

Ezenwa Beatrice N
Ndukwu Lilian
Oyenusi Elizabeth E
Olatosi Olubukola
Moronkola Olaolu A
Fajolu Iretiola B
Ojulari Opeyemi
Idise Anita
Okafor Ifeoma P
Ezeaka Veronica C



Beyond Awareness: Cultural and knowledge barriers to kangaroo mother care uptake in Lagos, Nigeria

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Ezenwa Beatrice N, (✉)
 Oyenusi Elizabeth E,
 Fajolu Iretiola B, Ezeaka Veronica C
 Department of Paediatrics,
 College of Medicine, University of
 Lagos, Nigeria.
 Email: beatriceezenwa@yahoo.com

Ndukwu Lilian
 Moronkola Olaolu A, Idise Anita,
 Department of Paediatrics, Lagos
 University Teaching Hospital,
 Lagos, Nigeria

Olatosi Olubukola
 Department of Child Dental,
 College of Medicine, University of
 Lagos, Nigeria

Ojulari Opeyemi
 Department of Nursing Services,
 Lagos University Teaching Hospital,
 Lagos, Nigeria.

Okafor Ifeoma P
 Department of Community Health
 and Primary Care, College of
 Medicine, University of Lagos,
 Nigeria

Abstract: *Background:* Kangaroo Mother Care (KMC) is a World Health Organization recommended intervention proven to reduce mortality in preterm and low-birth-weight infants. Despite its efficacy, utilization remains low in many resource-limited settings. This study aimed to assess the knowledge, attitudes, and practices regarding Kangaroo Mother Care (KMC) among mothers in Lagos, Nigeria, and to identify the primary barriers to its adoption.

Methods: This community-based, descriptive cross-sectional survey was conducted with 334 mothers of infants aged 0-12 months using a multistage sampling method. Primary outcomes included the proportion of mothers with awareness, good knowledge, positive attitudes, and practice of KMC. Barriers to KMC uptake were also assessed.

Results: Awareness of KMC was high (93.4%). However, only 35.6% possessed good knowledge, and a significant majority (82.7%) were unaware of its specific benefits. Attitudes were predominantly negative (92.2%), and practice

was low (14.7%). The principal barriers identified were a cultural preference for traditional baby-carrying methods (58.1%) and the perception that KMC is foreign to local culture (21.9%). Mothers expressed a preference for receiving KMC information through simple messages in their local language and direct discussions with health workers.

Conclusions: A profound disconnect exists between high awareness and poor knowledge, attitude, and practice of KMC in this setting. The major impediments are socio-cultural, centered on a preference for traditional practices.. Effective scale-up requires culturally sensitive community engagement, empowerment of healthcare workers to provide counselling, and the development of localized educational materials to bridge the knowledge-attitude-practice gap.

Keywords: Kangaroo Mother Care; Knowledge transfer; Cultural barriers; Preterm infants; Nigeria

Introduction

The neonatal period—the first 28 days of life—remains the most vulnerable time for a child's survival. Problems encountered at this age may be long-lasting and may result in adverse neurodevelopmental outcomes. Globally, complications arising from preterm birth are the leading cause of death among children under five years of age.^[1,2] Infants born prematurely or with low birth weight (LBW) are at a significantly heightened risk of a myriad of adverse outcomes, including hypothermia,

hypoglycemia, severe infections, and long-term neurodevelopmental impairments.^[3-8] The burden of this mortality and morbidity is disproportionately borne by low- and middle-income countries (LMICs), where access to advanced neonatal care technologies, such as incubators, is often limited.⁹

In response to this challenge, Kangaroo Mother Care (KMC) has emerged as a compelling, evidence-based intervention. KMC is defined as the practice of providing continuous skin-to-skin contact between a mother

and her newborn, exclusive breastfeeding, and early discharge from the hospital with close follow-up.¹⁰ KMC is especially advocated in stable preterm and low birth weight (LBW) babies without ongoing life-threatening events, and also in those in whom incubator care is not available. The benefits of KMC are extensive and well-documented. Robust evidence, including a landmark multi-country randomized controlled trial, demonstrates that KMC initiated immediately after birth can reduce mortality in stable LBW infants by as much as 25-40%.¹¹ Furthermore, KMC promotes thermal regulation, enhances exclusive breastfeeding rates, strengthens maternal-infant bonding, reduces the incidence of nosocomial infections, and is associated with improved neurodevelopmental outcomes.¹²⁻¹⁴

Recognizing its immense potential, the World Health Organization (WHO) strongly recommends KMC as a standard of care for all stable preterm and LBW infants, positioning it as a critical strategy for improving newborn survival, particularly in resource-poor settings.^{2,10} Despite the robust evidence and international endorsement, the adoption and sustained practice of KMC remain inconsistent. Implementation is frequently hampered by barriers at multiple levels, including insufficient healthcare provider training, overcrowded health facilities, and, crucially, a lack of acceptance and understanding among families and communities.¹⁵ In Nigeria, which has one of the highest rates of neonatal mortality globally, the practice of KMC is notably low.^{16,17} It is noticed that despite this low-cost interventional mode of caring for preterm/ LBW babies, mothers in Nigeria are not utilizing it. Understanding the local knowledge, attitudes, and practices of mothers is an essential prerequisite for designing effective interventions to promote KMC.

This study, therefore, seeks to fill this gap by assessing the knowledge, attitudes, and practices regarding KMC among mothers in Lagos, Nigeria. It also aims to identify the specific barriers hindering its adoption. The findings will provide valuable insights for policymakers and healthcare providers to develop targeted strategies to increase the utilization of this life-saving practice and ultimately contribute to reducing neonatal mortality in this setting.

Methodology

Study Design

This community-based, descriptive cross-sectional study was conducted over a 3-month period in the Mushin Local Government Area (LGA) of Lagos State, Nigeria. Mushin is one of the 20 LGAs in Lagos State, with a population of about 631,857 inhabitants, of which 304,984 were females.¹⁸

Study Size

The sample size of 334 was calculated using Cochran's formula for descriptive studies.¹⁹ The prevalence was obtained from the studies done by Dalal et al.²⁰ and Solomon et al.²¹

Study Procedure

A multistage sampling method was employed to select mothers of infants (aged 0-12 months) residing in Mushin who were willing to participate in the study. The participants were selected by balloting, including the selection of streets and houses.

Ethical consideration

Approval for the research was obtained from the Research and Ethics Committee of the University (reference number: CMUL/HREC/09/17/440). Permission was also sought from the Medical Officer of Health (MOH) of Mushin LGA. Informed consent was obtained from the women before the administration of the questionnaire.

Data collection

A structured, pretested, interviewer-administered questionnaire was used for data collection. The questionnaires consisted of five sections: socio-demographics, knowledge/awareness of KMC, attitude towards KMC, acceptance/practice of KMC, and barriers to KMC utilization. Completed questionnaires were retrieved, checked for completeness, and entered in an Excel spreadsheet.

Statistical Analysis

The collected data were exported and analyzed using SPSS version 22.0. The results were expressed as means and percentages. The chi-square test was used to test the relationship between categorical variables at a 95% Confidence interval. A p-value <0.05 was taken as statistically significant.

Results

The 334 respondents with complete data were analyzed. The mean age of respondents was 29 ± 7.34 years. Table 1 shows the socio-demographic characteristics of the participants. Mushin was a Yoruba-dominated neighborhood. The majority had no advanced educational status. Nearly 93% of respondents have heard of KMC, yet only 35.6% possess good knowledge of it and can correctly define KMC as holding preterm LBW infants skin-to-skin to keep them warm (See Table 2). Respondents' source of information identified that 166 (53.2%) heard about kangaroo mother care for the first time from relatives /friends. However, the majority, 82.7%, of the

mothers were unaware of the benefits of KMC. Figure 1 and Table 3 show that most of the interviewed mothers (92.2%) had a negative attitude toward KMC and disagreed with most of the benefits of KMC. They had no interest in acquiring more knowledge of KMC and were unwilling to utilize or recommend it in the future (Table 4). Major barriers identified included the foreignness of the KMC method and its deviation from the local practice of carrying babies on one's back (58.1%), as shown in Table 5.

Table 1: Socio-demographic characteristics of participants

Variable	Frequency, n (%) (n=334)
<i>Age group (Years)</i>	
≤25	92(27.5)
26-30	109(32.6)
31-35	84(25.1)
>35	49(14.7)
<i>Ethnic group</i>	
Igbo	91(27.2)
Yoruba	214(64.1)
Hausa	22(6.6)
Others	7(2.1)
<i>Level of education</i>	
No formal education	91(27.2)
Primary education	214(64.1)
Secondary education	22(6.6)
Tertiary education	7(2.1)
<i>Occupation</i>	
Professional	20(6.0)
Skilled	139(41.6)
Unskilled	134(40.1)
Unemployed	41(12.3)
<i>Employment status</i>	
Employed	269(80.5)
Unemployed	65(19.5)
<i>Religion</i>	
Christianity	209(62.6)
Islam	123(36.8)
Others	2(0.6)
<i>Where participants delivered their last child</i>	
Hospital	250(74.9)
Traditional birth attendant's place	30(9.0)
Church	48(14.4)
Home	6(1.8)

Table 2: Knowledge of KMC among mother

Variable	Frequency, n (%) (n=334)
<i>Heard about KMC</i>	
Yes	312(93.4)
No	22(6.6)
<i>When is KMC recommended</i>	
Do not know	76(24.4)
After the first month of life	212(67.9)
From the first day of life if child is stable	22(7.1)
After circumcision in boys	2(0.6)
<i>KMC helps in preventing cold in newborns while transporting to another hospital</i>	
Yes	47(15.1)
No	265(84.9)
<i>Who can give KMC</i>	
Mothers	269(86.2)
Fathers	2(0.6)
Healthcare providers	1(0.3)
Family members	40(12.8)
<i>Where can KMC be given</i>	
At home	163(52.2)
In the hospital	13(4.2)
Others	28(9.0)
Anywhere	108(43.6)

Fig 1: Attitudes of mothers towards KMC

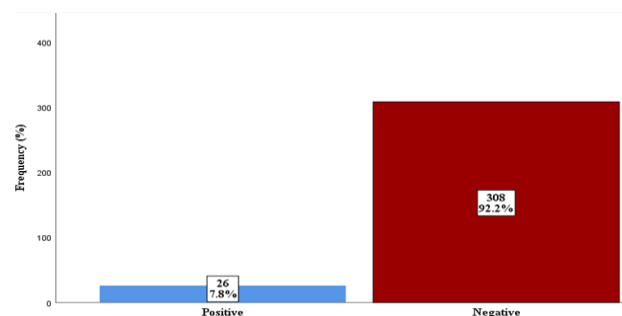


Table 3: Attitude of mothers towards KMC

	Agree	Disagree	Neutral
KMC is beneficial to mother and baby	90(28.8)	201(64.4)	21(6.7)
KMC increases bonding between mother and baby	64(20.5)	232(74.4)	16(5.1)
KMC enhances breastfeeding	50(16.0)	242(77.6)	20(6.4)
KMC should be initiated immediately after birth	29(9.3)	276(88.5)	7(2.2)
KMC enhances growth & development of baby	32(10.3)	258(82.7)	22(7.1)
KMC leads to reduction in infection rate	63(20.2)	228(73.1)	21(6.7)
KMC decreases hospital stay and reduces cost	33(10.6)	263(84.3)	16(5.1)
KMC should be given to all newborns irrespective of their weight	30(9.7)	267(86.1)	13(4.2)

Table 4: Practice of KMC amongst the mothers

Variable	Frequency, n (%) (n=334)
<i>Have you or someone in your family delivered a preterm before?</i>	
Yes	84(25.1)
No	250(74.5)
<i>Ever practiced KMC with your baby before?</i>	
Yes	49(14.7)
No	285(85.3)
<i>Will recommend KMC to another mother?</i>	
Yes	58(17.4)
No	240(71.9)
Don't know	36(10.8)
<i>Have ever recommended KMC to another mother?</i>	
Yes	24(7.2)
No	306(91.6)
Don't know	4(1.2)
<i>Willing to recommend and utilize KMC in future?</i>	
Yes	57(17.1)
No	224(67.1)
Don't know	53(15.9)
<i>Require more information on KMC and its benefit?</i>	
Yes	112(33.5)
No	222(66.5)
<i>Best way to increase knowledge</i>	
Simple and clear jingle and message in my language on this KMC	43(38.4)
Specific discussion with physician or health worker	67(59.8)
Discussion and guideline from professional bodies/ religious leader	2(1.8)

Table 5: Barriers to KMC among mothers

Variable	Frequency, n (%) (n=334)
Backing of babies is preferable	194(58.1)
Not in our culture	73(21.9)
Difficult to practice	40(12.0)
It is time consuming	33(9.9)
Lack of awareness for KMC	4(1.2)
Relatives not willing if mother not available	3(0.9)
Health providers not encouraging/ recommending KMC	2(0.6)
Not enough staff/ manpower to attempt it	1(0.3)
Preterm Babies perceived to be too small or sick for KMC	1(0.3)
Unavailability of mother	0(0)

Discussion

The present study assessed the knowledge, attitude, and practice of Kangaroo Mother Care among mothers in the community. The findings of this survey on KMC among mothers in Lagos present a critical and paradoxical challenge for neonatal health initiatives in Nigeria and similar resource-limited settings.

While the near-universal awareness of KMC (93.4%) is a positive indicator, perhaps reflecting successful high-level advocacy¹⁰, it starkly contrasts with the profound deficits in accurate knowledge, positive attitudes, and actual practice. This discordance underscores that mere awareness is an insufficient metric for public health success; it must be translated into comprehensive knowledge and positive behavioural change.²²

The core of the issue lies in the knowledge gap.

Although most mothers had heard of KMC, only 35.6% could correctly define it, and a staggering 82.7% were unaware of its benefits. This superficial awareness, primarily sourced from relatives and friends (53.2%) rather than formal healthcare channels, creates a vacuum easily filled by misinformation and cultural misconceptions. This is critically evident in the attitudes revealed: over 90% of mothers held a negative view, disagreeing with evidence-based benefits such as enhanced bonding, improved breastfeeding, and reduced mortality, which have been reinforced by recent large-scale trials.^{11,13} This profound skepticism directly informs practice, where only 14.7% had ever practiced KMC, and a majority were unwilling to recommend or use it in the future.

The identified barriers are highly instructive and point toward deeply entrenched socio-cultural factors. The predominant barrier, that “backing of babies is preferable” (58.1%) and that KMC is “not in our culture” (21.9%), is perhaps the most significant finding. It highlights a crucial oversight in many global health interventions: the failure to adequately contextualize and adapt a technique to local cultural norms. A recent systematic review confirmed that traditional baby-carrying practices are a major perceptual barrier, as KMC is often viewed as a strange and unnecessary deviation from the familiar and functional practice of backing.²³ This frames KMC not as a familiar, enhanced form of care but as a “foreign” imposition. Without culturally sensitive messaging that respectfully bridges this gap, KMC advocacy will likely continue to be met with resistance.²⁴

Furthermore, the socio-demographic profile of the participants, with a majority having no advanced education (64.1% with primary/secondary education only), cannot be overlooked. Health literacy is a known determinant of health-seeking behaviour.²⁵ The complexity of medical information regarding preterm care requires educational strategies tailored to all literacy levels. The respondents themselves indicated the best way to increase knowledge was through “simple and clear jingles and messages in my language” (59.8%) and “specific discussion with a physician or health worker” (38.4%). This aligns with the findings from a systematic review and meta-analysis, which demonstrated the superior effectiveness of person-to-person counselling and audiovisual aids in low-literacy communities compared to printed materials.²⁶

The role of the healthcare system is also brought into question. With 74.9% of mothers delivering their last

child in a hospital, these facilities represent a crucial but potentially underutilized touch point for KMC education and initiation. The fact that health providers were not seen as a primary source of information (only 0.3% identified healthcare providers as those who can give KMC) suggests a significant missed opportunity. It is possible that healthcare workers themselves are either not knowledgeable enough, too overburdened, or lack the institutional support to prioritize KMC counselling. A recent multi-country analysis identified “health workforce” and “service delivery” as critical health system bottlenecks for KMC implementation, citing lack of training, high workload, and low motivation as key constraints.^{15,27} Strengthening the capacity and motivation of frontline health workers to champion KMC is therefore indispensable.^{24,28,29}

Conclusion

This study reveals that the challenge of KMC adoption in Lagos is not one of awareness but of deep-seated cultural, educational, and systemic barriers. To move forward, a multifaceted strategy is essential. First, public health campaigns must be radically localized, co-designed with communities to reframe KMC as a complementary, skin-to-skin enhancement of traditional baby-carrying practices. Second, investment in training and supporting healthcare workers, as outlined in recent WHO implementation guides, is critical to transform them into effective KMC educators. Finally, educational materials must be developed in local languages and formats that resonate with the target population’s literacy level. Overcoming these barriers is imperative to harness the full potential of this life-saving intervention and to improve outcomes for vulnerable newborns in Nigeria.

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