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## ASSESSMENT OF NEONATAL CARE SERVICES BY NURSES IN TERTIARY HEALTH INSTITUTIONS IN SOUTH EASTERN NIGERIA

Agu Earnest Emeka<sup>1\*</sup> Ndie Elkenah Chibuike,<sup>2</sup> Chiejina Edith Nkechi<sup>3</sup>

<sup>1</sup>*Nursing Officer I, Alex Ekwueme Federal University Teaching Hospital, Abakaliki, Ebonyi State, Nigeria.*

<sup>2</sup>*Professor, Department of Nursing Science, Faculty of Health Sciences and Technology, Nnamdi Azikiwe University, Nnewi Campus, Nigeria.*

<sup>3</sup>*Reader, National Open University, Abuja, Nigeria.*

**\*Corresponding Author:-**

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### Abstract:-

*Survival of the newborn demands care by professionals who are sound in knowledge and practice of neonatal care so as to give quality care. This study focused on assessment of neonatal care services by nurses in tertiary health institutions in South Eastern Nigeria. It was a descriptive cross-sectional research design. Multistage sampling technique was used to select 440 nurse respondents for the study. Two research questions and one null hypothesis guided the study. The Instruments used for data collection were questionnaire on neonatal care services by nurses in tertiary health Institutions and checklist on assessment of available and functional equipment, drugs and nursing staff strength in tertiary health institutions. Standard descriptive statistics of frequency distribution, mean and standard deviation were used to summarize the variables and answer the research questions. Kruskal Wallis test was used in testing the null hypothesis at 0.05 level of significance. The result indicated good quality of neonatal care given by nurses in the tertiary health institutions (mean = 2.88; SD = 0.69). There was generally poor attitude by the nurses (mean = 2.42; SD = 0.38). Staff strength of the nurses significantly influenced the attitude displayed by the nurses in their care of the neonates ( $\chi^2 = 9.293$ ;  $p$ -value = 0.026).*

**Keywords:-** *Assessment, Attitude, Neonatal Care, Nurses, Quality of Care*

## **INTRODUCTION.**

Neonatal care is the care provided to babies within 28 days of age [1]. The neonatal units provide expert, round-the-clock care for newborn babies [2]. Care of the neonate is a team work, and neonatal nurses constitute vital part of the neonatal care team and comprise over 90 percent of the neonatal care units staff [3]. There are two different levels of neonatal care services which are caring for healthy newborns in which the babies typically share a room with their mothers, and both the mothers and their babies are usually discharged from the hospital soon after birth [4]. The other level of neonatal care is the care for at-risk neonates which require special therapy such as use of breathing aid, feeding tubes, and they may need longer time before being discharged. Examples of at-risk neonates are premature/ LBW neonates, asphyxiated neonates, jaundiced neonates, neonates with respiratory distress syndrome, atelectasis, and neonates with birth injuries, congenitally malformed neonates, and neonatal infections [5].

World Health Organisation reported that the standard and quality of neonatal care is poor in developing countries, and that an estimated 40% of deaths of children less than five years of age occur during the first 28 days of life, and that the major causes of these deaths are due to infections, birth asphyxia, birth trauma, prematurity and congenital anomalies [1]. Nigeria is one of such developing countries [1].

The concept of quality care is based on the philosophy that quality of healthcare can always be improved; what is considered as an acceptable quality today may be substandard tomorrow, especially when considering modern advances such as diagnostic and treatment modalities, computers and communication systems [6]. Assessing and improving the quality of nursing care for neonates is a major focus of neonatal health care [7]. Nurse's role for care of neonates is to use appropriate equipment and drugs for neonatal care, timely observation, encourage exclusive breastfeeding, ensure prompt feeding on demand, standard universal hygiene practices and ensure immunization of the neonates [8]. Quality of care is defined as "the extent to which health care services provided to individuals (normal neonates) and patients (at-risk neonates) improve desired health outcomes" [9]. In order to achieve this, health care must be "safe, effective, timely, efficient, equitable and people-centred". But this may be affected by attitude of the service provider. The attitude of nurses towards neonatal care can be determined by psychological factors like ideas, values, beliefs, interest and perception of the nurse towards neonatal care nursing [10].

In Nigeria, the basic requirements for newborn care such as power supply, water, equipment and drugs are often lacking [11]. Although 24-hour service is available in most tertiary and secondary health facilities, very few primary health centres in the country offer round-the-clock services [11]. Care of premature or low birth weight babies is limited to the few tertiary and secondary health facilities that have incubators [11]. Improving facility level care of newborns in Nigeria is crucial and is an achievable goal [11]. Hence, this study was aimed at assessing neonatal care services by nurses in selected tertiary health institutions in South Eastern Nigeria.

## **Research Questions**

- 1 What is the quality of neonatal care given by nurses in the selected tertiary health institutions in South-Eastern Nigeria?
- 2 What is the attitude of nurses to neonatal care in the selected tertiary health institutions in South-Eastern Nigeria?

## **Hypothesis**

1. Staff strength of the nurses (nurse/neonate ratio) does not significantly influence the attitude displayed by nurses in their care for the neonates in selected tertiary health institutions in South-Eastern Nigeria.

## **Materials and Methods**

### **Design and Sampling**

The research design for the study was a descriptive, cross-sectional design. Multi-stage sampling technique was used for this study. Simple random sampling technique was used to select three States (Anambra, Ebonyi and Enugu) from the five States in South Eastern Nigeria. Purposive sampling technique was used to select two tertiary hospitals from each of the three selected states making it a total of six tertiary hospitals. Proportionate stratified random sampling technique was adopted in selecting the sample from each of the selected hospitals. This was to allow proportional representation of the respondents since the total number of nurses in the neonatal care units of the selected hospitals were not equal. The sample size of this study was determined using Taro Yamane (1967) formula with 95% confidence level. The calculated sample size for the study was 440 respondents.

### **Instruments**

The Instruments used for data collection were questionnaire on Neonatal Care Services by Nurses in Tertiary health Institutions and Checklist on assessment of available and functional equipment, drugs and nursing staff strength in tertiary health Institutions.

The Questionnaire consisted of six (6) sections with 43 categorized question items. Section A consisted of items on demographic characteristics (age, gender, years of experience, rank, professional and educational qualifications). Sections B to F items of the questionnaires were on nurses' opinion on availability of equipment, extent of availability of drugs, staffing of the neonatal units, quality of the neonatal care and attitude of nurses towards neonatal care. The questionnaire was designed in a 4-point scale ranging from 1 to 4 with Always/Strongly agree = 4 points, very often/agree = 3 points, Fairly/Disagree = 2 points, and rarely/strongly disagree = 1 point.

The Checklist contain 51 items which were used to elicit information on available and functional equipment, drugs for neonatal care and nursing staff strength.

The Questionnaire was subjected to reliability test by administering 20 copies to registered nurses working in a Federal Medical Centre that did not form part of the population for the study. Based on Guttman split-half coefficient reliability test, the result was 0.827.

### Method of Data Collection

440 copies of the questionnaire were administered, out of which 438 (99.5%) were returned. Six copies of the checklist were used by the researchers to collect data from the neonatal care units of the six selected tertiary hospitals. Ethical approvals were obtained from the institutions used for the study. Informed consent was also obtained from the respondents. Confidentiality was ensured by not including the names of the health institutions and the respondents in the data collection. Alphabetical codes were used to represent the selected health institutions.

### Method of Data Analysis:

Descriptive statistics of frequencies, percentages, mean and standard deviation were used to answer the research questions. Kruskal Wallis test was adopted in testing the null hypothesis at 0.05 level of significance. Mean score of < 2.5 = poor and  $\geq 2.5$  = good. The analyses were done using Statistical Package for the Social Sciences (SPSS) software (version 20).

## Results

### Demographic Characteristics of the Respondents

**Table 1: Demographic characteristics of the respondents**

S/N	Variable	Categories	N	%
1	Age	20-30	169	38.6
		31-40	141	32.2
		41-50	95	21.7
		51 and above	33	7.5
2	Gender	Male	113	25.8
		Female	325	74.2
3	Years of Work Experience	1-5 years	226	51.6
		6-10 years	138	31.5
		11 years and above	74	16.9
4	Rank	NO1	59	13.5
		NO11	125	28.5
		SNO	59	13.5
		PNO	108	24.7
		ACNO	68	15.5
		CNO	19	4.3
5	Professional Qualification	RN	110	25.1
		RM	105	24
		RN/RM	204	46.6
		Specialty	19	4.3
6	Educational Qualification	O Level	1	0.2
		Diploma	322	73.5
		Degree	115	26.3

**Total N= 438**

Table 1 above shows the demographic distribution of the respondents. It showed that majority were in age bracket of 20-30 years 169(38.6%), followed by those within 31-40 years 141(32.2%). 113(25.5%) were male while 325(74.2%) were female. Majority of the workers had 1-5 years of work experience 226(51.6%) whereas majority had the rank of Nursing Officer 11 125(28.5%). On professional qualification, majority had RN/RM 204(46.6%) while majority of the respondents had diploma as their educational qualification 322(73.5%).

**Table 2: Mean score of the quality of neonatal care given by nurses in selected tertiary health institutions in South-Eastern Nigeria**

		N=438						
S/N	Quality of neonatal care services given by nurses	A	VO	F	R	Mean	SD	Remark
1	To what extent do you use the appropriate equipment in your neonatal care units to provide care for normal neonates?	113	266	39	20	<b>3.08</b>	<b>0.72</b>	*
2	To what extent do you use the appropriate equipment in your neonatal care units to provide care for at risk neonates?	97	241	65	35	2.91	0.83	*
3	To what extent do you use the appropriate equipment in your neonatal care units to provide emergency care for neonates?	94	243	59	42	2.89	0.85	*
4	To what extent do you keep to the right time in observation of neonates you are caring for?	104	112	187	35	2.65	0.93	*
5	To what extent do you keep to the right time in administration of prescribed drugs to neonates you are caring for?	95	236	55	52	2.85	0.89	*
6	To what extent do you practice standard universal hygiene practices while caring for neonates?	94	241	51	52	2.86	0.89	*
7	To what extent do you have neonatal sepsis while neonate is on admission?	96	237	53	52	2.86	0.89	*
8	To what extent do you attend update workshop either internally or externally in field of neonatal care nursing?	166	40	130	102	<b>2.62</b>	<b>1.21</b>	*
9	To what extent do you encourage parents to participate in newborn care and parent child interaction?	108	254	48	28	3.01	0.78	*
10	To what extent do you ensure immunization of neonate under care?	98	263	64	13	<b>3.02</b>	<b>0.70</b>	*
11	To what extent do you encourage/ ensure exclusive breastfeeding?	108	254	48	28	3.01	0.78	*
12	To what extent do you encourage prompt feeding on demand?	92	249	65	32	2.92	0.80	*
13	To what extent do you carry out physical examination of the neonates	92	243	70	33	2.90	0.81	*
14	To what extent do you maintain respiration for the neonates under care?	92	244	69	33	2.90	0.81	*
15	To what extent do you monitor/regulate temperature of neonates under care?	99	235	55	49	2.88	0.89	*
16	Nurses do not consider individual differences of newborns under care?	93	234	56	55	2.83	0.90	*
17	Nurses do not give care to newborns based on parental status / ethnicity?	92	235	56	55	2.83	0.90	*
<b>Grand mean</b>						<b>2.88</b>	<b>0.69</b>	*

**Key: A= Always, VO= Very Often, F=Fairly, R=Rarely, \*=Good**

Table 2 above shows that the grand mean and standard deviation of the quality of neonatal care given by nurses in selected tertiary health institutions in South-Eastern Nigeria was 2.88, SD=0.69 indicating good quality care. The table shows that extent of use of appropriate equipment in their neonatal care units to provide care for normal neonates (M=3.08, SD=0.72). This was followed by the extent to ensure immunization of neonate under care (M=3.02, SD=0.70). The table shows mean score of more than 2.5 for each of the other items of the neonatal care given by the nurses.

**Table 3: Mean score of the attitude of nurses to neonatal care in selected tertiary health institutions in South-Eastern Nigeria**

N=438								
S/N	Attitude of nurses toward neonatal care nursing	SA	A	D	SD	Mean	SD	Remark
1	Neonatal nursing is my preferred specialty among nursing specialties	29	157	147	105	2.25	0.89	**
2	If given an opportunity to make a choice of unit to work, I would prefer neonatal care units to other units	29	154	145	110	2.23	0.90	**
3	Neonatal care nursing is the most stress free areas of nursing specialty	66	149	126	97	2.42	0.99	**
4	Experience in neonatal care units is not stressful	24	36	199	179	1.78	0.81	**
5	Caring for the neonate is interesting?	97	138	112	91	2.55	1.05	*
6	I do not chase away parents of newborns while on duty	87	148	112	91	2.53	1.03	±
7	Caring for newborn is not disturbing?	24	36	199	179	1.78	0.81	**
8	I have interest in working in neonatal unit	23	97	175	143	2.00	0.87	**
9	I always report timely on every duty	213	199	19	7	3.41	0.67	±
10	I do not consider individual differences of newborns under care	96	233	54	55	2.84	0.91	±
11	I do not give care to newborns based on parental status / ethnicity	88	237	57	55	2.82	0.90	*
<b>Grand mean</b>						<b>2.42</b>	<b>0.38</b>	<b>**</b>

**Key:** SA= Strongly Agree, A= Agree, D=Disagree, SD=Strongly Disagree, \*=Good, \*\*=Poor

Table 3 above shows that the grand mean and standard deviation on the attitude of nurses to neonatal care in selected tertiary health institutions in South-Eastern Nigeria was M=2.42, SD=0.38, this result indicate poor general attitude. However the table shows good mean score in finding neonatal care interesting (M=2.55, SD=1.05), do not chase away parents of newborns (M=2.53, SD=1.03), reporting timely on duty (M=3.41, SD=0.67), not considering individual differences of newborns under care (M=2.84, SD=0.91) and not giving care to newborns based on parental status (M=2.84, SD=0.91).

Test of Hypothesis Hypothesis: Staff strength of the nurses (nurse/neonate ratio) does not significantly influence the attitude displayed by nurses in their care for the neonates selected tertiary health institutions in South-Eastern Nigeria.

**Table 4: Kruskal Wallis test on influence of staff strength (nurse/neonate ratio) attitude displayed by nurses in their care for the neonates selected tertiary health institutions in South-Eastern Nigeria**

Nurses ratio to the neonate N during a shift	Mean Rank	X <sup>2</sup>	Df	Asymp. Sig.	Decision	
1:1	16	228.5	9.293	3	0.026	*Significant
1:2	55	248.04				
1:3	156	196.23				
1:4 and above	211	228.59				
Total	438					

**Dependent variable = Attitude displayed by nurses**

Table 4 above shows that staff strength of the nurses (nurse/neonate ratio) significantly influence the attitude displayed by nurses in their care for the neonates in selected tertiary health institutions in South-Eastern Nigeria (X<sup>2</sup>=9.293, df=3, p-value =0.026). Hence, the null hypothesis was rejected at 0.05 level of significance.

## Discussion

### Demographic Data

In this study, Table 1 revealed that the number female nurses (74.2%) were greater than the male nurses (25.8%). In the opinion of the researchers, this finding is not surprising because nursing profession is often regarded as female profession. Hence, the need to encourage men to study and practice nursing is of utmost importance.

Findings from this study also revealed that 4.3% of the respondents had specialty in neonatal nursing (Table 1). Neonatal nursing care requires specialized knowledge and skills to provide effective and efficient care to the newborn. Evidence is emerging that chances of survival of the smallest and most preterm infants relates not only to nurse staffing ratios, facilities available for care, but also to the specialist levels of professional education and experience of the nurse delivering the care [12]. The implication is that nurses and midwives ready to provide neonatal care services should undertake induction programme which relate specifically to the fundamental care of the neonates and their family within neonatal care services. It is also important that all nurses involved in direct clinical care of neonates should undertake newborn life support course appropriate for their role.

This study also revealed that 26.3% of the respondents had degree qualification (table 1). This result is poor. Clinical nurses should be encouraged to further their education so that they can be at par with other members of the healthcare team, contribute meaningfully when decisions are made with regard to clinical practice and be informed with the current trends in clinical practice. Nurses' education is important in promoting and facilitating neonatal care [13] [14].

### Quality of neonatal care services given by nurses

This study revealed that the grand mean and standard deviation of the quality of neonatal care given by nurses in selected tertiary health institutions in South-Eastern Nigeria was  $M= 2.88$ ,  $SD=0.69$  indicating good quality care (Table 2). This result implies that quality of neonatal care is in line with the recommendation of World Health Organization that for quality of neonatal health care to be achieved, the health care must be safe, effective, timely, efficient, equitable and people-centered [9]. However, the need to improve the quality of neonatal care at all time is imperative. Experts have stated that to improve the quality of neonatal nursing care and enhance the role of the nurse in providing quality services to neonates, nurses should undergo series of update lectures and practical training courses in neonatal care [15].

### Attitude of nurses to neonatal care services

Findings from the study indicated poor general attitude of nurses in neonatal care (Mean=2.42, SD=0.38) (Table 3). This result is in contrast with the observation of some researchers who found most neonatal care units nurses showing positive attitude to care of the neonates and were keen to implement their practices [16]. It is a well-established fact that attitude is a major determinant of behaviour. In this study, it was noted that 'poor' acknowledgment was given to the benefits of neonatal care in facilitating bonding, enhancing the physical well-being of the neonate, and increasing parents' confidence in caring for their neonates. The underlying causes could be due to inappropriate nurse/neonate ratio and lack of motivation probably caused by poor salary structure [17]. The need to put up measures to identify and solve the factors influencing nurses attitude to neonatal care is very importance.

Finally, findings from the study indicated that staff strength (nurse/neonate ratio) of the nurses significantly influenced the attitude displayed by nurses in their care for the neonates [ $\chi^2 =9.293$ , p-value= 0.026] (Table 4). Appropriate nurse/neonate ratio is needed to maintain acceptable standard of care to neonates which may improve the attitude of nurses to neonatal care [17]. Safe staffing is defined as the appropriate number and skill mix of nursing personnel on duty at any one time, which is critical for neonatal outcome [18].

### Conclusions

This study indicated that nurses in neonatal units of the tertiary health care institutions rendered good quality care to the neonates. However, the nurses generally displayed poor attitude while discharging their duties. Staff strength of the nurses significantly influenced the attitude they displayed in their care of the neonates.

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