

PRACTICE OF KANGAROO MOTHER CARE OF THE NEWBORN AMONG POSTPARTUM MOTHERS ATTENDING HEALTHCARE FACILITIES IN ANAMBRA STATE, NIGERIA.

Agbim Ebele Evelyn and Chiejina Edith Nkechi

Department of Nursing Science, Faculty of Health Sciences and Technology, Nnamdi Azikiwe University Awka (Nnewi Campus), Anambra State, Nigeria.

Email: ebeyevy1st@gmail.com; +2348036951577 / nkechichiejina@yahoo.com; +2348037463279

Key Word:

Kangaroo-Mother-Care, Practice, Newborn, Postpartum Mothers, Healthcare Facilities.

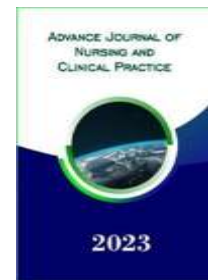
Abstract: Kangaroo Mother Care (KMC) is a cost-effective and high-impact intervention for improving newborn survival. This study aimed at investigating the practice of KMC among postpartum mothers attending healthcare facilities in Anambra State, Nigeria. The objectives of the study were: To determine the level of adoption/practices of kangaroo mother care of the newborn among postpartum mothers attending Healthcare Facilities in Anambra State, Nigeria and to identify the gestational age of infants that are exposed to kangaroo mother care by postpartum mothers attending Healthcare Facilities in Anambra State. A descriptive cross sectional survey method was used for the study. A sample size of 374 postpartum mothers was selected for the study using multi-stage sampling technique. Questionnaire on practice of kangaroo mother care was used to collect data. Reliability test of the instrument involving 34 participants attending postnatal clinic in two healthcare facilities which were not part of the selected healthcare facilities indicated Cronbach alpha score 0.85. Data collected were analyzed using frequency counts and percentages for the objectives of the study. Chi square was used to test the hypotheses at $P = 0.05$ level of significance. Result revealed that 71.39% of the respondents had poor level of practice of KMC and that newborns across all gestational ages were exposed to kangaroo mother care. The study also showed that there was no significant association between practice and knowledge of KMC ($X^2 = 2.73$, $P = 0.098$), there was no significant difference across the gestational age of newborns that received Kangaroo mother care ($X^2 = 5.83$, $P = 0.934$). Nurses and Midwives should intensify health education on the benefits of the practice of kangaroo mother care of the newborn during antenatal visits of mothers in healthcare facilities and in the community in general.

Introduction

The birth of a preterm infant can be a turbulent and sometimes traumatic experience for parents (1). Over 20 million of preterm and low birth weight (LBW) infants are born each year worldwide (2). Provision of interventions both

community-based and hospital-based in the care of these infants may improve outcome for both the parents and the infants and KMC has become a very important way of caring for these high-risk infants (1,2).

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KMC is defined as early developmental, prolonged and continuous care involving postpartum mothers or fathers holding their infants upright with skin-to-skin contact between the low birth weight (LBW) infant and the baby's mother, or a substitute such as the father or another relative (3). KMC has been proven to significantly improve growth, reduce mortality and morbidity of the newborn particularly from hypothermia, hypoglycemia and nosocomial sepsis in neonates (4). For term babies, KMC results to physiologic stability (temperature and blood pressure regulation, heart rate and respiratory stability), brain, cognitive and motor development, improved immune system function, weight gain, better deep sleep and greater bonding with decrease in stress and crying (5).

KMC has great benefits for the survival of premature babies. However, few mothers practice KMC and there is little evidence on its acceptability (6). Some mothers do not feel comfortable practicing KMC as it is a common practice to carry babies on the back and postpartum mothers find it strange to place a baby in front making such cultural practices hinder adoption/practice of KMC (7). Despite evidence for mortality and morbidity reduction in low and middle income setting and endorsement from World Health Organization, adoption/practice of KMC has been limited and has been identified as an intervention with significant health system barriers (8). The practice is to start KMC earlier as soon as the baby is clinically stable, and this should result in

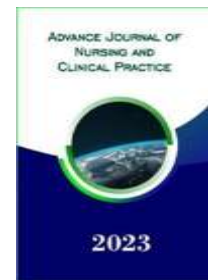
a higher impact since the majority of neonatal deaths especially for preterm babies occur in the first few days of life (9). With the practice of KMC, infants can be discharged home much earlier than with conventional care (10).

The focus of KMC is mainly for small or preterm babies. However, in places where many or most babies (term babies) are born small, KMC can be practiced for all the babies. In this way, small or preterm babies will be sure to get the much-needed benefits from KMC (11). In LBW infants weighing 2000 g or less, who are unable to regulate their temperature, KMC is at least as safe and effective as incubator care (12). KMC is particularly also important when caring for term infants with low birth weight of less than 2500g in poor countries where there is often high mortality rate in hospitals which cannot offer sophisticated care. These term small infants often die of hypothermia (cold) or infection (13). Studies have shown that the number of low-birth-weight infants (preterm and term) dying in hospitals without incubators can be dramatically reduced if KMC is introduced. Even in industrialised countries, the mortality rates can be reduced with KMC (14). So, this study investigated the practice/adoption of kangaroo mother care among postpartum mothers attending healthcare facilities in Anambra State, Nigeria.

Research questions:

1. What is the level of adoption/practice of kangaroo mother care by postpartum mothers attending healthcare facilities in Anambra state, Nigeria?

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2. What is the gestational age of neonates exposed to kangaroo mother care by postpartum mothers attending healthcare facilities in Anambra State, Nigeria?

Research hypotheses:

There is no significant difference across the gestational age of newborns that receive Kangaroo mother care given by postpartum mothers attending healthcare facilities in Anambra State.

Materials and Method

Design and Sampling:

A cross sectional descriptive study was used for the study. A sample size of 374 postpartum mothers attending postnatal clinics was selected using multi-stage sampling technique.

Instrument of Data Collection:

Questionnaire on practice of KMC was used to collect data. The instrument consisted of sections A, B, and C. Section A consisted of items on socio-demographic characteristics of the respondents and the newborn infants such as mothers' age, marital status, birth weight of the newborn etc, section B consisted of items on practice/adoption of KMC for care of the newborn among postpartum mothers' e.g. I adopted continuous type of KMC in the care of my newborn, due to the need to meet up with house-hold chores and other siblings of my newborn, I implemented intermittent type of KMC in the care of my newborn etc and section C consisted of items on gestational age of newborns exposed to KMC among postpartum mothers' e.g. KMC preferably to be carried out on babies born extremely preterm (less than 28

weeks of gestational age), KMC preferably to be carried out on the newborn classified as very preterm (28 to less than 32 weeks of gestational age), KMC preferably to be carried out on newborns from 38-42weeks full term of gestation etc.

Reliability of the instrument was established using split half reliability test, and the Cronbach alpha score was 0.85.

Ethical consideration:

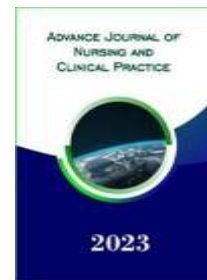
This research was approved by the ethics and research committee of the Health Facilities where the study was conducted. Written consents were obtained from the respondents before administering the questionnaires. Letters of introduction were addressed to Heads of Department in the healthcare facilities in Anambra State. The researchers visited the selected healthcare facilities and permission was obtained from the Heads of the selected healthcare facilities to gain access to the respondents.

Method of Data Collection:

The researchers obtained permission from heads of the Health Facilities to collect data as well as informed consent from the respondents. Copies of the instrument were administered to the respondents on the days of their visits to the post-natal clinics. The researchers engaged one research assistant in each of the selected healthcare facilities to help in the administration of the instruments. 374 copies of the questionnaire were administered to the respondents and same number were returned.

Data Analysis:

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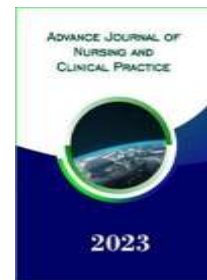
Statistical Package for Social Sciences (SPSS) version 23.0 was used as the statistical tool for analysis. Descriptive statistics of frequency counts, and percentages were used for analysis of

the socio-demographic data and research questions. Chi-square was adopted for testing the hypotheses at 0.05 level of significance.

Result

Table 1: Showing the Socio-Demographic Data of the Respondents

Variable	Frequency (n=374)	Percentage (%)
Age of mother		
18-22years	43	11.50
23-27years	144	38.50
28-32years	145	38.77
33years and above	42	11.23
Total	374	100
Marital status		
Married	368	98.40
Single	6	1.60
Total	374	100
Number of children		
One child	57	15.24
Two children	174	46.52
Three children	126	33.69



Four children and above	17	4.55
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Total	374	100
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Educational background

Primary level	50	13.37
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Secondary level	202	54.01
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Tertiary level	122	32.62
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Total	374	100
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Mothers' Occupation

Artisan	69	18.45
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Business/Trader	207	55.35
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Civil servant	96	25.67
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Others	2	0.53
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Total	374	100.0
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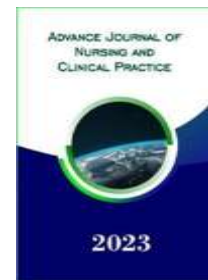
Gestational age of the newborn

<28weeks	10	2.67
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28-31weeks	80	21.39
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32-36weeks	181	48.40
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38-42weeks	103	27.54
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Total	374	100
Birth weight of newborn		
<2.5kg	10	2.67
2.5-2.9kg	95	25.40
3.0-3.4kg	185	49.47
3.5kg and above	84	22.46
Total	374	100
Mode of delivery		
Assisted delivery e.g. forceps/vacuum	35	9.36
Caesarean section	8	2.14
Spontaneous vaginal delivery	331	88.50
Total	374	100
Presence of malformation of newborn at birth		
No	374	100
Total	374	100

Table 1 shows that 43(11.50%) of the respondents were from ages 18-22years, 144(38.50%) were from 23-27years, 145(38.77%) were of ages 28-32years, 42(11.23%) were of ages 33years and above. Majority of the respondents 368 (98.4%) were married, and 6(1.6%) were single.

57(15.24%) had one child each, 174(46.52%) had two children, 126(33.69%) had three while 17(4.55%) had four children. The table shows that based on educational level, 202(54.01%) had their highest educational level at secondary level, 122(32.62%) at tertiary level and 50(13.37%) at

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primary level. 69(18.45%) were artisans, 207(55.35%) were traders, 96(25.67%) were civil servants, while 2(0.53%) had other occupation. The result of the analysis of the gestational age of the newborn shows that 10(2.67%) were born at gestational age of <32weeks, 80(21.39%) were of gestational age of 28-31weeks, 181(48.40%) were of gestational age 32-36weeks, and 103(27.54%) were of gestational age of 38weeks and above. 10(2.67%) of the newborns had birth weight of

<2.5kg, 95(25.40%) had birth weight of 2.5-2.9kg, 185(49.47%) had birth weight of 3.0-3.4kg and 84(22.46%) had birth weight of 3.5kg and above. The result on mode of delivery revealed that 35(9.36%) delivered through assisted delivery, 8(2.14%) delivered through caesarean section and 331(88.50%) delivered through spontaneous vaginal delivery. 374(100%) of the respondents' newborns had no form of malformation at birth.

Table 2. Showing level of practice of kangaroo mother care of the newborn by postpartum mothers attending healthcare facilities in Anambra State. (n = 374)

Variable	Yes (%)	No (%)
I adopted continuous type of KMC in the care of my newborn	239 (63.9)	135 (36.1)
Due to the need to meet up with house-hold chores and other siblings of my newborn, I implemented intermittent type of KMC in the care of my newborn	103 (27.5)	271 (72.5)
The newborn's position is controlled frequently by me to prevent my newborn from dropping/falling	67 (17.9)	307 (82.1)
The air way of the newborn is always maintained as I always support my newborn by keeping the trunk and neck straight.	137 (36.6)	237 (63.4)
After discharge from hospital, I will continue giving KMC at home	261 (69.8)	113 (30.2)

Summary: Good practice 107(28.61%), Poor practice 267(71.39%)

Table 2. shows that 63.9% of the respondents practiced continuous type of KMC in the care of the newborn. 27.5% indicated that they implemented intermittent type of KMC in the care of the newborn due to the need to meet up with house-hold chores and care of other siblings of the newborn. 17.9% indicated that they controlled frequently the newborn's position to prevent their newborn from dropping/falling. 36.6% indicated maintaining the newborn's airway as the newborn is always supported by keeping the newborn's trunk and neck straight. 69.8% indicated that they will continue giving KMC at home after discharge. The table showed that 107(28.61%) of the respondents had good practice of KMC while 267(71.39%) had poor practice of KMC of the newborn.

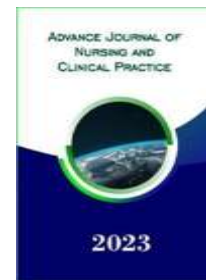


Table 3. Showing gestational age of newborn exposed to kangaroo mother by postpartum mothers (n = 374)

Variable	Yes (%)	No (%)
Babies born extremely preterm (less than 28 weeks of gestational age)	362 (96.8)	12(3.2)
Very preterm (28 to less than 32 weeks of gestational age)	346 (92.5)	28 (7.5)
Moderately preterm (32 to less than 36weeks of gestation)	312 (83.4)	62 (16.6)
Newborns from 38-42weeks full term of gestation	162 (43.3)	212 (56.7)
KMC can be practiced for all babies including term babies born as small for gestational age (less than 2500g)	231 (61.8)	143 (38.2)

Table 3 shows that 96.8% babies born extremely preterm (less than 28weeks of gestational age) were exposed to KMC. 92.5% very preterm (less than 32weeks of gestational age) were being exposed to KMC. 83.4% moderately preterm (32 to less than 36weeks of gestation) were exposed to KMC. 43.3% newborns from 38-42weeks (full term) of gestation were exposed to KMC. 61.8% indicated that KMC is practiced for all babies especially in places where many or most babies (term babies) were born small (less than 2500g).

Table 4. Chi-square comparison of the gestational age of newborns that receive Kangaroo mother care given by postpartum mothers attending healthcare facilities in Anambra State.

Variable	Response (%)		Total (%)	x ² -value	p-value
	No (%)	Yes (%)			
Babies born extremely preterm (less than 28 weeks of gestational age)	12 (3.2)	362 (96.8)	374 (100.0)	0.74	0.387
Very preterm (28 to less than 32 weeks of gestational age)	28 (7.5)	346 (92.5)	374 (100.0)	9.47	0.812
Moderately preterm (32 to less than 36weeks of gestation)	62 (16.6)	312 (83.4)	374 (100.0)	1.49	0.221
Newborns from 38-42weeks (full term) of gestation	162 (43.3)	212 (56.7)	374 (100.0)	0.73	0.392
KMC can be practiced for all babies especially in places where many or most babies (term babies) are born small (less than 2500g)	142 (38.1)	232 (61.9)	374 (100.0)	0.46	0.495
Overall	128(34.2)	246(65.8)	374(100.0)	5.83	0.934

***= Significant at 0.05 level**

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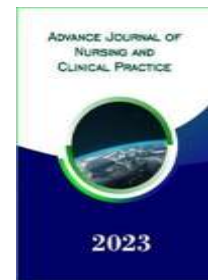


Table 4. shows there is no significant difference across the gestational age of newborns that receive Kangaroo mother care. The overall result of the comparison of the gestational age of the newborns was $X^2 = 5.83$, $P = 0.934$, thus, the null hypothesis is accepted.

Discussion

The findings from this study revealed that majority of the participants 71.39% had poor level of adoption/practice of KMC. This could be due to wrong perceptions that KMC is not practicable as most postpartum mothers are not supported by their families to carryout KMC on the newborn, some of the mothers complained of pain in the chest during the practice, KMC is not useful as the usual practice of carrying newborns is for postpartum mothers to wrap them against their backs and not on their chest, and KMC not being culturally acceptable. The findings of this study is similar to the findings of Chan et al (2016) (15) that revealed KMC is not widely accepted by postpartum mothers as most postpartum mothers tend not to feel supported by their families or communities and that the non-acceptance and adoption of KMC is also related to time factor due to responsibilities at home and work preventing postpartum mothers from devoting the time needed for continuous and extended KMC. Nsemo, Mgbekem and Ekwere (2018) (16), in their study found that majority of the participants perceive that practicing KMC puts them under pressure. Abrham, Naganiru and Binoy (2016) (17), in their study in Public Hospitals, Eastern Ethiopia

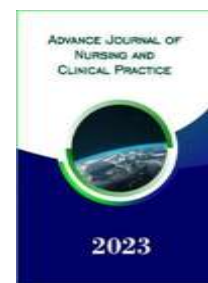
found most of the respondents mentioned that the main barriers of KMC utilization were due to lack of knowledge regarding KMC practice, and discomfort experienced by the mothers.

The findings from the study also revealed that practice of KMC cuts across various gestational age of the newborns (Table 3). This finding is similar to that of Cattaneo (2017) (18) who found that KMC technique is commonly used for preterm babies who are more likely to suffer from hypothermia, it is also used to describe the technique of placing full-term newborns very soon after birth on the bare chest of their postpartum mothers. Engmann et al (2013) (19) in their study found that infant of normal weight and gestational age can also benefit from KMC, especially in cold conditions. Also, this study is similar to the findings of Yusuf, Fiseha, Dulla, and Kassahun (2018) (20) in their study in some selected hospitals in Yirgalem Town, Southern, Ethiopia which revealed that KMC was initiated on all newborns immediately after birth after the infant had been stabilized and is continued at home. The absence of significant difference across the gestational age of the newborns exposed to KMC ($P=0.934$) (table 4) in the opinion of the researchers, is an indication that there is no age boundary among newborns that could benefit from KMC, Cattaneo et al (2018) (11) stated that KMC can be practiced for all babies.

Conclusion

The study showed poor level of practice of KMC among postnatal mothers attending Healthcare

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Facilities in Anambra State, Nigeria. The study also showed absence of significant difference across the gestational age of the newborn that were exposed to KMC.

Recommendations

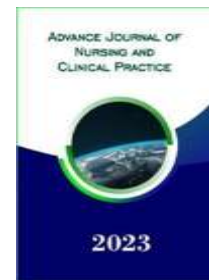
Nurses and Midwives should heighten the level of awareness on benefits of the practice of kangaroo mother care of the newborn during pregnancy and follow-up through health education in preparation for postnatal implementation of KMC in healthcare facilities and continuation at home after discharge.

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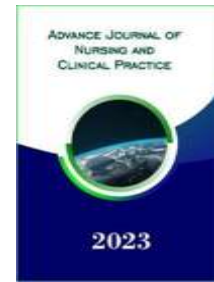
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