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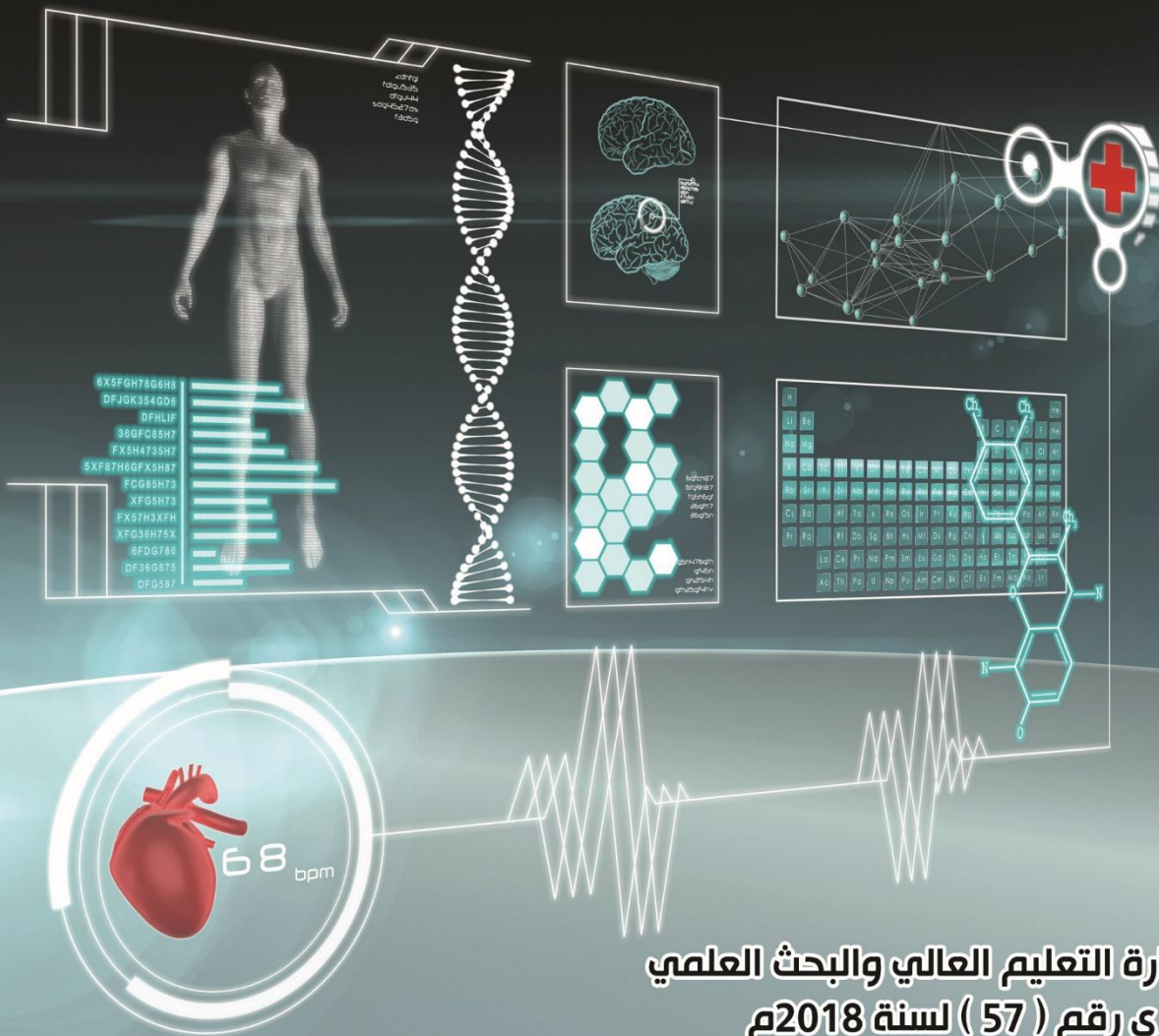


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Competences of Midwives Toward Management of Eclampsia at Public Hospitals in Sana'a City-Yemen

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Abstract

Background: Eclampsia is new onset of grand mal seizures activity and/or unexplained coma during pregnancy or post-partum in a woman with signs and symptoms of preeclampsia. **Aim:** To identify the competences of midwives toward management of eclampsia at public hospitals in Sana'a city. **Methods:** A descriptive cross-sectional study was carried out from May to June 2018. This study was conducted at three public hospitals in Sana'a city-Yemen. Stratified random sampling was administered to selected 50 midwifery working in labor ward at public hospitals. Data collection were done through questionnaire. The questionnaire was consisted of demographic characteristics, general competences on eclampsia and competences of midwives toward emergence care in managing eclamptic patient. A pilot study was performed on 10% of the study sample. Data were analyzed used SPSS program. X²-test was used to determine the association between variables and p-value<0.05 was considered the level of significance. **Results:** The majority of midwives (84%) had correct competence on earliest symptoms of eclampsia and (60%) had correct competence on symptoms of eclampsia. 46% had correct competence on advance symptoms of eclampsia and (14%) of midwives had correct competence on risk factors of eclampsia. 4% had correct competence on immediate care during convulsions and (98%) were able to mention all measures needed to care eclamptic patient after convulsion. The majority of midwives (90%) did not able to mention correctly the kind of assessment needed after convulsions. **Conclusion:** Half of the midwives had poor competences toward management of eclampsia. Continuing education and mentorship program are recommended for enhancing the competences of midwives in managing eclampsia.

Keywords: Eclampsia; Competences; Midwives; Management; Yemen.

Introduction

Eclampsia proceeds to be a major problem, particularly in developing countries that, adding significantly to high maternal mortality and mobility rate. Eclampsia is new onset of grand mal seizures activity and/or unexplained coma during pregnancy or post-partum in a woman with signs and symptoms of pre eclampsia¹.

Eclampsia is the occurrence of convulsions in association with signs and symptoms of preeclampsia. Primary symptoms of eclampsia are seizures or convulsions in a pregnant woman, woman in labour or within 42 days after delivery who does not have a history of epilepsy.

Other symptoms of eclampsia include muscle aches and pain, agitation, loss

of consciousness and stroke, coma and death can occur to a mother and fetus^{2,3}. Family history of eclampsia or previous history of pre-eclampsia and eclampsia, patient above 35 years of age, teenage pregnancy, multi-fetal gestation, primigravida and poor outcome of previous pregnancies including intrauterine growth retardation, abruption in placenta and fetal death are the risk factors associated with eclampsia^{4,5}.

Eclampsia affects more than 5% of all pregnancies and contributes to almost 15% of maternal deaths worldwide⁶. Approximated case fatality rate as a result of eclampsia is 14 times higher in developing countries compared to developed countries⁶. In developing countries, the prevalence of eclampsia differs widely, from 1 in 100 to 1 in 1700⁷. This problem has become a common problem in developing countries because of illiteracy, poverty, inadequate health awareness and education, and sometimes the superstitious beliefs prevent women from seeking medical advice during pregnancy. In developed countries, eclampsia complicates about 1 in 2000 deliveries². Eclampsia is a potentially deadly disorder of pregnant women; the problem remains a vital cause of maternal mortality throughout the world, accounting for almost 50,000 deaths worldwide⁸.

Midwives can play a major role in prevention of maternal death related to eclampsia. Competences of midwives in managing eclampsia is essential in reducing maternal morbidity and mortality. There is no previous studies conducted in Yemen to assess the midwives competences in managing eclampsia.

Aim of the study

To identify the competences of

midwives toward management of eclampsia at public hospitals in Sana'a.

Subjects and Methods

A descriptive cross-sectional study was carried out to identify the competences of midwives toward managing eclampsia working in labor ward at public hospitals in Sana'a City. This study was conducted from May to June 2018.

The study was conducted at three public hospitals in Sana'a city. This hospitals were chosen because it is the main public hospitals in Yemen where most pregnant women deliver and teaching hospitals for the faculties of medical and health sciences. All midwives working in public hospitals were enrolled in this study because all midwives can be reallocated to the maternity wards when necessary . Stratified 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. A stratified random sample was applied to select the sample of midwives, 50 (57.5%) of the total population of 87 as planned.

Sampling used to obtain study participant where midwives were divided into strata according to their working hospitals. Then selection of midwives to be sampled from each stratum was done by probability proportional sampling in order to ensure that all midwives in public hospitals have the same probability of selection irrespective of the size of their cluster. The sample fraction was used to get sample size of each unit/ward. The sample fraction obtained by dividing required sample size with total population as follows; required sample size=50. Total population of midwives= 87. Sample

fraction = required sample size / Total population of midwives = 50/87 multiplied by total number of midwives in each hospital to obtain representative sample in each ward, as a follow: Al-Thowrah hospital=14, Al-Sabeen hospital=17 and Al-Jomhury hospital=19. As a rule, sample size calculation is necessary to reflect the actual number obtained from the study population. The estimated sample size was 50 midwives and was calculated by using the formula of sample size: $n = N p(1-P)/d^2/z^2 1-\alpha/2 (N-1)+P*(1-P)$. Taken into consideration the following: N= population size = 87, p= proportion of nurses-midwives with knowledge on management of eclampsia in Mnazi Mmoja Hospital, Zanzibar =42% (Jaffar, 2013)⁹. d= confidence limits as % of 100 (absolute+/- %) = 9% and Z = Standard deviation of 1.96 corresponding to 95% confidence interval $\alpha = 0.05$. Therefore the sample size was 50 midwives .

Self-administered questionnaire was applied as a method for data collection. The questionnaire was completed within 30 minutes. The questionnaire was developed for the purpose of this study was a structured questionnaire consisting of closed and multiple choices questions. A questionnaire was divided into demographic data of midwifery, general competences on eclampsia and competences on emergence care in managing eclamptic patient.

A content validity was assured through an extensive literature review^{8,9,10,11}, representatives of the relevant population and content experts. Experts were consulted to assist with the appropriateness of the individual questions in the questionnaire, thus helping to establish content validity for the instrument. Two experts were

consulted to evaluate the content validity of the instrument.

The reliability and validity of the study was further assured by testing the instrument during a pilot study.

A pilot study was performed on 10% of the study sample using the same setting and questionnaire to assess the clarity and feasibility of the study. The participants of the pilot study were excluded from the actual study.

Data were analyzed by using Statistical Package for Social Sciences Program (SPSS) version 20. Descriptive analysis, which included frequency and percentage was used. The knowledge levels were as follows: All midwives had good knowledge score was (24-32), scored (16-23) leveled moderate, scored (<16) leveled poor. Chi-square test was used to find out the association between variables and the level of significance selected for this study was < 0.05.

The consent form was obtained from the college of medical sciences, Al-Razi University, as well as the managers of hospitals where the research was conducted. Informed oral consent was obtained from the participants. Confidentiality and privacy concerning all information were ensured.

Results

Demographic data of midwives

Table 1 presents the demographic characteristics of midwives. It was showed that (68%) were unmarried. The majority (86%) of midwives had diploma degree. The age mean±SD was 28.5±5.4 years. The mean±SD of work experiences 7±5.9 year. More than half (60%) of midwives were not attended courses training in eclampsia. In other hand, the majority of study midwives (56%) hadn't guideline at work to manage eclampsia

Table 1: Demographic characteristics of midwives (N=50)

Demographic data	F	%
Age range		
• 20-30 years	36	72
• 31-40 years	12	24
• >40 years	2	4
Marital status		
• Married	16	32
• Unmarried	34	68
Level of education		
• Diploma in nursing	43	86
• BSc in nursing	7	14
Course training on eclampsia		
• Yes	20	40
• No	30	60
Year of work experiences		
• <5	30	60
• ≥5	20	40
Present of guideline at work on eclampsia		
• Yes	22	44
• No	28	56

General competences of midwives toward eclampsia

Table 2 shows that, the majority of midwives 42 (84%) were knowledgeable on the earliest symptoms of eclampsia. 30(60%) were knowledgeable on the primary symptoms of eclampsia and 23 (46%) were knowledgeable on the advance symptoms of eclampsia. Only 7(14%) of midwives were knowledgeable on the risk factors of eclampsia.

Competences toward emergence care in managing eclamptic convulsion

The results of the study showed that 92% of midwives knew current management of eclampsia, only (4%) of midwives had correct knowledge on immediate care during convulsions and (98%) of midwives were able to mention all measures needed to care women after convulsion.

As regards to kind of assessment after convulsions, only 10% were selected

the correct item which that observe color for cyanosis and need for oxygen, check for aspiration: lungs should always auscultated after the convulsion has ended, check vital signs and fetal heart rate. Only 2% of study midwives mentioned that you can use Ringer lactate as IV line recommended in managing eclampsia.

The findings of the study regarding recommended drugs used to managing eclampsia showed that majority of midwives (88%) were able to mention correctly the magnesium sulphate as recommended drug used to control convulsion, majority of midwives (86%) were aware of recommended dose of magnesium sulfate, 20% solution, 4g IV slowly over 5-10 minutes OR 10g of magnesium sulphate, each buttock 5g with 50% solution deep IM.

Only 8 percent of midwives identified that, all efforts are combined strategies for prevention of toxicity of

magnesium sulphate. Midwives were also asked to choose the immediate measure to control of toxicity of drug occur. It was observed that only 2% of the midwives were answered correctly

all immediate measures to control toxicity of magnesium sulphate to managing convulsion. 36% were knowledgeable on other management of eclampsia. Table 3.

Table 2: General competences of midwives about eclampsia (N=50)

Statement	Yes		No	
	F	%	F	%
Knows the earliest symptoms of eclampsia	42	84	8	16
Knows the primary symptoms of eclampsia	30	60	20	40
Knows the advance symptoms of eclampsia	23	46	27	54
Knows the risk factors of eclampsia	7	14	43	86

Table 3: Competences of midwives toward emergence care in managing eclamptic convulsion (N=50)

Statement	Yes		No	
	F	%	F	%
Knows current management of eclampsia	46	92	4	8
Knows the immediate management during fits	2	4	48	96
Knows the care of women after convulsions	49	98	1	2
Knows the kind of assessment/physical examination needed after convulsions/fits	5	10	45	90
Knows the recommended IV fluids for managing eclampsia	1	2	49	98
Knows the drug(s) recommended for the control convulsion in management of eclampsia	44	88	6	12
Knows the dose of that drug during control of convulsion	43	86	7	14
Knows the prevention of drug toxicity	4	8	46	92
Knows the immediate measures in case the toxicity of the drug occur	1	2	49	98
Other management of eclampsia	18	36	32	64

Overall competences toward managing eclampsia

Figure 1 describes the overall competences about eclampsia. The majority (60.4%) of midwives had incorrect

answer toward eclampsia, whereas (39.6%) of midwives had correct answer toward eclampsia.

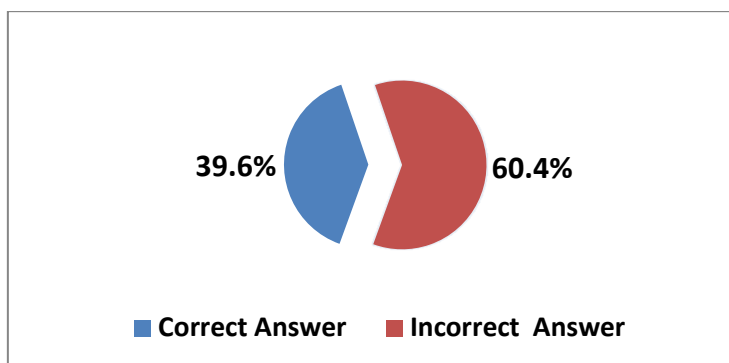


Figure 1: Overall competences of midwives toward management of eclampsia

Level of competences toward management of eclampsia

The majority 25(50%) of midwives had poor competences, followed by 18(36%) of midwives had moderate

competences, whereas only 7(14%) of midwives had good competences toward management of eclampsia. Figure 2.

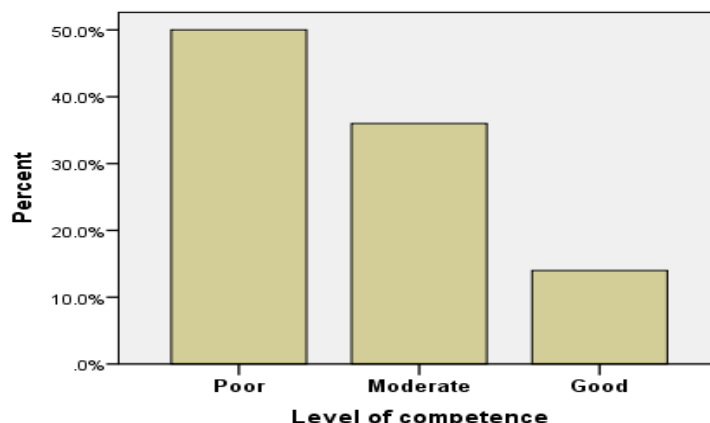


Figure 2: Level of competences toward management of eclampsia

Association between demographic data and level of competences toward eclampsia

No significant association between level of competences and age, marital status and level of education, χ^2 -test (P-value= 0.458; P-value=0.211 and P-value=0.486) respectively.

A significant association between level of competences and courses training not found, χ^2 -test (P-value=0.597). In addition, there was statistically significant association between level of competences and years of experiences, χ^2 -test (P-value= 0.021). Table 6.

Table 6: Association between demographic data and level of competences

Demographic data	Good	Moderate	Poor	P-value
Age range				
• 20-30 years	8.0	24.0	40.0	0.458
• 31-40 years	6.0	12.0	6.0	
• >40 years	0.0	0.0	2.0	
Marital status				
• Married	2.0	20.0	10.0	0.211
• Unmarried	12.0	16.0	40.0	
Level of education				
• Diploma in nursing	10.0	32.0	44.0	0.486
• BSc in nursing	4.0	4.0	6.0	
Course training on eclampsia				
• Yes	8.0	14.0	18.0	0.597
• No	6.0	22.0	32.0	
Work experiences				
• <5	4.0	16.0	40.0	0.021
• ≥5	10.0	20.0	10.0	

Discussion

Eclampsia remains to be the most important cause of morbidity and mortality rate among conditions or world maternal and fetal. So, enhancing knowledge about management of eclampsia among health team is very important as it will decrease disease and death rate among women with eclampsia.

Competences of midwives about general information toward eclampsia showed that the majority of the midwives 84% were knowledgeable on earliest symptoms of eclampsia and 60% were knowledgeable on primary symptoms of eclampsia, 46% of midwives were knowledgeable on advance symptoms of eclampsia and 14% of midwives were knowledgeable on risk factors of eclampsia.

The majority of midwives 96% don't know the immediate management of eclamptic patient during convulsions. The current result is disagree with study done at Dar-es-salaam in public health facilities by Maembe (2013)¹⁰ that found that the overall proportion of participants with knowledge in managing patient with eclampsia was 45%. Similarly a study was done by Plotkin et al. (2010)¹¹, this showed that 42% of midwives were knowledgeable on managing eclampsia. These findings imply that though midwives care for eclamptic woman in the ward, they do with insufficient knowledge.

Only (10%) of midwives were knowledgeable on kind of assessment after convulsions (observe color for cyanosis and need for oxygen, check for aspiration; lungs should always be auscultated after the convulsion has ended, check vital signs and fetal heart rate) needed after convulsion. These results are comparable to those reported from the study done by Jaffar (2013)⁹ which found that with regards to eclampsia, physical examination

scores for nurses and doctors were mainly 'poor' (30%).

In present study, (88%) of the midwives were knowledgeable on recommended drug for controlling convulsion. the finding of the study is consistent to the study done by Plotkin et al. (2010)¹¹ which revealed that 83% of the nurse-midwives' scored highly on the knowledge of drug controlling convulsion (Magnesium sulphate). This result was similar to study done by EkbalAbd El Rheem and Nahed (2018)¹², who found that majority of nurse's in the study were able to know that magnesium sulphate is the most common drug for managing eclampsia and most of the study midwives had given MgSO₄ to eclamptic women. This result was similar to study done by Jaffar⁹, who found that most participants in his study, were knowledgeable about the recommended drug for controlling convulsion and the result is similar to study done at Dar-es-salaam by Maembe (2013)¹⁰, who observed that the nurses-midwives were knowledgeable about recommended drug that controlling convulsion with highly percent (95%).

Findings of this study showed that most midwives were not knowledgeable on prevention of toxicity (assessing respiratory rate, patellar reflex and urinary output) of magnesium sulphate (92%) and immediate measure in case of toxicity of MgSO₄ occur (98%).

This is comparable to study done by USAID and Nepal society (2013)¹³ which indicated 74% of health care providers were not knowledgeable on monitoring of toxicity of magnesium sulphate at a baseline. this is comparable to study done by Jaffar (2013)⁹ at MnaziMmoja Hospital, Zanzibar, which indicated (93%) of nurse-midwives were not knowledgeable on monitoring of

toxicity of magnesium sulfate. Our finding is higher than result of study done by Eke et al. (2011), in Nigeria were finding is (16.8%)¹⁴.

As regard personal data of the studied midwives, it was found that 72% of study midwives their age ranging from 20-30 years with mean (28.54±5.4) year , this finding is not consistent with study conducted by EkbalAbd El Rheem and Nahed¹², who was found that near half of study sample their age ranging from 20-30 years with mean. Also this finding is not consistent with Jaffar. (2013)⁹, who found that most participants were from age group of 31- 40 years followed by age group 41-50 and Maembe (2013)¹⁰, did a study on management of pre-eclampsia and eclampsia in Dar-el-Salaam public health facility and found nearly two thirds of health care workers were between 31-40 years and the majority were nurses.

The current study shows that, the course training has not associated with competence in managing eclampsia (p-value>0.05). These results are comparable to those reported from the study done in Nepal by USAID and Nepal Society (2013)¹³, (p-value>0.05). Also the relationship between level of competences in managing eclampsia and age and level of education was not observed (p-value>0.05). Whereas there was statistical significant association between the level of competences and year of experiences (P-value= 0.021)

This is not similar to the findings of the Baby (2005)¹⁵ which indicate that there is no significance association between competences level and age and professional qualification (p-value>0.05) but significance association was found between competences level and year of experiences (p-value<0.05) and in-service education (p-value<0.05).

Conclusion

We conclude that the midwives had knowledge deficits in areas of managing eclampsia. Few midwives reported to have attended in-service training on managing eclampsia.

Recommendations

Health sciences faculties should prepare intensively their midwifery students to care for women with eclampsia. Further study involving larger sample size of midwives from different public hospitals of Yemen to assess the real picture of midwives practice in managing eclampsia.

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