Nursing Care of the Preeclamptic Patients in Public Hospitals in Sana'a City-Yemen

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Abstract

Background: Preeclampsia is a serious public health problem that affects the group of pregnant women. Aim: To assess the nursing care of the preeclamptic patients among nurses in public hospitals in Sana'a City. Methods: A descriptive cross-sectional study was carried out from December 2018 to April 2019. Eighty four of the nurses were participated in this study. A stratified sampling was applied to select the sample size from 4 major public hospitals, the research team collected all data personally by handing out a structured questionnaire. SPSS was used to analyze data. Results : The results of the study showed that (47.6%) of the nurses were in the age 20-25 years. The majority 76.2% had diploma degree and 72.6% have 1-5 years' experience. 72.6% of the nurses did not received training courses about preeclampsia. 42.8% had optimum knowledge on risk factors for developing preeclampsia,(57.1%) had optimum knowledge on serious sign of severe preeclampsia,(32.1%) had optimum information on progresses from mild preeclampsia to severe. (41.7%) of the nurses had optimum knowledge on indication for delivery of preeclamptic mother. (10.7%) of the nurses had optimum knowledge on the signs of HELLP syndrome. (22.6%) of the nurses knew how to monitoring fetal wellbeing of preeclamptic mother. 44% of the nurses had optimum knowledge on plan a diet for preeclamptic patients, (46.4%) had adequate knowledge about the care before administer of MgSO4, (58.3%) had adequate knowledge about the nursing care of severe preeclampsia and (44%) had adequate knowledge about the intrapartum nursing care of preeclamptic patients. Conclusion: We concluded that inadequate knowledge of current management preeclampsia. Increasing knowledge and practice of nursing staff through the courses training and workshop.

Introduction

Preeclampsia is multisystem disorder of unknown etiology characterized by development of hypertension to the extent of 140/90 mmHg or more with proteinuria induced by pregnancy after the 20th week in previously normotensive and non-protein uric woman[1]. The disease has severe obstetrics implications for decades has been located at the international level as one of the three major causes of maternal death[2]. Hypertensive disorders complicates nearly 12-22% of all pregnancies[3] with preeclampsia remaining the leading cause seen in up to 10% of the pregnancies[4]. Globally preeclampsia is a leading cause of maternal and infant illness and death. By conservative estimates, these disorders are responsible for 76,000 maternal and 500,000 infant deaths each year[5]. Preeclampsia is one of the major causes of maternal and perinatal morbidity and mortality worldwide[4]. Preeclampsia affects approximately 2-8% of all pregnancies worldwide[6]. Ten million women develop preeclampsia

each year around the world. Worldwide about 76,000 pregnant women die each year from preeclampsia and related hypertensive disorders. And, the number of babies who die from these disorders is thought to be on the order of 500,000 per annum[7,8]. Pre-eclampsia and eclampsia account for about 9% of maternal deaths in Africa[9].

Risk factors for preeclampsia includes multiple gestation, chronic hypertension, diabetes, kidney disease or organ transplant, first pregnancy, obesity, age more than 40 or under 18 years, family or past history of preeclampsia, polycystic ovarian syndrome, autoimmune disorders such as SLE, rheumatoid arthritis, sarcoidosis and multiple sclerosis, In-vitro fertilization, hyadatidiform mole[10] etc. Defective placentation remains the major etiology behind preeclampsia. The nurse has in a unique position to take care of preeclampsia patients and prevent certain complication. This seems to indicate a need for current assessment of nurses' knowledge regarding preeclamptic patient.

Aim of the study
To assess the nursing care of the preeclamptic patients among nurses in public hospitals in Sana'a City-Yemen

Subjects and Methods
A descriptive cross-sectional study was done to assess the nurses knowledge regarding nursing care of the preeclamptic patients in public hospital in Sana'a City during the period from December 2018 to April 2019. This hospital were chosen because it is the main public hospitals in Yemen where most pregnant women deliver and it is the referral hospitals for all Yemenis women namely: Al-Thowrah, Al-Sabeen, Al-Kuwait and Al-Jomhury hospitals. All Yemeni nurse work in obstetrics and gynecology word in 4 public hospital during period of study and agree to participate in the study were included.

Due to small sample size of nurses working in obstetric ward were admitted to the study was 84 nurse.

Stratified simple random sampling was administered. This is the method that is used to draw a sample from a study population in such a manner that the sample will give a representative picture of the study population. The hospitals were divided into strata, then selection of nurses to be sampled from each stratum was done by probability proportional sampling in order to ensure that all nurses in public hospitals have the same probability of selection irrespective of the size of their cluster. The sample fraction was used to obtained sample size of each stratum. The sample fraction = required sample size / Total population of nurse and multiplied by total number of nurse in each hospital. Data collection was done over a period of 8 weeks. Self-administered questionnaire was applied as a method for data collection. The design of the questionnaire was based on an extensive literature research.

The questionnaire was included 21 closed and multiple choices questions. A questionnaire was divided into 3 sections namely; 1). Demographic data of nurses (Age, level of education, work experiences, training courses and 2). knowledge regarding the nursing care of the preeclamptic patients which includes (definition, cause and risk factors of preeclampsia, serious sign of severe preeclampsia, monitors the fetal wellbeing of preeclamptic mother, encourage bed rest of preeclamptic mother, preeclampsia mother needs weight gain measuring every day, plan a diet for preeclamptic mother, progresses from mild preeclampsia to severe, administration of MgSO4 nurse

has, determines the a sign of magnesium sulfate toxicity, knowledge on nursing care of severe preeclampsia, indication for delivery of preeclamptic mother, intrapartum nursing care of preeclamptic mother, HELLP syndrome signs, effect of preeclampsia on maternal and child). 3). Barriers and suggestions in managing preeclamptic patients. A pilot study was performed on 10% of the nurses using the same setting and questionnaire to assess the clarity and feasibility of the study. The nurse of the pilot study were excluded from the actual study. All ambiguity and inaccuracies were addressed as identified in the pilot study. Validity was established for face and content validity by a panel of three expertise's who revised the tools for clarity, relevance, applicability, and comprehensiveness for implementation and according to their opinion minor

modifications was applied. SPSS program, version 20 was used to analyze data. Descriptive analysis included frequency, percentage. X^2-test was used to test for significance association between variables. Level of significance selected for this study was p-value<0.05. Approved to conducted the study was obtain from managers of hospitals. Data were collected after oral informed consent was taken from the nurses.

Results
Demographic Data of nurses
The results of the study showed that 40(47.6%) of the nurses were in the age 20-25 years. As regards to level of education the majority 64 (76.2%) had diploma degree. 52 (61.9%) were married and 61(72.6%) have 1-5 years' experience. 61 (72.6%) of the nurses did not received training courses about preeclampsia. Table 1.

Table 1: Demographic characteristics of nurses

Demographic characteristics	F	%
Age (years)		
• 20-25	40	47.6
• 26-31	25	29.8
• 32-37	6	7.1
• >37	13	15.5
Level of education		
• Diploma degree	64	76.2
• BSc. Degree	17	20.2
• Master degree	3	3.6
Marital status		
• Married	52	61.9
• Unmarried	32	38.1
Work Experiences (years)		
• <5	61	72.6
• 5-10	10	11.9
• >10	13	15.5
Training courses in care of preeclamptic patients		
• Yes	23	27.4
• No	61	72.6

General knowledge about preeclampsia
The results of the study on the definition of preeclampsia showed that, 56 (66.7%) knew the correct definition of pre-eclampsia and 19 (22.6%) of the nurses said they did not know the definition of preeclampsia. As regards to the risk factors of preeclampsia, 36(42.9%) of the nurses had adequate knowledge about risk factors of preeclampsia. The knowledge of the nurses about serious sign of sever preeclampsia, more than half 48 (57.1%) of the nurses chosen more than one serious sign. The reason to encourage bed rest of preeclamptic mother, most of the nurses 38(45.2%) answered to reduce BP. Regarding progress from mild to severe signs indicate that only 27(32.1%) had correct answer. Table 2. A significant relationship was found between general knowledge about preeclampsia and level of education, experiences and training courses in care of preeclamptic patients (p-value<0.05).

Table 2: General knowledge about preeclampsia among nurses

Statement	F	%
Definition of preeclampsia		
• Hypertension develops after 20 weeks a gestation characterize by high BP and proteinuria	56	66.7
• Is a life threatening condition in pregnant woman or woman is in labor or within 42 days after birth from seizures	9	10.7
• Don't know	19	22.6
Risk factors for developing preeclampsia		
• Null parity	1	1.2
• Chronic hypertension	26	31.0
• Age above 35 years	6	7.1
• Family history or past history of preeclampsia	5	6.0
• Obesity	1	1.2
• Kidney diseases	2	2.4
• All of the above	36	42.8
• Don't know	7	8.3
Serious sign of sever preeclampsia		
• Severe headache or pressure in the head	6	7.1
• Double vision	5	6.0
• Pitting edema	18	21.4
• Nausea and vomiting	1	1.2
• All of the above	48	57.1
• Don't know	6	7.1
Encourage bed rest of preeclamptic mother		
• To improve utero-placental blood flow	11	13.1
• To reduce BP	38	45.2
• To encourage growth of the fetus	6	7.1
• All of the above	21	25.0
• Don't know	8	9.5
Progresses from mild Preeclampsia to severe		
• BP160/110mmHg	21	25
• Pulmonary edema or cyanosis	8	9.5
• Impaired liver function	11	13.1
• All of the above	27	32.1
• Don't know	17	20.2

Indication for delivery of preeclamptic mother

The results of the study regarding to knowledge of the nurses about indication for delivery of preeclamptic mother, 35(41.7%) of the nurses had adequate knowledge. Table 3.

No significant relationship between knowledge about indication for delivery of preeclamptic mother and level of education, experiences and training courses in care of preeclamptic patients (p-value>0.05).

Signs of HELLP syndrome

The results of the study regarding to knowledge of the nurses about signs of HELLP syndrome, 34(40.5%) of the nurses were don't know the signs of HELLP syndrome and only 9(10.7%) of the nurses had adequate knowledge about signs of HELLP syndrome. Figure1.

A significant relationship between knowledge about the signs of HELLP syndrome and level of education and experiences (p-value<0.05) but not for training courses in care of preeclamptic patients (p-value>0.05).

Monitoring for mother and fetus

As regards to monitoring fetal wellbeing, only 19 (22.6%) of the nurses knew how to monitoring fetal wellbeing of preeclamptic mother while 54(64.3%) of the nurses were measured mother weight every day. Table 4.

No significant relationship between knowledge about monitoring of mother and fetus and level of education, experiences and training courses in care of preeclamptic patients (p-value>0.05).

Table 3: Indication for delivery of preeclamptic mother

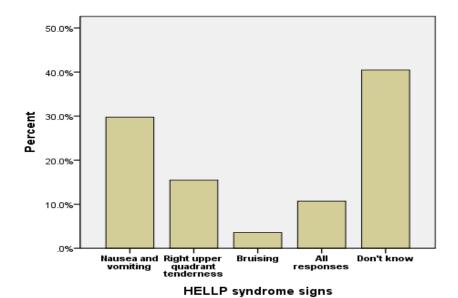| Indication for delivery of preeclamptic mother is:	F	%
• Signs of fetal distress	5	6.0
• Uncontrolled BP	29	34.5
• Abruption placenta	7	8.3
• All of the above	35	41.7
• Don't know	8	9.5

Figure 1: Knowledge of nurses about signs of HELLP syndrome

Table 4: Monitoring of fetal and measuring weight of preeclamptic mother

Statement	F	%
Monitoring fetal wellbeing of preeclamptic mother		
• Fetal heart rate with doppler or electronic fetal monitors	42	50.0
• Measure fundal height in cm from symphysis pubis to top of the fundus	13	15.5
• All of the above	19	22.6
• Don't know	10	11.9
Measuring mother weight every day		
• Yes	54	64.3
• No	30	35.7

Care of preeclamptic patients

As regards to plan a diet for preeclamptic patients 37 (44%) of the nurses had adequate knowledge about plan a diet for preeclamptic patients. As regards to care before administer of MgSO4, 39 (46.4%) of the nurses had adequate knowledge about the care before administer of MgSO4. 49 (58.3%) of the nurses had adequate knowledge about the nursing care of severe preeclampsia. Regarding to intrapartum nursing care of preeclamptic patients, 37(44.0%) of the nurses had adequate knowledge about the intrapartum nursing care of preeclamptic patient. Table 5.

Table 5: Nursing care of preeclamptic mother among nurses

Statement	F	%
Plan a diet for preeclamptic patients		
• Low fat	5	6.0
• Sodium restriction	31	36.9
• Rich protein	5	6.0
• All of the above	37	44.0
• Don't know	6	7.1
Care before administer of MgSO4		
• Explained purpose of administration to patients	6	7.1
• Filled the correct dose	9	10.7
• Monitored vital signs	25	29.8
• All of the above	39	46.4
• Don't know	5	6.0
Nursing care of severe preeclampsia		
• Monitor fetal heart sound	3	3.6
• Record urine output every 4h	6	7.1
• Monitor of blood pressure every 4h	19	22.6
• All of the above	49	58.3
• Don't know	7	8.3
Intrapartum nursing care of preeclamptic patient		
• Measured blood pressure half hourly	30	35.7
• Measured pulse half hourly	9	10.7
• Assess the degree of the hyperreflexia	5	6.0
• All of the above	37	44.0
• Don't know	3	3.6

Effect of preeclampsia on the mother and fetus

As regards to the effect of preeclampsia on the mother 28 (33.3%) of the nurses had adequate knowledge about the effect of preeclampsia on the mother while 36 (42.9%) of the nurses knew the effect of preeclampsia on the fetus. Table 6.

Table 6: Knowledge about effect of preeclampsia on the mother and fetus

Statement	F	%
Effect of preeclampsia on mother		
• Insufficiency utroplacental	11	13.1
• Renal failure	22	26.2
• Abruption placenta	8	9.5
• All of the above	28	33.3
• Don't know	15	17.9
Effect of preeclampsia on fetus		
• Perinatal death	19	22.6
• Preterm delivery	16	19.0
• IUGR (intra uterine growth restriction)	4	4.8
• All of the above	36	42.9
• Don't know	9	10.7

Barriers to care of preeclamptic patient

The results of the study regarding to knowledge of the nurses about the barriers to care of women with preeclampsia, 43 (51.2%) of the nurses chosen more than one barriers followed by 17 (20.2%) were answered lack of knowledge and practices about preeclampsia was the barriers. Table 7.

Suggestions to promote preeclampsia

Table 8 shows opinions to promote preeclampsia. 59 (70.2%) of the nurses were chosen more than one suggestions to promote preeclampsia followed by 8 (9.5%) were stated training and rehabilitation courses for staff should be apply.

Table 7: Barriers to care of preeclamptic patient

Barriers to care for women with preeclampsia	F	%
• Lack of staff or lack of sufficient number of nurses	13	15.5
• Lack or irregular availability of medicines	6	7.1
• Lack of knowledge and practices about preeclampsia	17	20.2
• Absence of special sections for the treatment of preeclampsia	5	6.0
• More than one option	43	51.2

Table 8: Suggestions to promote care of women with preeclampsia

Suggestions to promote preeclampsia	F	%
• Training and rehabilitation courses	8	9.5
• Provide enough nurses	4	4.8
• Provision of medicines for patient care	5	6.0
• Provide tools for patient care	2	2.4
• Provide a special room for the care of preeclamptic patient	6	7.1
• More than one option	59	70.2

Discussion

Regarding training course about preeclampsia the study showed that most of the nurses 72.6% did not received training courses. Regarding years of experiences, it was found that 72.6% of the nurses had 1- 5 years in the obstetrics and gynecology department. This finding in line with Ola et al., (2013).[11] they find that nurses knowledge mostly depend on their experience.

In the present study finding reported that only 33.3% did not known definition of preeclampsia correctly. This finding was disagree with study conducted in Tanzania which is showed that (44.1%) did not known definition of preeclampsia[12] and study conducted by Saria (2014)[16] which is showed that (48%) of the nurses did not known the definition of preeclampsia. At the same time it was approximately consistent with study in Eastern cape which is showed that (27.7%) of the nurses had incorrect answer[13]. This result a quite close to a quantitative correlation research design was done by Stellenberg and Ngwekazi, 2016[14] who were found the gab in the knowledge of nurses regarding hypertensive disorders during pregnancy was identified. This finding was also consistent with the study conducted in Tanzania[12]. and with the study conducted by Nompume (2010)[13].

In the present study 42.9% of the nurses did known the risk factors of preeclampsia. This finding was inconsistent with study conducted in Tanzania which showed that (86%) knew the risk factors of preeclampsia[15].

In present study only fifty seven percent of nurses answered the questions on the serious sign of sever preeclampsia.

Our study revealed that, 22.6% of nurses had the optimum knowledge on the assessment fetal wellbeing in cases of preeclampsia, this study inconsistent with study conducted by Nompume (2010)[13] which showed that the majority of the participants (75.2%) had correct answered about assessing fetal status.

Although rest of preeclamptic patients is improve utroplacental blood flow and reduce BP but result of this study showed that only 25% of the nurses did know why to encourage rest of preeclamptic patient. The result in this study is inconsistent with study in Eastern cape which is showed that (84.1%), of the participants had correct answer[13] that means their big deficit knowledge regarding this variable.

In regard to measuring the weight of the preeclamptic patient (64.3%) of the nurses knew about weight measuring of preeclamptic patient and 35.5% of them did not known. This study showed that 44% of nurses had optimum knowledge about diet of preeclampsia, the result in this study consistent with study conduct by Saria (2014)[16] but inconsistent with study in Eastern Cape which is showed that (80.7%) of the nurses had correct answer[13].

In our study only 32.1% of the nurses had optimum knowledge about the signs of progresses from mild to severe preeclampsia that means there is acute deficiency in knowledge in this variable. Knowledge about care of mgso4 before administration it will help to prevent complications and leads to early detection of side effects, this study revealed that, (46.4%) of the nurses had optimum knowledge on care of mgso4 before administration. This result in accordance with study conduct in India which showed that (96.3%) had correct answer[17].

Many study have been identified the risk factors for preeclampsia are obesity, chronic hypertension, diabetes, adolescent pregnancy, and first pregnancy, however the management aimed at primary prevention as calcium supplementation and low-dose aspirin, so far early detection of preeclampsia is considering very important to promote

maternal health and avoid complication on maternal and fetal outcomes[18,19] .

This study showed that (58.3%) of nurses had optimum knowledge about care of severe preeclampsia. Forty four percent of nurses knew the intrapartum care of preeclamptic mother. The current study found that only 10.7% of nurses had optimum knowledge about the signs of HELLP syndrome that means there is a big deficit knowledge regarding in variable. Our study consistent with study conducted by Saria (2014)[16] he reported that 64% of study sample did not know the signs of HELLP syndrome. Although the effect of preeclampsia in mother increase maternal mortality, unfortunately only 33.4% knew about effect of preeclampsia on maternal, this bad result need to be taken account. Although the complication of preeclampsia increases prenatal death, less than half 42.9% knew the effect of preeclampsia on the fetal. Preeclampsia still one of the major contributors to maternal and infant morbidity and mortality unfortunately.

Conclusion

This overall inadequate awareness and in-depth understanding of the health condition signifies that there could be an increase in maternal mortality and morbidity arising from preeclampsia since majority of the nurses were not aware of the nursing care of the preeclamptic patients.

Recommendations

We recommended to improvement of the knowledge of nurses working in obstetrics and gynecology word with regard to the assessment and management of women with preeclampsia.

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