ORIGINAL ARTICLE

A Study to Assess the Effectiveness of Objective Structured Clinical Evaluation [OSCE] on Knowledge and Skills Regarding Management of Eclampsia Among Nurses Working in Primary Health Care Centers

Dr. Veeresh VG

Nursing Tutor, Government College and School of Nursing, KIMS Hubballi, Dharwad, Karnataka.
E-mail: veereshvg@gmail.com

Abstract

Background: Pregnancy is a phenomenon of joy and pain. An expectant mother during pregnancy has to handle associated wellness and illness. The phase of pregnancy is challenging for every mother; a significant number of physical, physiological and psychological changes occur during pregnancy. These changes can cause minor problems and major complications. One such commonly occurring complication is eclampsia. The present study was designed to assess and manage eclampsia skills of nurses working in primary health care centers.

Methodology: One group pretest posttest design was used in this study which was conducted among 83 nurses working in selected primary health care centers in selected district of Karnataka. A structured knowledge and skill questionnaire was designed to assess the skills of nurses on management of eclampsia. The present study used the technique of OSCE (Objective Structured Clinical Examination) for imparting the knowledge and skills.

Results: The present study found that the knowledge and skill of nurses in pretest was low compared to posttest. OSCE as method of teaching was effective in improving the knowledge and skill scores in the selected nurses in managing eclampsia.

Conclusion: The present study was designed with an aim to develop and improve the knowledge and skill of nurses working in primary health care centers as 70% of rural population seek health care services from these peripheral health service providers. Nurses are the key health personnel available 24X7 in these healthcare facilities. Nurses equipped with knowledge and skills for initial management of eclampsia can play a significant role in reducing mortality and morbidity of expectant mothers by better managing eclampsia. The study recommended that nurses should be well equipped with skills for management of complications of labor to promote maternal and child health care.

Keywords: Eclampsia, OSCE, Management by magnesium sulphate

Introduction

Pregnancy is a complex process involving various physiological changes that demand comprehensive care for expectant mother, and requires a health care setup with three-tier system to meet health care requirements of the mother. The primary health care delivers service

through its vast health personnel and health programs. Nurses play a vital role in maternal health care delivery system, from the registration till the postnatal care of the mother, managing all the vitals events and complications of pregnancy. Eclampsia is one of the complications of pregnancy causing 35% of maternal deaths. The prevention of eclampsia begins with the registration, involves regular monitoring of blood pressure and the necessary follow ups.[1,2] The knowledge and skill to manage eclampsia with minimal basic skills is vital in better managing the complications of pregnancy. Nurses equipped with this skill prevents long-term complications, mortality and morbidity of expectant mother.[3,4,5] The present study aimed to assess the knowledge and skill of nurses in managing eclampsia and to develop the knowledge and skill by OSCE (Objective Structured Clinical Examination) method of teaching for good retention of knowledge and skill.

Methodology

The present study was designed as one group pretest posttest with a total of 83 nurses selected using multistage simple random sampling technique in selected district of Karnataka. A structured knowledge and skill questionnaire designed with content validity index of 85% and 92%, reliability of 0.89 and 0.92 respectively was used. The study assessed the knowledge and skills of nurses in management of eclampsia, followed by the assessment of OSCE method of teaching to educate and develop practice of managing eclampsia using Magnesium Sulphate regimen and initial safety management measures and early referral services with basic life support. Post teaching reassessment was conducted using the same knowledge and skill questionnaire. The obtained data was analyzed using SPSS 18.0 Version for statistical analysis at 95% confidence interval, 0.80 power and 0.05 marginal error.

Results

The results of the present study are discussed below.

Findings related to demographic data of the nurses

Table 1: Description of demographic details of the nurses

SL No	Demographic variable		Number of nurses	Percentage
1	Age	20 to 25 years	26	31.32
		26 to 30 years	43	51.80
		31 to 45 years	10	12.04
		46 to 60 years	04	4.81
2	Gender	Male	27	32.53
		Female	56	67.46
3	Religion	Hindu	49	59.03
		Muslim	21	25.30
		Christian	13	15.66
4	Type of family	Joint family	29	34.93
		Nuclear family	54	65.06
5	Marital status	Married	59	71.08
		Unmarried	24	28.91
6	Nature of employment	Regular	32	38.55
		Contractual	51	61.44
7	Monthly income	Less than `18,000	21	25.30
		`18,001- `25,000	30	36.14
		`25001- `50,000	17	20.48
		More than `50,001	15	18.07
8	Years of experience	Less than two years	31	37.34
		Three to four years	32	38.55
		More than five years	20	24.09

Findings related to the knowledge and skill scores of the nurses

Table 2: Distribution of knowledge and skill scores of nurses on management of eclampsia (n=83)

SL NO	COMPONENTS	MAXIMUM SCORE	PRETEST		POSTTEST	
			MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION
1	Knowledge	20	6.06	1.65	17.52	1.92
2	Skill	20	7.23	1.70	16.92	1.89

In the pretest, for a maximum knowledge and skill score of 20, mean ± standard deviation of 6.06±1.65 and 7.23±1.70 respectively for knowledge and skill were noted. In the posttest, knowledge and skill scores with mean ± standard deviation of 17.52±1.92 and 16.92±1.89 respectively, were noted signifying that OSCE method of teaching was effective in improving the knowledge and skill of nurses on management of eclampsia.

Findings related to aspect wise analysis of knowledge and skill scores of nurses with mean% and mean% enhancements

Table 3: Distribution of aspect wise analysis of knowledge and skill scores of nurses

Sl No	Components		Max Score Mean	Pretest			Posttest			Mean% Enhancement
				Standard Deviation	Mean %	Mean	Standard Deviation	Mean %	Mean	
1	Knowledge aspect	Initial safety, assessment & reassessment of mother	3	1.02	0.70	34.00	2.52	0.56	84.00	50.00
2		Magnesium sulphate regimen	7	2.02	0.30	28.85	6.00	0.44	85.71	56.86
3		Management of toxicity	5	1.50	0.35	30.00	4.54	0.42	90.80	60.80
4		Follow up care and referral services	5	1.52	0.30	30.40	4.46	0.50	89.20	58.80
	Overall Knowledge score		20	6.06	1.65	30.30	17.52	1.92	87.60	57.30
1	Skill aspect		20	7.23	1.70	36.15	16.92	1.89	84.60	48.45

In pretest, mean % knowledge and skill scores of 30.30 and 36.15 respectively were recorded, while an improvement was observed in posttest with mean % knowledge and skill scores of 87.50 and 84.50, respectively. The mean % enhancement of knowledge and skill scores was 57.30 and 48.45 exhibiting significant improvement in nurses on management of eclampsia.

Findings related to effectiveness of OSCE (Objective Structured Clinical Evaluation) method of teaching

Table 4: Distribution of effectiveness of OSCE (Objective Structured Clinical Evaluation) method of teaching

Sl No	Area	Pretest		Posttest		t Value	df	p Value	Interference
		Mean	Standard Deviation	Mean	Standard Deviation				
1	Initial safety, assessment & reassessment of mother	1.02	0.70	2.52	0.56	18.55	82	≤0.001	Significant
2	Magnesium sulphate regimen	2.02	0.30	6.00	0.44	27.00	82	≤0.001	Significant
3	Management of toxicity	1.50	0.35	4.54	0.42	17.34	82	≤0.001	Significant
4	Follow up care and referral services	1.52	0.30	4.46	0.50	22.12	82	≤0.001	Significant
	Knowledge	**6.06**	**1.65**	**17.52**	**1.92**	**45.52**	**82**	**≤0.001**	**Significant**
	Skill	**7.23**	**1.70**	**16.92**	**1.89**	**43.49**	**82**	**≤0.001**	**Significant**

Table 4 describes the distribution of effectiveness of OSCE (Objective Structured Clinical Evaluation) method of teaching exhibiting that the knowledge was significant at 45.52 with 82 degree of freedom, *p* value of ≤0.001, and skill was significant at 43.49 with 82 degree of freedom, *p* value of ≤0.001.

Discussion

The present study was designed to assess the effectiveness of OSCE method of teaching on the knowledge and skill regarding the management of eclampsia among nurses working in primary health care centers. This study is the first of its kind, and the findings of this study signified OSCE as an effective method to obtain desired improvement, not only in knowledge but also the skills.

Majority of nurses in the present study were in age group of 25 to 30 years which is a highly productive, motivated age group with drive for career development. Among the participants, 67.46% of nurses were females, 59.03% belonged to Hindu religion, 65.06% were from nuclear families, 71.08% were married, 61.44% of nurses were contractual employees under National Health Mission which recruits majority of human resource in health system, while 38.55% of nurses were regular employees under state and autonomous government health institutions. Among the participants, 36.45% were drawing a monthly income of 18,001-25,000/- and 37.34% had an experience of less than two years, indicating the need for continuing education and development of nurses' skills.

In the present study, knowledge and skill questionnaires were designed with a maximum score of 20. The pretest knowledge and skill scores of 6.06±1.65 and 7.23±1.70

(mean ± standard deviation), respectively were recorded, while in posttest, mean knowledge and skill scores of 17.52±1.92 and 16.92±1.89 respectively, were obtained.

The present study showed a pretest mean % knowledge and skill scores of 30.30 and 36.15 respectively, and a posttest mean % knowledge and skill scores of 87.50 and 84.50, respectively. The mean % enhancement of knowledge and skill score was 57.30 and 48.45 signifying that OSCE method of teaching was effective in bringing improvement in the knowledge and skill of nurses on the management of eclampsia.

The study demonstrated that with OSCE (Objective Structured Clinical Evaluation), the knowledge was significant at 45.52 with 82 degree of freedom, *p* value of ≤0.001, (and aspects wise initial safety, assessment and reassessment significant at 18.55 with 82 degree of freedom, *p* value of ≤0.001, magnesium sulphate regimen significant at 27.00 with 82 degree of freedom, *p* value of ≤0.001, management of toxicity significant at 17.34 with 82 degree of freedom, *p* value of ≤0.001 and follow up care and referral services significant at 22.14 with 82 degree of freedom, *p* value of ≤0.001) and skill was significant at 43.49 with 82 degree of freedom, *p* value of ≤0.001.

Conclusion

The one group pretest posttest design study was conducted with an aim to assess the knowledge and skill of nurses on management of eclampsia and to assess the effectiveness of OSCE method of teaching. The study demonstrated OSCE to be an effective method to obtain significant improvement in knowledge and skill of nurses on management of eclampsia which helps in early

identification, triaging and management of eclampsia at primary health care level. Nurses are primary health care service providers at primary and community health levels for public and expectant mothers. Thus continuing education for nurses with right method of teaching aids in reducing, preventing and managing maternal morbidity and mortality, uplifting the maternal and child health care at bottom level of health care delivery.

Recommendation of the study

The present study focused only on single skill of management of eclampsia. Similar studies involving management of complications like postpartum hemorrhage, hypovolemic shock can be designed for improving the skill of nurses.

Conflicts of Interest

Nil

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