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Maternal Knowledge of Kangaroo Care: Level of Practice in Health Facilities in Calabar Metropolis

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ABSTRACT: *This study is aimed to assess the level of knowledge and identify the level of practice of Kangaroo care among mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis. The study was a quantitative, descriptive survey design study. Four objectives and four corresponding research questions guided the study. A self-designed questionnaire was used to collect information and the Statistical Package for Social Sciences (SPSS), Version 24 was used to analyse the data. Demographic data revealed that 30.5% of the respondents were between 18 – 30years, 53.4% were between 31 – 40years, 10% were between 41 – 50years while 6.1% were between 50years and above, 16% had no formal education, 10.8% had primary school education, 20% had secondary school education while 53.2% had tertiary education. The result of the study revealed that 72.5% of the total respondents has little or no knowledge of Kangaroo mother care while only 27.5% has knowledge of Kangaroo mother care, 24.1% of the respondents had practiced Kangaroo mother care while 75.9% had not practiced Kangaroo mother care, lack of assistance from husband and family member in home chores is*

part of the factors that limited the practice of Kangaroo mother care among women with preterm and low birth weight babies in health facilities and that assistance from husband and family member in home chores enabled them practice Kangaroo mother care. The study concludes that the level of knowledge and practice is low among women in health facilities in Calabar Metropolis. Therefore, the study recommends that training and education about Kangaroo Mother Care practice should be carried out on a regular basis.

KEYWORDS: kangaroo, mother, care, knowledge, practice

INTRODUCTION

With 15 million premature births each year and more than one million of these preterm infants dying each year, preterm birth is a significant worldwide health problem (Bilal, et al., 2021). Indirectly, preterm birth leads to an even higher percentage of neonatal deaths since it increases the likelihood that a newborn would die from infection. Preterm birth issues directly account for more than 35% of all neonatal deaths annually. Preterm birth rates are rising both in high- and low-income countries around the world (Bilal, et al., 2021). The top 10 countries with the highest rates of preterm births include high-income countries like the USA, middle-income countries like India, China, the Philippines, Indonesia, and Brazil, and low-income countries like Nigeria, Pakistan, Bangladesh, and the Democratic Republic of the Congo (WHO, 2018). Therefore, having interventions that can be used and are practicable in both high- and low-income contexts is particularly desirable. Neonatal hypothermia is one of the main risk factors for morbidity and mortality in the first 28 days of life.

Scaling up the kangaroo mother care has received increased attention recently as a result of preterm birth overtaking other causes of under-five mortality (Al-Shehri & Binmanee, 2019). Researchers contrasted traditional newborn care with kangaroo mother care (KMC) in an analysis of 21 randomized controlled trials (3042 infants). They discovered that KMC decreased lower respiratory tract disease, hypothermia, severe sickness, severe infection, and mortality. They also noted that the KMC group's growth metrics were superior. The authors came to the conclusion that KMC provides an efficient and secure substitute for traditional neonatal care for low birth weight (LBW) newborns, particularly in countries with limited resources (Bera et al., 2016).

KMC is a technique that warms and nourishes a newborn infant, especially one who was born preterm or with a low birth weight, by applying skin-to-skin contact, usually with the parent's body. Papau New Guinea (PNG) has only recently adopted KMC, despite the fact that it has been utilized for 40 years in many other parts of the world. The midwives and medical staff at Mt.

Hagen Hospital's labor ward have been utilizing KMC for about a year as an essential component of a significant initiative (UNICEF, 2017).

KMC is an approach to the care of preterm and/or LBW infants that involves and empowers mothers and families as the primary providers of their newborn's biological (warmth and feeding) and psycho-emotional (contact, caring, bonding, and comfort) requirements. The basis of KMC is the kangaroo position, which involves placing and maintaining the baby in an upright position on the mother's chest, skin-to-skin contact, and under her clothes. However, timing of initiation, continuity, and duration may change depending on the infant's stability and the care environment. The goal is for early KMC initiation and continuous performance (over 18 hours per day).

Even though the WHO recommends KMC for infants weighing 2000 g or less, adoption has been slow (Chan et al. 2016). It is crucial to identify the barriers and enablers to the sustainable adoption of KMC because sub-Saharan Africa (sSA) has the highest neonatal death rates in the world (28 per 1000 live births compared to a global rate of 18 per 1000 live births) (WHO, 2019). According to Jamali et al. (2019), a study in Pakistan found that community stakeholders frequently have knowledge of health issues, particularly those involving maternal and neonatal health. KMC should be implemented in each of their various healthcare facilities and kept up at the household level, the management and the medical staff agreed. The study's participants stated that it is essential to ensure the availability of equipment, supplies, a water-sanitation facility, a modified patient ward (such as a curtain or separate room), the quality of services, and training for healthcare professionals in order to successfully implement KMC at the facility level.

Despite the fact that KMC is an essential part of neonatal health initiatives, there is little systematic data on the difficulties that mothers and other stakeholders face when implementing KMC (Seidman et al. 2015). This systematic study aimed to identify the most frequently reported barriers to practice for fathers, health professionals, and mothers as well as the most frequently reported enablers of practice for mothers. The top five resource-related barriers for mothers included worries about the environment or resources of the facility, negative perceptions of staff behaviors or interactions with staff, a lack of support for KMC practice or other obligations, and a lack of knowledge about KMC or infant health. When only publications from low- and middle-income countries were considered, "Pain / exhaustion" received a higher score. The top enablers of the practices included "mother-infant bond" and "help from family, friends, and other mentors." Our research shows that mothers can understand and value KMC and that it benefits mothers, infants, and families (Seidman et al. 2015).

In their study, Smith et al. (2017) found that factors preventing caregivers from adopting KMC included a lack of buy-in, a lack of social support, a lack of time at the hospital or at home, and

health issues for the mother or child. According to mothers and nurses, there are a number of significant enablers and barriers to providing kangaroo mother care in Ethiopia, including a lack of understanding of KMC, family responsibilities and workload, a lack of community awareness of KMC, social practice, and traditional adaptation (Asmare et al. 2021). The main challenges faced by health professionals and the environment are inadequate monitoring and follow-up, a lack of resources, particularly in the area of cleanliness, and poor monitoring. Lack of training, poor managerial and administrative attention, a lack of rooms and amenities, a heavy workload, and a lack of time were among the factors that nurses claimed hindered the scaling-up of kangaroo mother care (Asmare et al., 2021). According to the most recent survey by Hadush et al (2022), healthcare professionals most frequently mentioned a lack of staff, skilled healthcare professionals, and problems with the infrastructure and equipment for KMC practices. Lack of understanding, a lack of support, the mother's responsibility for the rest of the family, holding babies in the front being traditionally frowned upon, and the desire for incubators for small babies' better care were among the challenges encountered in the community. The continuation of KMC at home and the implementation of KMC in healthcare facilities both benefited from antenatal and postnatal care. The presence of community health workers and the community's positive attitude toward them were additional favorable factors (Hadush et al., 2022).

Despite numerous training programs organized by the ministry of health and non-governmental organizations at various levels of health care, from tertiary to primary, more than two decades after KMC was adopted there, no study has been done to determine the degree of adoption of this practice in Nigerian healthcare institutions (Onubugo & Okoh, 2016). According to estimates by Onubugo and Okoh (2016), KMC, which was first introduced in Nigeria in the 1990s, saved over 19,000 lives as of 2015, assuming that all preterm neonates were treated. Pediatric healthcare professionals adopted KMC in the healthcare facilities where they work and scaled it up to appropriately involve grassroots participation with the goal of successfully meeting this estimate as their driving force. The creation of a homelike environment and providing mothers with more thorough information about KMC in the health facility may improve the wellbeing of mothers and infants. To enhance the use of KMC, larger and better equipped KMC wards are required, in addition to frequent KMC training sessions for nursing staff. Furthermore, adoption of this widely regarded as effective and efficient method of promoting neonatal survival, known as kangaroo mother care (KMC), has not increased since the WHO recommended it in Edo State more than ten years ago. With almost 700 newborn deaths per 10,000 live births, Nigeria has the seventh-highest newborn mortality rate among the ten African nations (Esewe & Phetlhu, 2022). The purpose of this study therefore is to assess the level of knowledge and identify the level of practice of Kangaroo care among mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis.

Statement of the Problem

The United Nations (UN) 2020 goal 3 of the Sustainable Development Goals (SDG) stipulates that health systems must guarantee a healthy population. The WHO had recommended kangaroo mother care (KMC) as a practice for managing the temperature of preterm/low birth weight infants. However, after leaving the hospital, mothers are burdened with the responsibility of feeding and maintaining the temperature of their newborn at home. In studies conducted in KMC is observed to be below 50% in sub-Sahara, as reported by Smith et al. (2017), Jamali, (2019), Asmare et al. (2021), Hadush et al. (2022), and many others. According to studies conducted in Nigeria by Onubugo & Okoh (2016), Nsemo et al. (2018), and Esewe & Phetlhu (2022), the practice is also less than 50%. Based on this, it is necessary to evaluate and enhance KMC practice in sub-Saharan Africa, including Nigeria.

Anecdotal evidence led the researcher to conclude that some mothers who live in Calabar, Cross River State, do not practice KMC at home. The researcher used Google search, PubMed Health, Google Scholar, and EMBASE to search for literature in order to analyze the phenomena in Nigeria with a focus on Cross River State. A knowledge gap existed because there was a lack of information on the research topic regarding KMC enablers and barriers. In order to identify factors influencing their knowledge and practice, the researcher thus set out to examine the maternal practice of KMC after hospital discharge.

The PEO framework was used to develop the problem statement for this study, where P stands for population, E for exposure or phenomenon of interest, and O for outcome. The problem is defined as follows: among mothers of preterm babies (P), infants released from hospitals (E), and what is the level of knowledge of KMC and identified practice (O).

The city of Calabar, in Cross River State, is anticipated to experience the greatest effects of kangaroo mother care on newborn care due to the city's high concentration of low-income households. The fact that KMC practice began in most low- and middle-income nations at a teaching hospital or other tertiary facility rather than expanding to general hospitals and primary healthcare facilities is one of the reasons given for the poor expansion of KMC practice on a large scale in these nations. The World Health Organization (WHO) recommends routine skin-to-skin care (SSC) immediately after delivery for every baby as part of routine care to ensure that all babies stay warm in the first two hours of life. Kangaroo mother care has been confused with SSC. This holds true for sick newborns as well, prior to referral for additional care. With few or no neonatal care units, primary healthcare facilities also have few options for providing care for preterm infants. These are frequently located in far-off referral hospitals that are understaffed and poorly-equipped. Poor KMC implementation has prevented Calabar's relatively few health facilities from having a significant impact on lowering the unacceptable high neonatal mortality rate in these low-income areas. Because of this, the researcher aims to evaluate mothers who

have preterm and low birth weight babies in health facilities in Calabar Metropolis' Kangaroo care knowledge and practice levels.

Aim and Objectives of the Study

The aim of the study is to assess the level of knowledge and identify the level of practice of Kangaroo care among mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis.

The objectives of the study are to;

1. Assess the level of knowledge of mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis on Kangaroo mother care.
2. Assess the level of practice of Kangaroo mother care among mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis.

Hypothesis

The following hypothesis guided the study;

H_{01}: there is no significant relationship between the educational qualification and level of knowledge of mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis on Kangaroo mother care.

H_{02}: there is no significant relationship between the age and level of knowledge of mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis on Kangaroo mother care.

METHODOLOGY

The study employed the Cross-sectional study design. The population of the study comprised of 592 and 798 mothers of preterm, low birth weight and new born babies in the labour ward in General hospital and the Primary Healthcare Center, Ekpo Abasi, Calabar respectively from December 2022 to March 2023. The sample size of 424 was selected from the total population of 1340 using multi stage sampling procedure. The instrument for data collection was a self-structured questionnaire developed by the researcher. Version 23 of SPSS was used to analyze the data. To present the data, frequency tables, charts, and cross-tabulations was created. Descriptive statistics was used as data analysis method. Hence, simple percentage and charts was used to answer the research questions.

RESULTS

3.1. Socio-demographic Characteristics of Respondents

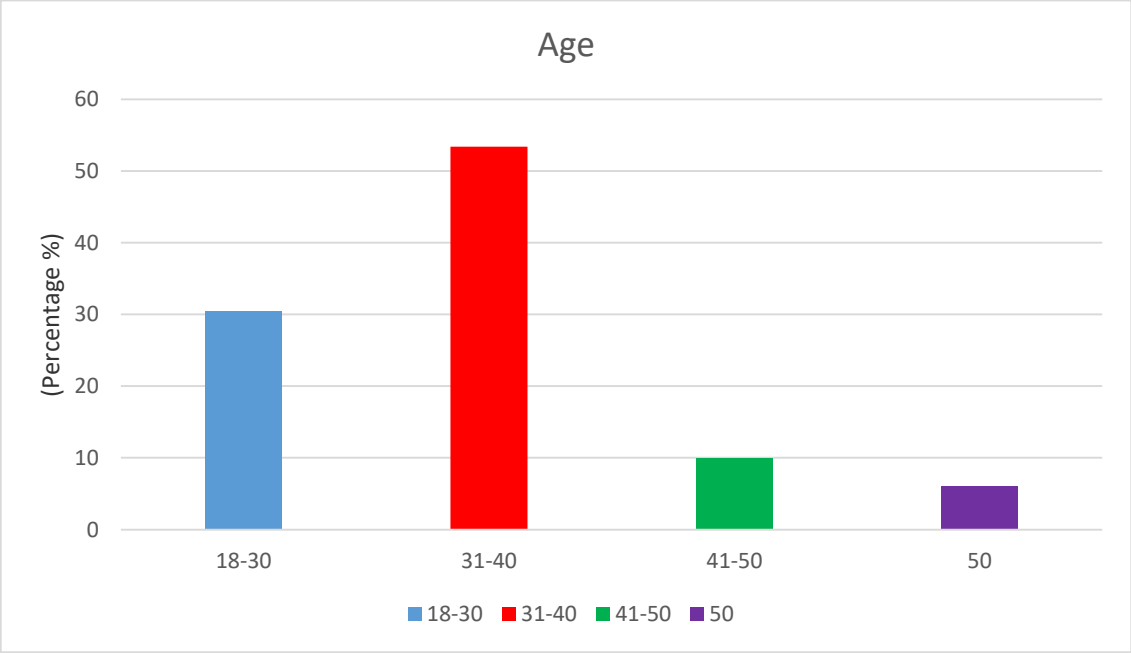

Fig. 1: Age of respondents

Fig. 1, show that 30.5% of the respondents were between 18 – 30years, 53.4% were between 31 – 40years, 10% were between 41 – 50years while 6.1% were between 50years and above.

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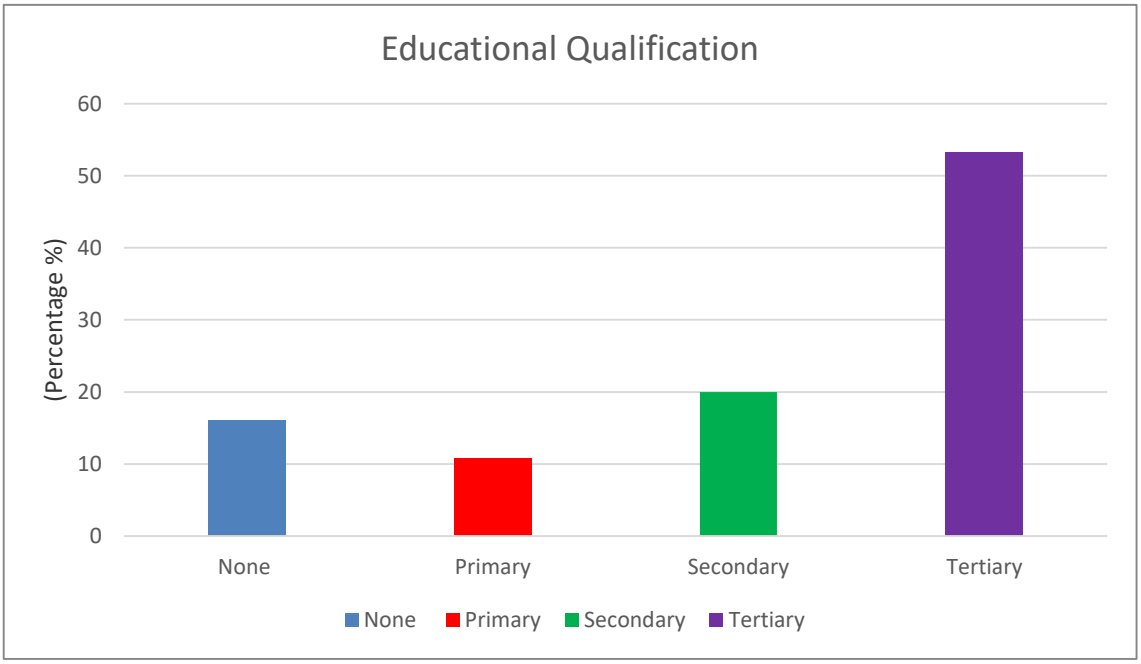

Fig. 2: Educational Qulification of Respondents

Fig. 2, shows that 16% had no formal education, 10.8% had primary school education, 20% had secondary school education while 53.2% had tertiary education.

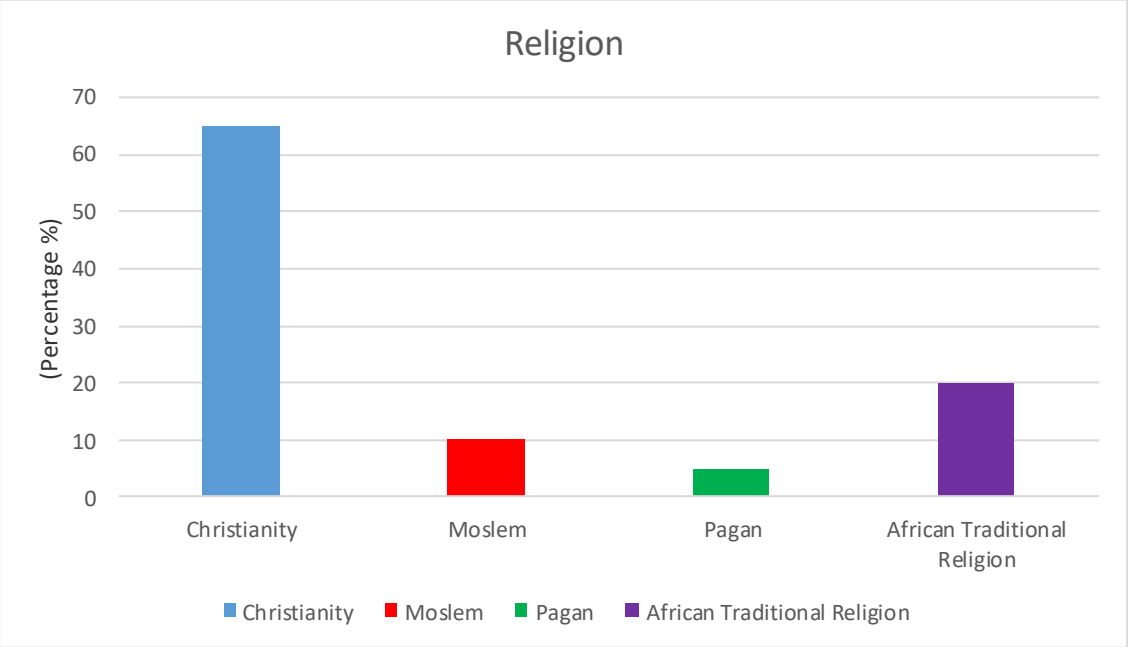

Fig 3: Religion of Respondents

Fig. 3: revealed that that 65% of the respondents were Christians, 10% were Moslems, 5% Pagans while 20% were African traditional worshipers.

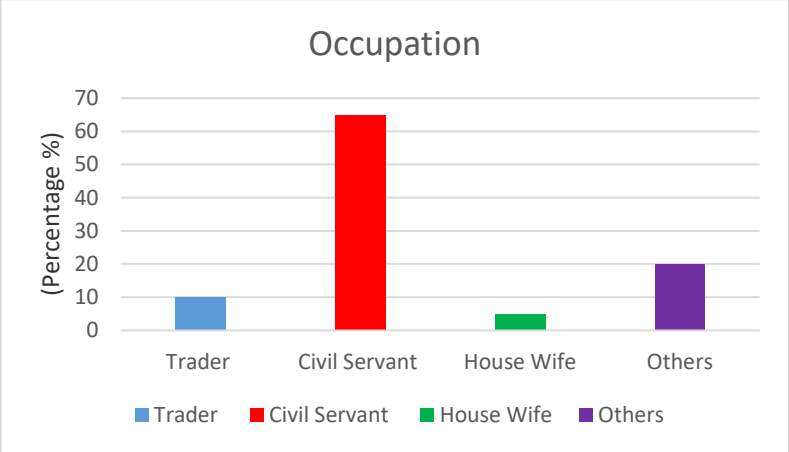

Fig 4: Occupation of Respondents

Fig. 4 revealed that 10% of the respondents were traders, 65% were civil servants, 5% were house wives while 20% were in other professions.

Objective 1: Level of knowledge of mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis on Kangaroo mother care?

Table 1: percentage and frequency of the level of knowledge of mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis on Kangaroo mother care

	Items	Yes	No
1	Kangaroo mother care	91 (23.3%)	300 (76.7%)
2	Do you know the reason for Kangaroo mother care	41 (10.5%)	350 (89.5%)
3	Do you know the importance of Kangaroo mother care	191 (48.8%)	200 (51.15%)
4	Kangaroo mother care is a method developed to provide thermal care for new born.	70 (17.9%)	321 (82.1%)
5	The essence of kangaroo mother care is to improve outcomes for new born and preterm infants.	83 (21.2%)	308 (78.8%)
6	Kangaroo mother care is to reduce the period of stay in the hospital after delivery.	69 (17.6%)	322 (82.4%)
7	Kangaroo mother care can serve as incubator for your preterm baby.	43 (10.9)	348 (89.1%)
8	Kangaroo mother care requires continuous skin–to – skin contact between the mother and her new born.	105 (26.9%)	286 (73.1%)
9	Kangaroo mother care can improve the wellbeing of your new born.	109 (27.9%)	281 (71.9%)
10	Kangaroo mother care has reduced neonatal mortality (death of new born).	70 (17.9%)	321 (82.1%)
11	KMC creates a strong bond between baby and mother	83 (21.2%)	308 (78.8%)
	Total	**27.5%**	**72.5%**

Table 1 revealed that 72.5% of the total respondents has little or no knowledge of Kangaroo mother care while only 27.5% has knowledge of Kangaroo mother care. This shows that the level of knowledge of the respondents is low.

Objective 2: level of practice of Kangaroo mother care among mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis.

Table 2: percentage and frequency of the level of practice of Kangaroo mother care among mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis

	Items	**Yes**	**No**
1	I practiced Kangaroo mother care	51 (13.0%)	340(87%)
2	I find it difficult tying the baby on you	41 (10.5%)	350 (89.5%)
3	Sometimes I get someone to assist you in tying the baby	191 (48.8%)	200 (51.15%)
4	I have practiced KMC twice	91 (23.3%)	300 (76.7%)
5	I practiced KMC by having skin –skin contact with my child	43 (10.9)	348 (89.1%)
6	I have not considered practicing KMC	109 (27.9%)	281 (71.9%)
	Total	**24.1%**	**75.9%**

Table 2 revealed that only 24.1% of the respondents had practiced Kangaroo mother care while 75.9% had not practiced Kangaroo mother care.

Hypothesis 1: there is no significant relationship between the educational qualification and level of knowledge of mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis on Kangaroo mother care.

Table 3 Correlation analysis on relationship between the educational qualification and level of knowledge of mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis on Kangaroo mother care.

Correlations

			Educational Qualifications	Level of Knowledge
Spearman's rho	Educational Qualifications	Correlation Coefficient	1.000	.87**
		Sig. (2-tailed)	.	.000
		N	391	391
	Level of Knowledge	Correlation Coefficient	.87**	1.000
		Sig. (2-tailed)	.000	.
		N	391	391

** Correlation is significant at the 0.05 level (2-tailed).

Table 3: reveals a correlation coefficient of 0.87. This coefficient shows that there is a positive relationship between the educational qualification and level of knowledge of mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis on Kangaroo mother care. The Spearman's rho table reveals p value of 0.000 and a sig. value of 0.05. Hence, since the sig value ($p = 0.000 < 0.05$) is lesser than 0.05 alpha therefore, the null hypothesis is rejected meaning there is a significant relationship between the educational qualification and level of knowledge of mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis on Kangaroo mother care.

Hypothesis 2: there is no significant relationship between age and level of knowledge of mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis on Kangaroo mother care.

Table 4 Correlation analysis on relationship between age and level of knowledge of mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis on Kangaroo mother care

Correlations

			Age	Level of Knowledge
Spearman's rho	Age	Correlation Coefficient	1.000	.81**
		Sig. (2-tailed)	.	.012
		N	391	391
	Level of Knowledge	Correlation Coefficient	.81**	1.000
		Sig. (2-tailed)	.012	.
		N	391	391

** Correlation is significant at the 0.05 level (2-tailed).

Table 4: reveals a correlation coefficient of 0.81. This coefficient shows that there is a positive relationship between the age and level of knowledge of mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis on Kangaroo mother care. The Spearman's rho table reveals p value of 0.012 and a sig. value of 0.05. Hence, since the sig value ($p = 0.012 < 0.05$) is higher than 0.05 alpha therefore, the null hypothesis is accepted meaning there is no significant relationship between age and level of knowledge of mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis on Kangaroo mother care.

DISCUSSION OF FINDINGS

This study is aimed at assess the practice of Kangaroo care: enablers and barriers among mothers with preterm and low birth weight babies in health facilities in Calabar Metropolis.

Level of Knowledge of Mothers

The findings of the study revealed that the level of knowledge of women about Kangaroo Mother Care is low. The findings are in accordance with that of Al-Shehri and Binmanee, (2019) who also discovered that the level of knowledge of women towards Kangaroo Mother Care is low.

Level of Practice Kangaroo Mother Care

The findings of the study revealed that the level of practice of KC was low. The findings of the study is in-line with a study carried out in Ghana by Nguah (2011) which found that mothers had little knowledge about KC practice and as such on 13% of the participants practiced continuous KC. Similarly, in Maharashtra all mothers continued KC at home once initiated in the hospital, however they had challenges like nuclear families, had to do house work, and hence could fail to practice KC for a long time (Rasaily et al., 2017).

CONCLUSION

In settings with limited resources, kangaroo mother care (KMC) has gained widespread support as an essential method of providing care for preterm and low birth weight (LBW) infants. Early, ongoing, and prolonged skin-to-skin contact, exclusive breastfeeding, and early discharge from the medical facility with close follow-up at home are all components of KMC. There is evidence that KMC significantly lowers infant mortality of stabilized preterm and LBW infants by 40%. Additionally, according to recent studies, community-initiated and immediate KMC both reduce the risk of death in LBW newborns by 30% and 25%, respectively. Sepsis rates have dropped and breastfeeding rates have risen in correlation with KMC. Furthermore, KMC can be used in a variety of settings and is a low-cost, low-tech intervention.

This study identified potential impediments and facilitators to mothers practicing KMC. According to the study, few women in felicity are knowledgeable about. It was also necessary to receive support from the family, community, and healthcare professionals and to provide setting support by healthcare policy planners/FMOH in order to improve mothers' and nurses' performance of practicing KMC and promote the health of preterm neonates through KMC.

Recommendations

Based on the findings of the study, the study recommends thus;

1. Staff motivation to offer and support the practice of KMC is vital for implementation. This support should be recognised as a key part of nursing care and considered by hospital administrators when assessing staffing levels and workload.
2. The support of spouse and family members is crucial for the successful integration of KMC into routine practice.
3. An understanding of the specific barriers and challenges to implementing KMC in particular settings is fundamental to the success of implementation. Performing a barrier analysis prior to implementation is recommended.
4. Educational sessions to explain the benefits and risks for the parents should be organised by health professionals.
5. It is recommended that more advocacy, education and training on KMC for post-natal mothers at all levels of health facilities should be encouraged and intensified for the benefit of the small babies and to reduce neonatal mortalities.

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