

## Original Article

# Competence of Nurses in Providing Care Management of Premature Rupture of Membranes at Maternity Hospitals.

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### Abstract:

**Background** Nurses provide critical, life-saving care to women and their babies. Effective midwives must be clinically competent with the required knowledge and skills to provide quality care.

**Objective** To study nurses competence regarding providing care management of premature rupture of membranes. **Methods** Descriptive hospital based study design. Conducted among the nurse maternity hospitals in Khartoum State. Seventy respondents from antenatal words were enrolled in the study. Structural self administered questionnaire and standard check list were adopted for participants knowledge and skill. Data were analyzed by Statistical Package for Social Sciences (SPSS) version 25. Data were presented in simple frequency tables. **Results:** participants knowledge about monitoring temperature 94% and restricted per vaginal examination 88% but their practice of auscultation fetal heart is poor practice 62% for assessing fetal wellbeing, **conclusion** According to the results participants knowledge is good while their practice were poor in assessing fetal wellbeing. The researcher suggested that management guideline and protocol should be applied to improve participants practice .

**Key words: Competence-Premature Rupture Membranes-Nurses**

### Introduction:

Nurse provide critical, life-saving care to women and their babies. Effective nurses must be clinically competent with the required knowledge, skills, and

attitudes to provide quality care. Their success depends on an environment of supportive supervision, continuing education, enabling policies, and access to equipment <sup>(1)</sup>. Premature rupture of membranes before the onset of labor at term is commonly referred to either premature or preterm rupture of membranes and occurs in about 8% of term pregnancies.<sup>(2)</sup> Rupture of membranes before 37 completed weeks, has long been associated with high perinatal as well as maternal morbidity and prolonged premature rupture of membranes that persists for more than 24 hours prior to the onset of labor.<sup>(3,4)</sup> Maternal and fetal infection is the second major complications consecutive to premature rupture of membranes , as chorioamnionitis complicates 10–36% of patients. Nurses and midwives together form the largest health profession, they should be competent in the principles and practice of nursing. Nurses and midwives are essential to provide safe, high quality and efficient health services<sup>(5)</sup>. Nurses and midwives are therefore a vital resource towards achieving the goals. Early and accurate diagnosis is necessary to appropriately manage patients with premature rupture of membranes .Early and accurate diagnosis of PPRM would allow for gestational age-specific obstetric interventions designed to optimize perinatal outcome and minimize serious complications, such as cord prolapse and infectious morbidity chorioamnionitis and neonatal sepsis.<sup>(6)</sup> The etiology of premature rupture of membranes is not known exactly but

it has been speculated that infection or degeneration may weaken the membranes and spontaneous rupture. The membranes respond to various stimuli like membrane stretching, infections of reproductive tract by producing mediators like prostaglandins, cytokines and other enzymes.<sup>(4,6)</sup> The incidence of preterm premature rupture of membranes is about 3-8% and premature rupture of membranes at term beyond 37 weeks period of gestation also complicates approximately 8% of pregnancies. Among these, approximately 50% of affected women will begin labour spontaneously within 12 hours, 70% within 24 hours, 85% within 48 hours, and 95% within 72 hours.<sup>(4)</sup> PROM occurs in approximately 10% of all pregnancies ranging from 2.7% to 17%, with 60% to 80% of cases occurring at term.<sup>(6)</sup> Midwives providing care for women with PROM aim to avoid unnecessary interventions while facilitating the best outcomes possible for mothers and babies. The midwifery management of PROM includes diagnosing PROM; assessing fetal and maternal wellbeing, and determining the need for and timing of induction. <sup>(7)</sup> In order to reduce the risk of maternal and neonatal infection, avoid digital vaginal exams for clients with PROM whenever possible, until active labour or upon induction of labour. An assessment should be conducted by the nurses in the hospital. Include: monitoring maternal and fetal vital signs and examination of the amniotic fluid as well as a discussion of the client's emotional well-being. If any contraindications to expectant management are noted on physical exam, or for any other emotional or psychological reasons,

offer induction of labour<sup>(3,7)</sup> **The objectives of this study** were to determine the competence of Nurses and midwives in providing care management of premature rupture of membranes in two hospitals, to assess their knowledge and to identify their application.

### **Methods:**

This is a descriptive cross sectional hospital based study, was conducted at two maternity hospitals, Omdurman maternity hospitals and Ali Faduol Maternity hospital at Omdurman city. These hospitals provided care to all obstetrics conditions and they had antenatal wards, post natal wards, delivery rooms, emergency departments, and high dependency units. The study population includes all category of nurses and nurse midwives working at the antenatal wards at two these selected Maternity Hospitals. All types of nurse category were recruited, midwives nurses with diploma, bachelorette and master degree, were participated in the study. Convenience sampling technique was adopted to take sample size and seventy nurses and midwives were enrolled in the study, data were collected by structural self administered questionnaire and standard practical check list,

### **Statistical Analysis**

Data were analyzed by SPSS version 25 and presented in form of simple frequency tables and cross tabulation.

Ethical approval was conducted from Al Neelain University Ethical Committee, Ministry of Health. Agreement and consent were from participants involved in the study.

## Results

**Table 1 demographic data about participants .n=70**

<b>Age</b>	<b>Frequency</b>	<b>Percent</b>
20 - 25 years	24	34.3%
26 - 30 Years	33	47.1%
31 - 35 Years	2	2.3%
More than 35	11	15.7%
<b>Total</b>	<b>70</b>	<b>100%</b>
<b>Qualification</b>		
Diploma	22	31%
Bachelor	42	60%
Master	6	8.6%
<b>Total</b>	<b>70</b>	<b>100%</b>
<b>Years of Experiences</b>		
1-5 years	24	34.3%
6- 10 Years	28	40%
11 - 15 Years	11	15.7%
More Than 15 years	14	20%
<b>Total</b>	<b>70</b>	<b>100%</b>
<b>training course about management of PROM</b>		
<b>Yes</b>	<b>2</b>	<b>2.9%</b>
<b>No</b>	<b>68</b>	<b>97.1%</b>
<b>Total</b>	<b>70</b>	<b>100%</b>

**Table (2): Participants knowledge regarding nursing care of premature rupture of membranes .n=70**

<b>Nursing management includes:</b>	<b>Frequen cy</b>	<b>Percentag e</b>
Adequate hydration.	54	77.1%
Close observation for possible infection, such as frequent monitoring of vital signs.	66	94.3%
Checking the results of laboratory tests (e.g. the white blood cell count).	60	85.7%
Corticosteroids to enhance fetal lung maturity.	65	92.9%
<b>Total</b>	<b>70</b>	<b>87.5%</b>
<b>MEAN=87%</b>		

**Table (3): Participants knowledge regarding nursing care of premature rupture of membranes. n=70**

Midwifery care		Frequency	Percentage
Monitor fetal heart rate monitoring to fetal well-being.		64	91.4%
Assess the women’s labor status.		66	94.3%
Sterile speculum examination done rather than vaginal examination.		62	88.6%
Administering antibiotics as prescribed.		63	90%
<b>Total</b>		<b>70</b>	<b>91.1%</b>
<b>MEAN</b>		<b>90%</b>	

**Table (4) Participants practice toward care of premature rupture of membranes’=70**

Procedures	Frequency	Percentage	Frequency	Percentage
Monitoring temperature.	56	80%	32	20%
Complete bed rest.	32	45.7%	38	54.3%
Administer antibiotics as prescribed.	69	98.6%	1	1.4%
Check for laboratory test.	62	88.6%	8	21.4%
Fetal heart rate auscultation.	26	37.1%	44	62.9%
Monitoring for S & S of labor.	58	82.9%	12	16.1%
Pre vaginal examination restricted.	66	94.3%	4	5.7%
MEAN		75%		

**Table (5): Chi –square correlation test of Knowledge and qualification**

Knowledge	Qualification		
	Chi-square	Degree of freedom (df)	p-value
	27.886	2	0.000

. Correlation is significant

**Table (6): Chi**

Knowledge	Years of experience		
	Chi-square	Degree of freedom (df)	p-value
	27.00	4	0.000

Correlation is significant

**Discussion**

Nurses play key roles in caring for women who experience premature rupture of membranes , to avoid unnecessary interventions while facilitating the best outcomes possible for mothers and babies. In current study, the majority of participants age between 26-30 years, bachelor degree holders and most of them their experiences between 6 to 10 years and there were significant correlation between the qualification and years of experience. Knowledge of the participants about the causes and risk factors of PROM is good, this could provide care that prevent the condition to be happen and also help in management.

Participants knowledge about the nursing care for patients of premature rupture of membranes was above the average and they aware about monitoring patients temperature ,restricted frequent vaginal examination and give the patient broad spectrum antibiotics. However, their practice was not matching their knowledge and there is gaps according to result finding especially in providing complete bed rest for patient similar to the study that was conducted in Addis Ababa and showed there were gaps in midwives competence due to lack of clinical guideline(8).fetal well being, Fetal heart sound not done by majority of participants and this one of competence of nurses , and midwives for detecting fetal distress for preventing neonatal complications such as respiratory distress syndrome ,low APGAR scoring and prematurity which were increasing with premature rupture of membranes.Prelabour rupture of membranes presents a number of issues for practicing nurses and midwives. While it is a common event, there continues to be intense debate around how to best manage patients with PROM ,regarding best practice with respect to managing patients with PROM .

**Conclusion :** Base on the study finding the knowledge of participants about care of patients with premature rupture of membranes was good and their practice in some of the procedures that should be done for patients was good but in assessing fetal heart rate was poor..

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