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Effect of Informational need teaching program for maternity nurses on improving their knowledge about preeclampsia management

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Abstract

Aim of the Study: Assess the effect of informational need teaching program for maternity nurses on improving their knowledge about preeclampsia management.

Subjects and Method: Quasi- experimental research design (pre and posttest) was carried out in this study.

Setting: The study was done at the obstetric and gynecological departments in- patient, outpatient and family planning clinics at hospitals of ministry of health including: (specialized maternity hospital, Assiut general hospital and El-Eman general hospital).

Sample: 60 nurses were included specialized maternity hospital, Assiut general Hospital, and El-Eman general Hospital.

Tools: two tools used for data collection; self-administered semi-structured questionnaire and informational need teaching program.

Results: Nurse's knowledge as regard nursing care for preeclampsia in pre-test was unsatisfactory.

Conclusion: A statistical significant difference was found between score of knowledge before and after implementing the program.

Recommendations: Encourage nurses to on go to proceeding training in the form of workshops, training programs, conferences, and audit update nursing care related to preeclampsia. Establish library at the work place with recent scientific books and magazines in an Arabic language and budget should be allowed every year for the educational activities of nurses.

Keywords: Informational need, maternity nurses, knowledge of preeclampsia management

Introduction

Preeclampsia, a standout amongst four hypertensive disorders of pregnancy, need customarily been characterized as new-onset hypertension and also protein urea creating after 20 weeks' gestation. However, now understood to be progressive, a complex, multisystem disorder for an exceedingly variable presentation what's more an amount about possibly life-threatening complications. The American College of Obstetricians and Gynecologists task Force on hypertension over pregnancy need refined preeclampsia diagnostic criteria accordingly, what's more similarly as those disorder's pathogenesis need been all more unmistakably defined, new focuses to screening, prevention, diagnosis, and treatment have emerged (Anderson & Schmella,2017) [1].

Hypertensive disorders are the second heading reason for maternal deaths, continuously just behind bleeding, accounting for 14% of the greater part maternal deaths in the world and arriving at rates about up to 22% over Latin America (Say *et al*., 2014) [14]. It will be also foremost that over 10% for the sum pregnancies in the world happen with a few sort of hypertensive syndrome, arranged similarly as pre-eclampsia, eclampsia, gestational hypertension also constant hypertension (WHO, 2014) [18].

Pre-eclampsia may be a disorder that could happen after the twentieth week for pregnancy, throughout labor and up to 48 hours postpartum. It influences over 5-8% of pregnancies and is a condition that quickly evolves, characterized by increased blood pressure and vicinity for proteinuria. Some indications might a chance to be demonstrative from claiming this condition, for example edema - mostly on the face, around those eyes and hands; accelerated weight gain; nausea or vomiting; epigastric pain region locale that radiates of the upper limbs; cerebral pain what's more visual disturbances (blurred vision and/or cloudy); hyperreflexia, anxiety also tachypnea. However, the disease often progresses silently, that is without indicative signals Organização Mundial da Saúde (OMS, 2013) [13].

Nurses are would those to start professionals to have contact with pregnant women in obstetric emergency, there abouts it is key that nursing consideration may be guided by current scientific evidence (WHO 2012) [19]. The collection of data, careful physical examination also thoughtfulness regarding blood pressure qualities and different pre-eclampsia signals; early detection of cases; the collection and screening laboratory tests, especially 24 hours proteinuria furthermore fetal assessment; pushing What's more empowering those checking from claiming prenatal consultations; the correct

and rapid interventions, and call for help, requesting evaluation of anesthetist, administering oxygen, establishing caliber venous access and starting magnesium sulfate therapy; health education about pregnancy and childbirth and hospital discharge are actions that if carried out, ensure care and the reduction of fetal and maternal morbidity and mortality in these patients Silva *et al*., (2014) & Townsend and Drummond (2016) [17].

Significance of the study

Significance of the study: Maternity nurses play important roles as in early identification of high hazard elements of preeclampsia and its management, to ensure the wellbeing of the mother and her baby during all phases of pregnancy and delivery. They must be have knowledge about complications happen throughout pregnancy and how to deal with them (Murray & McKinney, 2013) [12]. The predominance about preeclampsia in developing countries reaches up to 16.7% also it will evaluated will represent around 40% to 60% of maternal deaths in developing countries (Endeshaw *et al*., 2014) [6].

The researchers prepared and designed informational need of maternity nurses to improve their performance about preeclampsia management, which to help the nurses to attain ideal performance and decrease complications that occur from preeclampsia.

Aim of the study was to

Assess the effect of informational need teaching program for maternity nurses on improving their knowledge about preeclampsia management

Research hypotheses

The maternity nurses will get adequate knowledge about care of preeclampsia after teaching program implementation.

Subject and Methods

Research Design

Quasi- experimental research design (pre and posttest) was used in this study.

Setting

The study was done at the obstetric and gynecological departments in- patient, outpatient and family planning clinics at ministry health hospitals including: (specialized maternity hospital, Assiut general hospital and El-Eman general hospital).

Sampling

60 nurses were included specialized maternity hospital 20 nurses, Assiut general Hospital 25 nurses, and El-Eman general Hospital 15 nurses. Participants were selected conveniently.

Tools

A set of self-administered semi-structured questionnaire developed by the researcher was used to collect the data.

Tool I: The questionnaires were divided into two parts:

Part 1: Socio-demographic Characteristics: which included variables; age, sex, marital status, qualification, experience years etc.

Part 2: This part included questionnaire contained well-defined questions about the knowledge about management of pre and post eclampsia and providing the sufficient information needed for care of preeclampsia.

Tool II: Informational need teaching program

The informational need teaching program was developed in simple Arabic language by the researchers based on literature review and researcher experience. Visual materials were prepared to be used in teaching and informational need teaching program consists of four parts:

Information about definition of preeclampsia, signs and symptoms and risk factors. Information about effect of preeclampsia on mother and fetus and diagnostic tests. Information about medical management including, dietary, fluid and magnesium sulfate and. nursing management including rest and sleep mange and observe magnesium sulfate toxicity.

Method

The teaching program was conducted on 3 phases:-

Phase I: Preparation phase

Ethical Consideration

- Written consent taken from director of the place and oral consent should be taken from members of study participates in the study. The aim of the study was explained for directors and every interviewed member. Members have ethical right to participate or refuse participation in the study; the information that obtained is confidential and used only for the purpose of the study.
- The content validity was reviewed by expertise opinion in obstetrics and gynecological nursing field.
- A pilot study was carried out before starting data collection on 10% from nurses (6 of them) included in the main study in order to test the clarity and applicability of including question and statement, content, feasibility and consistency of the tool to detect any ambiguity in the study tools. The pilot study has also served to estimate the time required to fill the form. It was included in the sample.

Phase II: Implementation phase

The process of data collection and implementation of teaching program consumed 6 months, in the period from December, 2017 to May, 2018.

The session time are spending in conference room in each hospital, it start at 8:30 Am. In the in-patient departments at previous mentioned setting, than other session spending in out-patient departments for nurses working in these places, it starts at 12:30 Pm. Needed explanations enquiries in addition to booklet in Arabic language. These teaching contents of the booklet were based on the pre assessment result. The program was conducted over 4 sessions four times per week to cover all information related to preeclampsia. Sessions were arranged to take place when nurses working during morning shift would be available, in an attempt to maximize attendance, The nurses were divided

into small group each group 3-7 nurses to the program not interfere with nursing daily work. Data was collected directly from the participants after taking their consent of participation.

Phase III: Evaluation phase

The evaluation was done by the investigator to assess nurse's knowledge. This was done through post assessment sheet after one month to evaluate the effect of the program on gaining nurse's knowledge toward preeclampsia.

Statistical analysis

All the data collected were coded numerically and entered into the SPSS version 22.0 software program for analysis. The descriptive analysis of data was presented as tables. A p-value less than or equal to 0.05 was considered significant.

Results

Table (1): showed the distribution of the nurses according to their personal characteristics. As regard age: Mean ± SD (Range) 47.15 ± 12.74 (23-58). Concerning their years of experience Mean ± SD (Range) 9.10 ± 6.81 (1-22).

Figure (1): showed the percentage of the studied the nurses were higher at Assiut general hospital less than half (41.7%).

Figure (2): Illustrated the level of education which reflected that more than half of the nurses (53.3%) were secondary education. While only 8.3% were university education.

Figure (3): showed the level of education affecting on knowledge score. For university education, there was a high knowledge in pre-test (Mean score= 38.40), compared to those with secondary education (Mean score= 27.88), and least score was in technical institute (Mean score= 23.87).

Figure (4): illustrated that nurses with years of experience (2-5 and 5-10 years) had adequate knowledge in pre-test (Mean score= 25.50 and 33.11) respectively, compared to those (< 2 and ≥10 years), this statistically significant.

Figure (5): illustrated in pre-test that nurses attended training courses had adequate knowledge (mean score= 30.28) compared to those studied nurses not attended (mean score= 26.07), this statistically significant. While in post-test shows no statistical significant association could be revealed between them.

Table (2): showed the mean knowledge in pre-test (27.22±9.36), and in post-test (54.28±3.94), which indicated a highly statistical significant at (P. value = 0.000).
NOTE: Statistical significant mean P value < 0.05

Figure (6): Illustrated the percentages of studied nurses with satisfactory knowledge in pre-test was only 20%, while it reached to the highest percent (100%) post program implemented.
***Note:** - Satisfactory ≥ 60 - Unsatisfactory <60

Table 1: Personal characteristics of the studied nurses (n=60)

Variables	No.	%
Hospital:		
Assiut General Hospital	25	41.7
Specialized Maternity Hospital	20	33.3
El-Eman General Hospital	15	25.0
Department:		
Outpatient	15	25.0
Inpatient	45	75.0
Age: (years)		
< 30 years	34	56.7
30 - 40 years	13	21.7
≥ 40 years	13	21.7
Mean ± SD (Range)	47.15 ± 12.74 (23-58)	
Level of education:		
University Education	5	8.3
Technical Institute	23	38.3
Secondary Education	32	53.3
Years of experience in the health field:		
< 2 years	13	21.7
2 - < 5 years	9	15.0
5 - < 10 years	16	26.7
≥ 10 years	22	36.7
Mean ± SD (Range)	9.10 ± 6.81 (1-22)	
Years of working in the field of gynecology and obstetrics:		
< 2 years	18	30.0
2 - < 5 years	8	13.3
5 - < 10 years	19	31.7
≥ 10 years	15	25.0
Attending training courses in the field of gynecology and obstetrics:		
Yes	16	26.7
No	44	73.3
Number of training courses:		

One	11	68.8
Two	4	25.0
Three	1	6.3

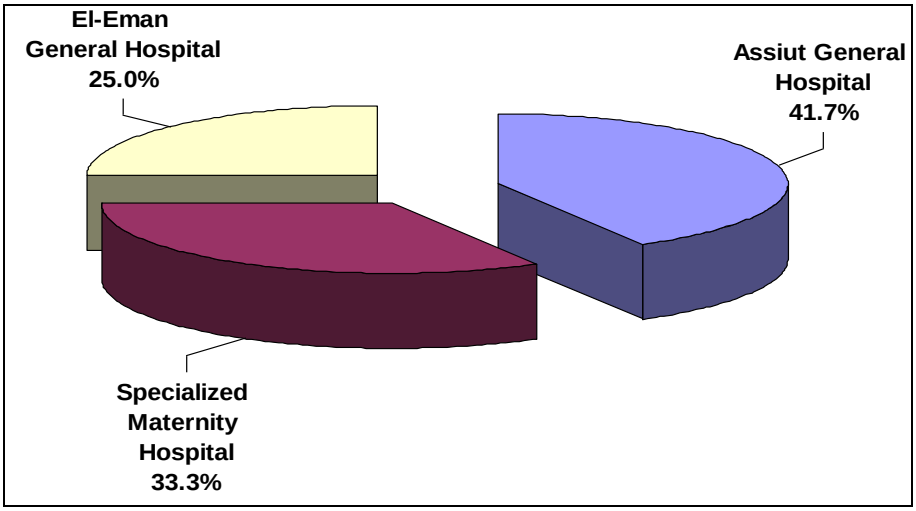

Fig 1: Distribution of the studied nurses according to place of work

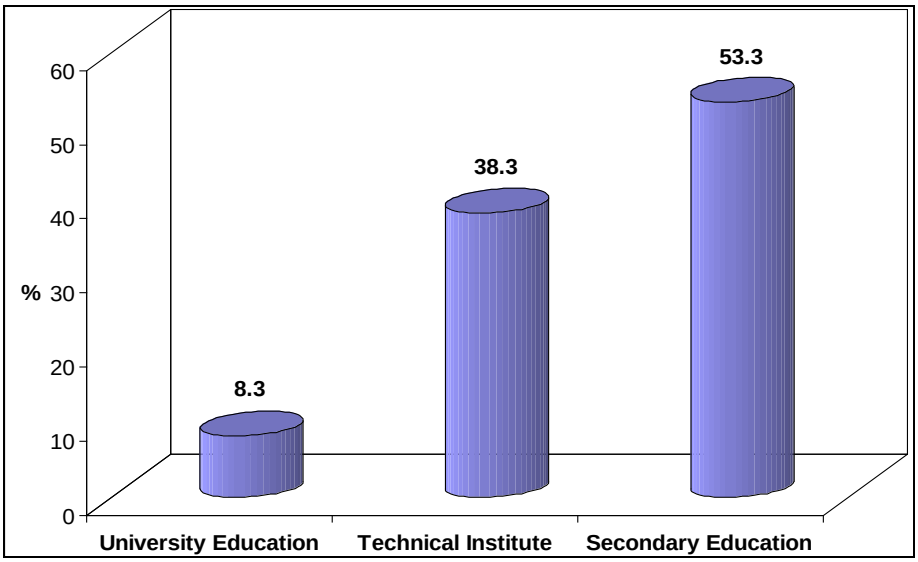

Fig 2: Distribution of the studied nurses according to level of education

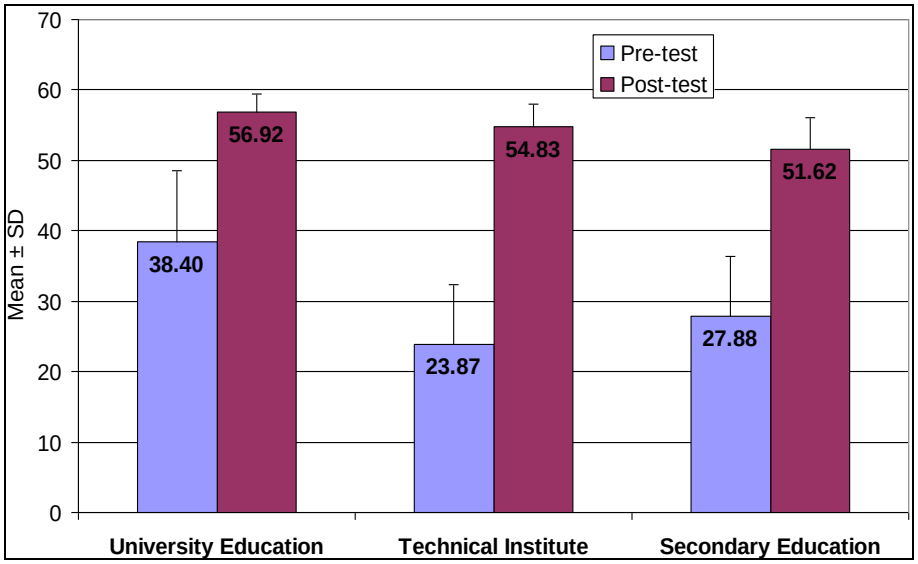

Fig 3: Relation the mean score of knowledge in pre and post-test related to level of education

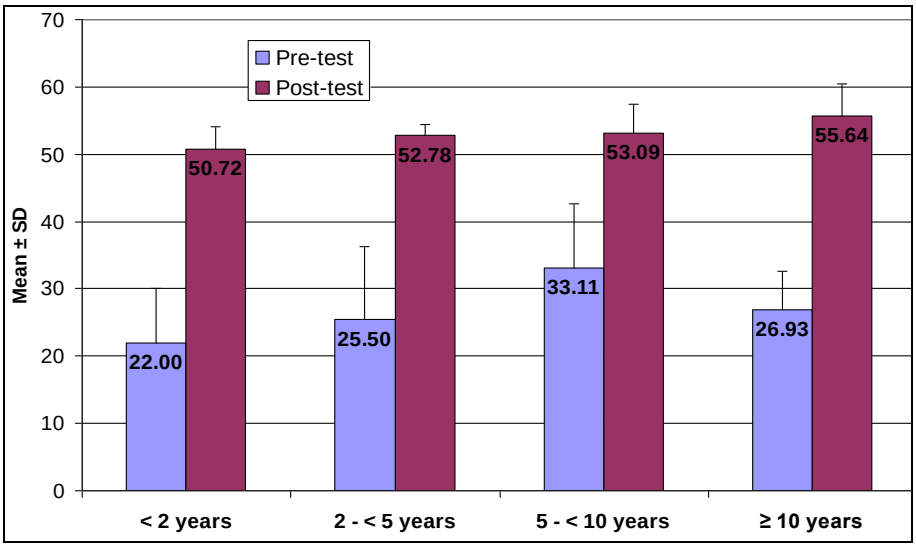

Fig 4: Relation the mean score of knowledge in pre and post-test related to Years of working in the field of gynecology and obstetrics

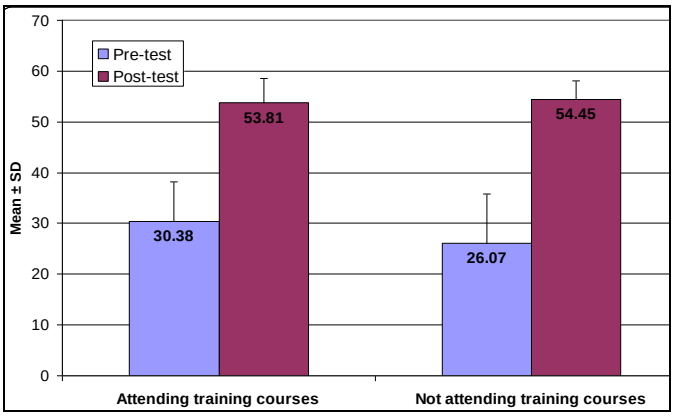

Fig 5: Distribution the mean score of knowledge in pre and post-test related to attending training courses in the field of gynecology and obstetrics

Table 2: Relation between nurses' knowledge about pre-eclampsia in pre-test and post-test

Knowledge	Pre-test (n= 60)		Post-test (n= 60)		P-value
	No.	%	No.	%	
Unsatisfactory	48	80.0	0	0.0	0.000*
Satisfactory	12	20.0	60	100.0	
Mean ± SD	27.22 ± 9.36		54.28 ± 3.94		0.000*

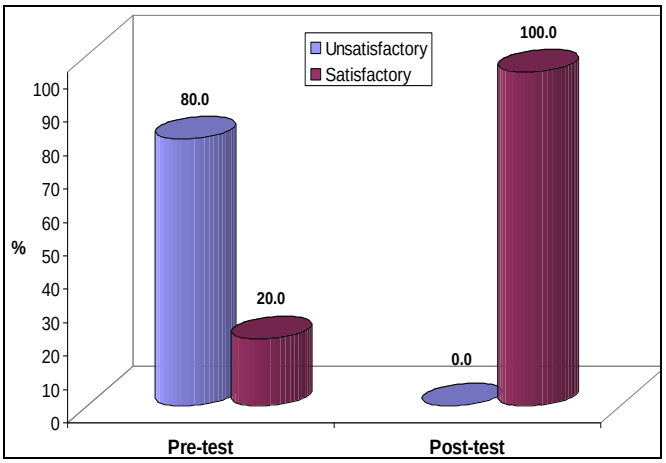

Fig 6: Distribution of knowledge about pre-eclampsia in pre-test and post-test

Discussion

Nurses play an important role in early detection of high risk factors of preeclampsia and its management. In addition, maternity nurses play an important role to ensure the safety of the mother and her baby during all phases of pregnancy and delivery. They must be knowledgeable about complications that can occur during pregnancy and how to deal with them (Murray and McKinney, 2013) [12].

Many studies found that health care providers in developing countries have limited training to manage patients with pregnancy induced hypertension (Thein *et al*., 2012; Bigdeli *et al*., 2013; Sheikh *et al*., 2016) [16, 2, 15]. The limited knowledge of health care providers plays an important role in the maternal morbidity and mortality due to pre-eclampsia in developing countries (Sheikh *et al*., 2016) [15].

The present study included 60 nurses and it was found that more than half of them their age were less than 30 years. It was found that 53.3% had secondary education and 38.3% had Technical Institute. Only 8.3% of them had university education.

In this study 26.7% of the nurses received training courses in gynecology and obstetrics and more than two thirds of them received only one training course. These results can be explained as those nurses worked in the hospitals of the Ministry of Health which lacked of the continuous educational programs. These results are similar to the findings of (EL-Bahyetal., 2013) who reported that half of the studied subjects were in the age group ranging between 20 to less than 30 years old, the majority of the nurses (86.7%) had nursing diploma and 6.7% of the subjects years of experience in nursing of the nurses were around 10.8±9.3 (EL-Bahy *et al*., 2013) [4]. Mousa, *et al*. (2016) found that 72% of the nurses have more than 6 years in the obstetrics and gynecology department. More than half 52% of the nurses are diploma nurse.

The measurement of blood pressure is an important predictor for cases of preeclampsia. The question about systolic and diastolic blood pressure measurement for women suffering of pre-eclampsia answered correctly by 91.7% during pretest while the correct answers increased to 98.3% after the educative interventions. These findings were nearly similar to the findings reported by Lohre and Liljevik

(2016) which confirmed that nearly 65% of health care workers knew that the blood pressure is high in pregnant woman when is > 140/90 mm Hg.

The definition of pre-eclampsia according to the World Health Organization (WHO) is known as a state of high pressure with albumin in urine accompanied by edema that often occurred after the first trimester of pregnancy. In the present study 85% of the participants gave the correct answer about the preeclampsia as a state of high pressure with albumin in urine accompanied by edema and 58.3% answered correctly about pre-eclampsia is often occurred after the first trimester of pregnancy, then after the intervention education program all participants correctly indicated the definition and 88.3% knew the onset of the condition. The level of variation is can be due to uncertainty regarding definition of hypertension.

These results were better than (Lohre and Liljevik, 2016) study nurse their study as 56% of the participants had adequate knowledge of the definition of pre-eclampsia. Mousa *et al*., (2013) [9] conducted a study evaluated the knowledge of the nurses about preeclampsia at Minia Maternal and Child University Hospital and they found that 72% of the nurses had a correct answer but uncompleted about definition of the pre-eclampsia in pre -test and 72% of nurses their answer was correct and complete in post -test.

Regarding the knowledge about the high risk groups for pre-eclampsia. It was found that there was unsatisfactory of the participants' knowledge about the identification of high risk group as 15% of the studied nurses couldn't identify any high risk group while the vast majority gave the correct answer after the educative interventions.

This finding was similar to the study of (EL-Bahy *et al*., 2013) [4], who found that 6.7% of the studied nurses correctly identified the high risk group which reached 96.7% in the immediate post-test and did not changed after follow-up test. In another study, Jiji *et al*. (2014) [8] concluded that 55.1% of the health care workers in the health care facilities in Sebha, Libya had adequate level of knowledge about the pregnancy induced hypertension. Nurses who had adequate knowledge about risk factors of preeclampsia were 88.7%.

The most of participants in this study were not knowledgeable about the signs and symptoms of pre-eclampsia. The vast majority of nurses their knowledge improved markedly after the educational program. Our findings similar with studies carried out by (EL-Bahy etal., 2013) [4].

Mousa *et al*. (2013) [9], they found that 72% of the nurses had an answer as correct but incomplete in pre- test and 72% of nurses answer as correct and complete in post- test.

The results of this study were similar to the other studies. For example, Lohre and Liljevik (2016) reported that about 18% of the health care workers had adequate knowledge on how to manage hypertension during pregnancy.

A study by Munirathnamma and Lakshmamma (2013). Indicated that staff nurses had more knowledge (89.1%) in the area of nursing management, definitions and risk factor and clinical manifestations, and less knowledge (54.3%) in the area of management and diagnosis of preeclampsia.

In the present study the mean score of knowledge ± SD was 27.22 ± 9.36 pre-test and 54.28 ± 3.94 post-test with statistically significant difference. One fifth of the studied nurses had satisfactory knowledge. The lack of knowledge in pre-test evaluation may be because of the relative low level of the education as more than half of them had secondary education and only 8.3% had university education.

In addition, the studied nurses were working in the hospitals of Ministry of Health so they had not the opportunity to attend regular academic meetings and seminars so nurses depend on their clinical knowledge gained from previous formal teaching in their faculties and nursing schools, lack of time and workload in obstetric departments may be another cause for infrequently training courses attained by the participants. On the other hand, the terminology of preeclampsia is confusing and several terms are commonly applied.

Mousa *et al*. (2013) [9] reported that the levels of knowledge about preeclampsia among study sample in pre and post -test. It was found that the mean of knowledge in pre -test was 19.9 (59%) and in post- test 24.8 (74%). The SD was 6.7 and 2.4 in pre and post- test, respectively.

Munirathnamma and Lakshmamma (2013) [11] Found that the overall mean knowledge score of the staff nurses regarding management of pregnancy induced hypertension was 25.3 the mean percentage (74.35) and standard deviation 5.3.

The educational program has a significant and improvement impact on the nurse's knowledge regarding preeclampsia which markedly improved after the intervention educational program as the results of the present study indicate that there is statistically significant difference between pre and after the application of the educational program. All studied nurses had satisfactory score of knowledge post-test.

These results were proved by other researchers such as Munirathnamma Lakshmamma (2013) [11] who found that there was a significant improvement in the nurses' knowledge score about pregnancy induced hypertension. Also, El-Bahy *et al*. (2013) [4] indicated improvement of nurses' knowledge in the all items. These improvements were statistically significant in the all items. The most prominent improvements were related to definition. This reached 100.0% in the immediate post-test and remained at the level at follow-up test.

Other studies supported these results such as EL-Bahy *et al*., (2013) [4] who examined the impact of educational program for maternity nurses in Port Said Hospitals about pregnancy induced hypertension and who found that a significant and improvement impact on the nurse's knowledge. Mousa *et al*. (2013) [9] found that the mean of knowledge in pre- test is 19.9 (59%) and in post -test 24.8 (74%). On the opposite side, Eleutério da Silva and her team (2010) [5] reported a statistically significant increase in the nurses' correct answers pre and post-educative interventions.

In the present study it was found that the level of education, years of working in the field of gynecology and obstetrics and attending training courses in the field of gynecology and obstetrics were the demographic characteristics which showed association with knowledge may be related to life cumulative experience as alone the years of practices. On the other hand, there are no statistically significant differences regarding age, place of work and years of experience in the health field.

The results of this study were in agreement with the findings

of the Bahyetal.,(2013) [4] which indicated that there is no significance association between knowledge level of staff nurse and selected variable like age and professional qualification but significance association was found between knowledge level and total year of experiences and in-service education.

Jaffar (2013) [7] reported that 70% of nurse-midwives who had degree level of profession had good knowledge (70 - 84%) regarding pregnancy induced hypertension. In addition age and professional qualification were not statistically significant associated with nurse‘s knowledge but significant association was found between place of getting expertise, on job training workshop and total year of experiences. In another study, it was found that nurses knowledge mostly depend on their experience (Chiari *et al*., 2010) [3].

Conclusions

Nurse's knowledge regarding nursing care of preeclampsia in pre-test was unsatisfactory. The informational need educational program successful in achieving its goal of upgrading or improving their knowledge. A statistical significant difference was found between score of knowledge before and after implementing the program.

Recommendations

The hospitals must be provide frequent and schedule In-services training program for nurses. To help in improving their practice and update their knowledge. Encourage nurses to attend continuing education in the form of workshops, conferences, training programs and review update nursing care related to preeclampsia. Establish library at the work place with recent scientific books and magazines in an Arabic language and budget should be allowed every year for the educational activities of nurses. Provision of adequate resources and facilities is crucial for introduce the services for pre eclamptic patient.

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