Experiences of Parents on Kangaroo Mother Care in the Neonatal Clinic at Kenyatta National Hospital

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Abstract: Background: Kangaroo mother care (KMC) is a practice used to care for premature infants and low birth weight babies (LBW). It has been endorsed by the World health organization (WHO) as a cheap and reliable method of reducing neonatal mortality. It is widely practiced and has gained popularity in Kenya. Objective: Explore experiences of parents on Kangaroo mother care in the neonatal clinic at the Kenyatta National Hospital. Methods: A qualitative study involving Seventeen participants (n -17) recruited from parents who had practiced KMC. Sampling was purposive and those who met the eligibility criteria were recruited. Individual in- depth interviews were conducted using an interview guide. The interviews were audiotaped and transcribed verbatim. Common themes were identified iteratively. Results: Three major themes emerged from the analysis: Normalization of birth experience, need for commitment and enabling the practice. The participants reported that they were afraid and worried about their baby's survival before initiation into KMC. However during KMC, they became more confident as they participated in provision of care to their infants. They also reported reduction of stress and anxiety and enhanced family relations which gave them deep satisfaction as they got to know their infant. Participants associated reduction of infections, provision of warmth and faster growth to improved infant survival with KMC. Most participants felt that KMC required a lot of commitment to realize its benefits and at times, the practice causes interruptions in daily lives. The participants had mixed feelings regarding KMC practice due to limited information and the physical effects of the practice. Majority reported that they received enough support from their families and health team. Conclusions: KMC allows the parents to participate in the care, provides psychological healing, its tiring and time consuming and require a lot of commitment for its benefits to be realized. Recommendations: KMC should be practiced in all hospitals, Awareness and information about causes of prematurity/LBW and the option of practicing KMC should be encouraged in high risk group. Institutional recommendations included, provision of entertainment to mothers, review of meal time, one baby per incubator and deploy a doctor throughout in Kangaroo ward. Keywords: Kangaroo mother care, experiences, perceptions, feelings, skin to skin contact, and support.

1.0 Introduction
The experience of birth is unique for each parent who nurses a term baby. However, not all parents get to enjoy this. Each year approximately twenty million low birth weight babies are born worldwide because of either a premature birth or growth restriction [1]. Globally, prematurity is the
leading cause of death in children under the age of five years accounting for 60% to 80% of all deaths [2, 3]. This is despite the scientific, technological and therapeutic development of neonatal intensive care unit.

The birth of a premature baby is a crisis to the parents, which challenges their expectations of a healthy term baby and denies them time to adequately prepare psychologically for the birth [4]. The parents suffer physically, emotionally and behaviorally and this may affect their perception of the parenting process and may at times be traumatic [5]. The Parent’s inability to cuddle their infant and dependence on others for the care of their infant, make them feel redundant and helpless [6]. This may affect their parental role. The parents suffer depression from the unexpected conclusion of their pregnancy, anxiety from separation, reduced interaction with their infant and fear regarding its survival. These negative emotions can disrupt the maternal –infant attachment process [7, 3, and 4].

Kangaroo mother care is a concept developed to allow the parents to be part of the team caring for their infant as well as stimulate bonding process between the pair [8]. It is a cheap alternative to providing thermal care and improving survival rate of LBW infants and has been endorsed by the WHO as the best option in hospitals with inadequate resources [9]. Due to cultural roles and responsibilities, mostly it’s the mother who cares for the baby translating to added responsibility while fathers feel excluded from the care of their newborn. Parents who have gone through KMC have different experiences. A study in two NICUs (Neonatal intensive care unit) found that mothers who provided KMC were less anxious, less depressed, felt stronger and competent in their maternal role, their mood was positive mood and viewed their infant less abnormal [10]. In a phenomenological study among parents practicing KMC Roller [7] found that KMC facilitated bonding and enhanced maternal-infant acquaintance even in neonatal intensive care unit environments.

In other cases, the parents had mixed feelings toward Kangaroo mother care. Initially, the mothers were positive and yearned to be close to their infant by holding it [11]. In addition, through touching their infant they transferred courage, strength, hope and comfort which stimulated their awareness of baby’s signals and cues [12]. Hence, the practice gave them an opportunity to watch their baby grow as it had in utero, which probably give them satisfaction and fulfilment from the connection. However, they were also nervous and afraid of hurting the baby. These feelings can be a barrier to the practice among others for example, lack of privacy, high tech equipment, and inadequate support. While KMC is a humane, inexpensive, and straightforward approach, some mothers had negative experiences and they reported feeling lonely and isolated [13]. The isolation was related to being confined in bed for long periods, not getting help in KMC. In many cases, the fathers are not allowed to help until after discharge from the hospital. In a study by Lemmen [14] conducted in Sweden found that some mothers were afraid of dropping their infant and this fear made it difficult for them to sleep while [15] reported that mothers experienced boredom, backache, tiredness, and anxiety during the practice and felt their own needs like showering, eating and drinking were hindrance to the practice.

In Kenya, the KMC concept is gaining popularity, and many hospitals are implementing it. There is enough evidence that demonstrate the benefits of Kangaroo mother care in low birth weight infants [16]. At the Kenyatta National Hospital, KMC has been practiced since 2002, and thousands of mothers have gone through the system. However, most studies carried out in Kenya have been on the physiological benefits of KMC which include: infection reduction, improved temperature, heart and respiratory rate, oxygenation and energy expenditure [16]. Other studies focus on the effects of KMC regarding the growth of the baby, the length of the hospital stay of the mother and baby and the success of breastfeeding or on knowledge, attitude & practice of health care providers on Kangaroo mother care [17]. However, few studies have focused on the parental experience of preterm infants who underwent KMC in the world and Africa but the author found none in Kenyan context. In addition, no studies have sought the experiences of the fathers with KMC. The lack of documented
evidence about parent’s experiences following kangaroo mother care practice, prompted the study. The study findings will contribute to policy development and help health team to strategize management protocol on KMC practice.

2.0 Materials and Methods
2.1 study setting.
The study was conducted in the neonatal clinic at the Kenyatta National Teaching and Referral Hospital (KNH). This is where neonates from new born unit and those from Kangaroo ward are discharged through for follow-up. KNH is a public hospital, has a bed capacity of 1800 and provides specialized health care. It is the largest referral hospital in East and Central Africa, located on hospital road, off Ngong road.

2.2 Study design and sampling
A qualitative study, utilized general approach to explore experiences of parents on KMC in the neonatal clinic at the KNH. Study population involved all parents who were actively involved in providing KMC to their infants at Kenyatta National Hospital-NBU, who were identified using KMC registers. From this population the researcher recruited seventeen participants (n-17) for the study after reaching saturation of themes. Non probability purposive sampling method was used to select the participants because they had abundant information about their experience of Kangaroo mother care.

2.3 Inclusion and exclusion criteria
(1) Parents whose infants were born at a gestational age of between 24 to 36 weeks with a birth weight of less than 2000gms. (2) Parents who had practiced KMC in the new born unit or in the Kangaroo ward for more than one week prior to and within the duration of study. (3) A parent who had recent memory of the KMC experience and discontinued it two weeks before commencement of the study. (4) Parents whose infant were singleton and if multiple, practiced kangaroo on one baby at a time. (5) Fathers were included if they practiced kangaroo care at home since they are historically under-presented in research relating to their children. (6) Mothers or father who were able to speak Kiswahili or English. Parents whose babies were sick at the time of data collection and parents who declined to consent for the interview were excluded from the study.

2.4 Data collection, storage, Archival and quality assurance
Data were collected through observation and in-depth interviews using a semi-structured interview schedule by the researcher. The interview schedule were pretested in the general New born unit at the KNH using two participants. The interview guide was subjected to peer review and expert opinion was sought for accuracy and validity. Member check was also employed whereby the researcher allowed the respondents to read the transcription of their interviews to ensure that these had been accurately recorded. The results of this pre-test were not used for analysis of the main study. Interviews were conducted in one of the two main languages Kiswahili and English depending on the participant preference. Informed consent were obtained from the parent and thereafter the interview commenced. The interview took place in the neonatal clinic at the quiet observation room free from external interference after the baby were seen by the pediatrician. Each interview lasted about 45minutes and was audio-recorded using a tape recorder with the participant’s consent. The interviews were identified by the letter ‘P’ (Parent), followed by a number representing the chronological order in which interviews were conducted to ensure anonymity. The interviews were recorded, transcribed and translated for analysis. Later the participants were assigned pseudonyms that make their voice better heard. The researcher kept a field journal and documented all observations, narrative accounts of conversation, thoughts and questions for later use to ensure confirmability and trustworthiness. All collected data was sealed in envelopes and kept secure in locked file cabinet by the researcher. These will be stored for an additional five years after which they will destroyed.
2.5 Data analysis
Data analysis was done iteratively beginning at data collection until the end of the study. The recorded interviews were transcribed verbatim, analyzed the transcribed interviews, by reading and re-reading the scripts to seek meaning in the data. Each line of the narrative was read and the text was divided into sections. Each section was labelled with a code word or phrase that conveyed the meaning of the section. The codes with a common meaning were grouped into sub themes, which was combined to form themes. Some quotes from the transcripts were used to illustrate the themes and sub-themes. Computer –assisted qualitative data analysis software (NVivo) was used to manage data by sorting, organizing, storing, retrieving, locating words, phrases and segments of data.

2.6 Ethical consideration
Ethical approval was obtained from the Kenyatta National Hospital-University of Nairobi Ethical and Review Committee (KNH-UoN ERC) (approval number P151/02/2019). The researcher also obtained permission from Kenyatta National Hospital to conduct the study in the institution (Ref KNH/PEADS-HOD/48 Vol.II. Both verbal and written consent were obtained from participants after comprehensive explanation.

2.7 Trustworthiness
Credibility was achieved by audio recording all interviews, transcribing verbatim and each respondent listened to their own taped voice to confirm recording. Credibility was further ensured by the researcher collecting data personally to avoid distortions in the data from research assistant. Transferability was achieved through interpreting accurately the description of parent’s experiences while providing Kangaroo mother care.

Generalization may be difficult without more research but will add to the understanding, knowledge and description of kangaroo practice for parents of a premature baby. Dependability was achieved by use of many methods of data collection for example, detailed field notes, verbatim transcriptions and a record of analytical decision. Confirmability was ensured through the use of participants own words.

2.8 Limitation
By its nature qualitative study results are not generalizable. In addition, purposive sampling was used to provide understanding regarding experiences of parents during KMC practice and shed light on how to handle the parents during KMC sessions.

3.0 Results
The findings of this study revealed the experiences of parents who have implemented Kangaroo mother care to their premature or low birth weight infant. Three themes were developed: Normalization of birth experience, Need for commitment and enabling the practice as shown by table 1.

<table>
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3.1 Theme 1: Normalization of birth experience

Sub-theme 1: Bonding effects
Most of participants explained that Kangaroo care enabled them to get close to their infant because it reduced separation between the pair and promoted connectivity between the parent and the infant.

“I think I bonded well, when you put them on kangaroo, you bond, they feel you and you feel them”. (Margaret)

A father who had experience on Kangaroo care had the following to say

“Being brought up in an African society, we always feared our fathers because they never had time to bond with us. So, practicing Kangaroo care create a child to father bond. Because the mother will always be with the child most of the time”. (Joshua)

Subtheme 2: Participation in care
Many of the participants indicated that Kangaroo mother care enabled them to participate in the care of their infants.

“In an incubator, you just see the baby, there is nothing much, but during kangaroo, you remove and hold the baby”. (Maureen)

Other parents gained confidence to handle their premature infant which they feared before initiation of Kangaroo mother care practice.

“I gained confidence because I realized it is not hard, I can do it. I used to fear in the NBU, but stopped fearing in the Kangaroo ward” (Shirleen)

Subtheme 3: Psychological healing
Majority of the participants found Kangaroo to be stress relieving and also reduced their anxiety because they could hold their baby’s unlike when the babies were in the incubator.

“Kangaroo helps me relax, makes me forget many things. I forget about other stresses when I am relaxing with the baby and I enjoy”. (Caroline)

Many of the participants felt that Kangaroo mother care enabled them to experience deep satisfaction when caring for their infants.

“You know the moment the doctor allows you to kangaroo, that shows there is improvement, the baby is stable, that’s is good news. I used to smile during kangaroo, feel good, couldn’t belief I am carrying my baby.” (Maureen)

3.2 Theme 2: Need for commitment
All the participants pointed out that for one to reap the benefits of Kangaroo care commitment is required. This is because the practice is tiring and time consuming.

Subtheme 1: Improved survival
The participants pointed out some of the benefits they reap from practicing Kangaroo mother care such us: Reduction of cross infections, baby received warmth from the parent and growth of the baby in terms of weight gain.

“Practicing kangaroo was good because it had benefits like provision of warmth, baby gained weight and the risk of getting infections was reduced”. (Josephine)
**Subtheme 2: Interruptions of daily lives**
Most of the participants asserted that they lost their income as a result of their commitment to Kangaroo mother care.

“In the company where I work, when you report in the morning is up to evening, I realized my baby will suffer. I decided to temporally stop going to work until my baby breastfeed for 6 months”. *(Hannah)*

Some participants left the comfort of their homes and sought accommodation from relatives for the sake of their premature infants

“When I was discharged home, since we were told to limit visitors, I did not go home for a whole month, went to hide at my sister’s place”. *(Joan)*

Most of the respondents asserted that Kangaroo care was tiresome.

”You know there is no resting during kangaroo care, you feed after every 3 hours, and in between you came for kangaroo”. *(Abigail)*

”Kangaroo was tiring but I had to do it for the sake of the baby. Sitting throughout, in one position and facing up was tiresome”. *(Shirleen)*

**3.3 Theme 3: Enabling the practice**
In improving the quality of Kangaroo care: Information, Peer support and Conducive environment were identified as major factors in enabling the practice of kangaroo care.

**Subtheme 1: Information**
Information given to the parents before, during and discharge on kangaroo practice plays a major role in the acceptance and subsequent practice of kangaroo.

“I was informed that kangaroo makes the baby to grow, create a strong bond and increase milk production. My aim was the baby to grow because the weight was low”. *(Shirleen)*

“I was told to continue with breastfeeding and cup feeding. I continue with kangaroo, cleanliness, restrict visitors for the time being- until the baby receive BCG immunization. To start family planning, I was told if I mess, I will get another preterm baby”. *(Deborah)*

**Subtheme 2: Peer support**
The analysis determined that all the participants received support from nurses, doctors, other mothers, pastors, relatives and friends.

“... In addition, my husband used to come daily and I felt at least I was not alone in this, my mother, my mother in law they used to come”. *(Maureen)*

“I was helped by nurses, doctors and kangaroo nurse. They used to help us, answer our questions. It was good”. *(Caroline)*

**Subtheme 3: Conducive environment**
The participants felt that a conducive environment promoted the practice of KMC. Provision of clean space, bed & bed linen, chairs, stool, regulating the room temperatures and being there to answer their concerns enabled the participants to feel the urge to start and continue with Kangaroo practice.
“The NBU and kangaroo ward were ok although in the NBU, the babies were very many. There is a time, they we put 3 in an incubator and even the space was small. Kangaroo ward was good, you would find every mother had her own space, like her own bed, where she can do kangaroo”. (David)

“The beds were comfortable, although the temperatures were very high for me. We were told is high because of the baby’s. I had to stay because it’s the baby who took me there’. (Deborah)

Discussion
The results offers a wide spectrum of hardly noticeable differences of experiences on Kangaroo mother care practice by the parents who provide the practice to their premature infants which have not been documented before. The findings of this study are comparable with results from other studies. In this study majority of the participants explained that Kangaroo mother care enabled them to get closer to their infant, it reduced separation between the pair and there was a feeling of connectivity between the parent and the infant which enhanced their attachment. This could be due to parents being with their babies throughout. The findings are similar to those of a study in Sweden which showed that parents like to be near their infants regardless of the cause for separation [10]. Comparable to other qualitative studies on KMC experience which found positive effects on infant-parental bonding and attachment and transforms the crisis of having a premature infant into a more gratifying experience for the whole family [18].

Participants experienced that by providing KMC they were able to participate in the care of their infants whereby they gained confidence on how to handle their baby which initially they feared to touch. This was experienced as readiness to commence full responsibility of providing care to their infant in the hospital and following discharge. The findings are consistent with a study conducted in Sweden which showed that Kangaroo mother care facilitated attachment and ensured that the parents are actively involved in the care of the infant. Psychological satisfaction was reported in this study whereby the participants found Kangaroo to be stress relieving and also reduced their anxiety. This could be attributed to the infant showing signs of improvement or stability which enabled the parents to get permitted to practice Kangaroo care. This results have similarities with findings of Athanasopoulou & Fox [4] who found that KMC was a restoring experience.

Suddel [19] also reported that mothers who had provided KMC had more parental confidence, reduced anxiety and stress associated with caring for a premature infant while [20] found that KMC practice was beneficial because it allowed the mothers to interact with their newborn, giving them a feeling of physical-mental healthiness of neonate. The findings of this study showed some challenges parents experience while providing KMC which has not been documented previously. The participants reported practical and environmental hindrances such as fatigue during KMC, sleeping difficulties while the baby is in kangaroo position and high temperatures. These barriers were further complicated by inadequate knowledge of KMC and fathers inability to practice KMC in the hospital. It is important to provide information and enhance awareness on KMC both at planning and practice stage in hospitals. These findings are in line with those of Cattaneo [21] which showed that sleeping in kangaroo position was difficult, high temperatures, fear of hurting the infant, fatigue and concerns on how to express the breast milk, socially defined roles where the fathers were left out of KMC practice were mentioned as the perceived barriers to KMC. Help is very crucial during this anxious and emotional period. This study found that support is very important for KMC to be experienced positively. Majority of the participants felt that the support they received was enough from their spouses, nurses, doctors, relatives, friends and spiritual leaders while the minority had some complains.

The findings are similar to a study that showed external factors in the society such as friends, family and community are a major determinant of kangaroo mother care practice in becoming a parent if they are supported, they enjoy the practice and if not, the experience became an energy draining exercise [18]. A few participants in this research could not explain how infants adds weight when on
Kangaroo, concerns of the baby getting tired while in kangaroo position and the Mis –advising among the parents was reported, showing that the information given was not adequate. Therefore, conflicting emotions arise when nurse practice KMC as routine without deeper knowledge and skills [14].

**Conclusion**

This study has added scientific knowledge concerning parental experiences on practicing Kangaroo mother care to their infants. The findings of this study shows that parents who provide KMC can experience the practice as both energy draining and restorative. KMC enables the parents to take part or contribute to the care of their premature infant and strengthens the bond between the pair.

The benefits of KMC such as warmth provision, infection reduction and faster weight gain act as a motivation for parents. However, KMC is tiring and time consuming and require a lot of commitment for its benefits to be realized. Perceived hindrances to KMC practice were fatigue, sleeping difficulties and high temperatures. The support and information given to parents of premature baby's is very essential to transit smoothly to parenthood.

**Recommendations**

KMC should be practiced in all hospitals whether public, private or faith based. Awareness and information about causes of prematurity/LBW and the option of practicing KMC should be encouraged in high risk groups of parents to improve the level of commitment. To ensure the information given to parents during KMC is adequate, the health team should be competent and confident when providing important information concerning the benefits and challenges of effective kangaroo care.

There is need for the hospital to provide entertainment such as cool background music to distract the parents from feeling tired and reduce boredom in the Kangaroo ward. Institutions of higher learning should conduct a comparative study on the experiences of parents practicing continuous KMC and those practicing Intermittent KMC.

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