than one third (38.6%) of the studied nurse had a work experience from (1to5years). And all studded nurses(100%) didn't had training on evidence based practices regarding management of preeclampsia and more than three quarters (88.6%) were working for 12 hours.

**Table 2: Applying Evidence Based Nursing practices (EBNP) among Nurses for Providing Nursing Care of Preeclampsia in Pregnancy.**  
**Part(a):Nursing Practices Regarding Assessment and Diagnosis of Preeclampsia Women**

Assessment and diagnosis of preeclampsia women	Nursing practice(Grade and Level of EBNP)(n=70)									
	Not done		Done							
	No.	%	D:Average		C:Good		B:Very good		A:Excellent	
			No.	%	No.	%	No.	%	No.	%
<b>-Measure and recording the blood pressure:</b>										
Woman rested at sitting position.	6	8.6	8	11.4	41	58.6	12	17.1	3	4.3
Locate cuff appropriately	8	11.4	3	4.3	41	58.6	12	17.1	6	8.6
Use Korotk off phase 5 to assess diastolic blood pressure.	6	8.6	9	12.9	42	60.0	11	15.7	2	2.9
Repeat the measurement to confirm BP reading.	8	11.4	6	8.6	41	58.6	12	17.1	3	4.3
<b>-Measure proteinuria:</b>										
Visual dipstick assessment	6	8.6	9	12.9	43	61.4	10	14.3	2	2.9
Laboratory testing (24-hour urine collection).	6	8.6	9	12.9	43	61.4	10	14.3	2	2.9
<b>-Preparing woman during assessment of fetal wellbeing:</b>										
Measuring of the abdominal circumference.	14	20.0	32	45.7	18	25.7	6	8.6	-	0.0
Listen to fetal heart rate by:	12	17.1	32	45.7	26	37.1	-	0.0	-	0.0
Pinardfetoscope	18	25.7	26	37.1	21	30.0	5	7.1	-	0.0
Cardiotocography.	18	25.7	26	37.1	21	30.0	5	7.1	-	0.0
Ultrasound measurements										

This table shows that, all nurses hadn't used automated methods for measuring the blood pressure and proteinuria. They also hadn't used continuous electronic fetal monitoring. In addition, all nurses hadn't reached to excellent level of performance regarding assist in patient preparation for fetal wellbeing according to grade and level of EBNP.

**Part (b):Nursing Practice Regarding Assessment and Diagnosis of Preeclampsia Women.**

Assessment and Diagnosis of preeclampsia women	Nursing practice(Competent practice points of evidence)(n=70)									
	Not done		Done							
	No.	%	D:Average		C:Good		B:Very good		A:Excellent	
			No.	%	No.	%	No.	%	No.	%
<b>The nurse monitor the women with preeclampsia:</b>										
Checking blood pressure.	11	15.7	13	18.6	36	51.4	7	10.0	3	4.3
Taking a daily blood samples.	11	15.7	16	22.8	36	51.4	7	10.0	-	0.0
Monitor warning sign of eclampsia	70	100.0	-	0.0	-	0.0	-	0.0	-	0.0

This table shows that, all nurses hadn't monitor the warning signs of eclampsia. While half of the sample (51.4%) had check the blood pressure and take the daily blood sample at good level of performance according to competent practice points of EBNP. Also the practice done at excellent level was 4.3% of the nurses.

**Part(C) General Nursing Practices for Preeclampsia Women.**

General nursing practice of preeclampsia	Nursing practice (n=70)									
	Not done		Done							
	No	%	D:Average		C:Good		B:Very good		A:Excellent	
			No	%	No	%	No	%	No	%
Equipment preparation	30	42.9	20	28.6	20	28.9	-	0.0	-	0.0
Position.	30	42.9	25	35.7	13	18.6	2	2.9	-	0.0
Fluid Management.	30	42.9	27	38.6	11	15.7	2	2.9	-	0.0
Edema assessment.	40	57.1	15	21.4	15	21.4	-	0.0	-	0.0
Nursing care for edema.	10	14.2	20	28.6	32	45.7	7	10.0	1	1.4
Assess the warning signs for eclampsia seizure.	10	14.2	12	17.1	38	54.3	8	11.4	2	2.9
Assessment of fetal wellbeing.	32	45.7	29	41.4	6	8.6	3	4.3	-	0.0
The nurse instructions to pre eclampsia patient	45	64.3	15	21.4	8	11.4	2	2.9	-	0.0

This table shows that, less than three quarters of the sample (64.3%) hadn't given instructions to preeclampsia women. While less than half of the sample (45.7%) hadn't done the fetus assessment according to general management of evidence practice. Also the practice done at excellent level ranged from (1.4% to 2.9%) regarding general management for preeclampsia women.

**Part (d) Nurse Administration of Prescribed Drugs to Control Blood Pressure in Preeclampsia Women**

Items	Nursing practice(Quality of Evidence)(n=70)									
	Not done		Done							
	No.	%	D:Average		C:Good		B:Very good		A:Excellent	
			No.	%	No.	%	No.	%	No.	%
Nurse administrate prescribed drugs to control blood pressure in preeclampsia women:	14	20.0	43	61.4	13	18.6	-	0.0	-	0.0
Calcium supplementation	7	10.0	39	55.7	22	31.4	2	2.9	-	0.0
Acetylsalicylic acid (aspirin, 75 mg)	59	84.3	7	10.0	4	5.7	-	0.0	-	0.0
Vitamin D	70	100.0	-	0.0	-	0.0	-	0.0	-	0.0
Vitamin C &E										

This table shows that, all studied nurses (100%) of the nurse hadn't done the administration of individual or combined vitamin C and vitamin E supplementation during pregnancy. Also more than three quarter (84.3%) hadn't done the administrations of Vitamin D supplementation during pregnancy. In addition, more than half (61.4%) of the nurses had average practice regarding administration of calcium supplementation during pregnancy.

**Table 3: Frequency and Distribution of the Relation between General Characteristics and Observation Score of Preeclampsia Practices.**

General characteristics	N:70 No	Nurses practices	F test	P
		Preeclampsia(P)		
		M±SD		
<b>Age group:</b> 20-25Y 26-30Y 31-5Y 36-40Y ≥41Y	28 18 9 5 10	35.25±11.7 27.89±9.7 25.78±7.7 18.60±9.4 4.3±6.13	18.709	0.00
<b>Education Level:</b> School of Nursing 3 y 5 y Technical institution nursing Health institution nursing	28 20 12 10	16.68±11.9 33.67±9.1 34.70±13.7 24.21±4.2	11.401	0.000
<b>Employment degree</b> First degree Second degree Third degree Fourth degree	15 9 18 28	9.06±9.9 25.77±7.7 27.89±9.7 35.25±11.7	20.804	0.000
<b>Years of Experiences</b> (1-5 y) ( 6-11 )y (≥11) y	27 17 26	35.63±11.7 26.71±9.1 16.96±13.2	16.711	0.000
<b>Working hours \Day</b> 6 hours 12 hours	8 62	4.88±6.72 29.32±12.3	5.467	0.000

**Table (3)** illustrate that, there was a highly significant difference between nurses general characteristics (age, education, employment, experience years and the working hours) and observational scores of EBP of preeclampsia (P>0.05).

#### IV. Discussion

Regarding the general characteristics of the study sample It can be observed that more than one third of the sample their age ranged from 20 to 25 years, which consistent with **John, (2010)** who made a study about use of national guidelines in management of sever preeclampsia and eclampsia at Garissa provincial general hospital at which were the majority of health workers were between the ages of 19 and 24 years. As this age is the most age for reproduction and tolerate the daily high load of patients.

Regarding the education more than one third had a diploma 3years education, which near to the result by **(Elisabeth & Sara, 2013)** who made a study about evaluation of knowledge and management practices of hypertension in pregnancy among health care workers in Moshi urban ,Tanzania .They found that more than half of the health worker in Tanzania country side having a diploma education. Which are limited educational level as they take only three years to have the degree lead to low level of knowledge regarding EBP, also most nurses in the current study had diplomas of nursing degree with a curriculum that has little information.

Regarding years of experiences, it was found that more than one third of the studied nurse had a work experience rang from 1to5years, On the other hand **(Ahmad et al ,2013)**Who made a study at Minia Maternal and Child University Hospital about(Updating Nurses' knowledge about Preeclampsia Patients' Care by Using a Poster) found that near to three quarter of the nurses had more than 5years of experience in the obstetrics and gynecology department.

Regarding receiving training courses about hypertensive disorders during pregnancy the present study shows that all nurses did not receive regular nursing training courses. This result disagreed with **(Chiari et al, 2010)** who made a study about how nurses update their knowledge a survey in three north Italian hospitals found that nurses that had attended courses of research or evidence based nursing read more frequently articles published in nursing or medical journals. This may due to insufficient percentage of training courses, lack of supervision, and care less behavior of policy makers.

According to the results of the present study about three quarters of the studied nurses had follow the WHO recommendation regarding treating women with severe hypertension during pregnancy with antihypertensive drugs ahydralazine which are not consistent with **(Elisabeth and Sara, 2013)** they found that less than one fifth of the health care provider answercorrectly according to WHO guidelines on how to treat and manage hypertension. This may due to lack of guide line awareness, lack of orientation from supervisor and training course related to the subject.

All studied nurses of the nurse hadn't done the administration of single or combination of vitamin C and vitamin E supplementation during pregnancy. Also more than three quarter hadn't done the administrations of Vitamin D supplementation during pregnancy. This findings is near to the result of **(WHO, 2011)** who reported that the majority of the sample hadn't administrate single or combination of vitamin C and vitamin E during pregnancy. Also there was no one of the study group reach to the excellent level regarding the recommendation for prevention and treatment of preeclampsia. This is due to lack of knowledge, training and guide regarding these recommendations.

Regarding measuring protenuria to asses and diagnosis preeclampsia near to one third of nurses had done with very good level, which is consistent with **(Boller et al, 2003)** who made a study about Quality and Comparison of antenatal care in public and private providers in the United Republic of Tanzania, reported in his study at Dar-salaam public hospitals found that only one third had done. Also another study by **(Urassa et al, 2003)** who made a study about Management of Hypertension in Pregnancy as a Quality Indicator of Antenatal Care in Rural Tanzania, found that where less than half of the health facilities had dipsticks to measure protenuria for preeclampsia diagnosis.

The present study revealed that all health facilities had sufficient number of blood pressure machine and stethoscope which would be used to screen and to monitor blood pressure during antenatal care. This implies that at least all the antenatal attendees may have an opportunity to be screened for raised blood pressure. Which is slightly higher than **(Urassa et al, 2003)** found that more than three quarters of health facility had working blood pressure machines and stethoscopes. This availability of the equipments leads to early detection for the PIH and prevent complications to mother and fetus.

Regarding the equipment preparation (basic and emergency equipments) about two fifth of the studied nurses hadn't done the preparation, this results agreement with **(Abdalah et al, 2009)** they conducted study to assess the state of emergency obstetric care services in Nairobi informal settlements and environs showed that many health facilities do not meet a criteria for comprehensive emergency obstetric care, while the rest provided less than basic care. This is due to lack of obstetric skills, equipment and supplies were cited as hampering facilities from providing lifesaving emergency obstetric care. They concluded that specific areas that require attention include (supervision, regulation of maternity facilities and ensuring that basic equipment, supplies and trained personnel are available in order to handle obstetric complications in both public and private facilities.

## V. Conclusion

Overall, the findings of the study put highlight on some of the important point such as more than half of the sample had monitor the women with preeclampsia at good level of performance according to competent practice points of EBNP. Also the practice done at excellent level ranged from (2.9% to 4.3%) and no one of the nurse reach to excellent level of performance according to competent practice points of EBNP and general management of EBP, while near to one third reach to very good level performance regarding applying quality of evidence, all nurses haven't used automated methods for measuring the blood pressure and protenuria.

## VI. Recommendations

- Disseminate the guide lines to all maternity and MCH health care services.
- Integrate the guide lines to under graduate curriculum students nurse to be further applied into their practice after graduation.
- Improving nurse's awareness regarding EBP through involving them in educational programs to encourage them to utilized EBP into patient daily care.
- Further study is needed to investigate the reapplication of the present study on another setting and on large sample size.

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