



Newborn care practices in rural Bangladesh: Implications for the adaptation of kangaroo mother care for community-based interventions



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ABSTRACT

Bangladesh has one of the world's highest rates of low birth weight along with prevalent traditional care practices that leave newborns highly vulnerable to hypothermia, infection, and early death. We conducted formative research to explore existing newborn care practices in rural Bangladesh with an emphasis on thermal protection, and to identify potential facilitators, barriers, and recommendations for the community level delivery of kangaroo mother care (CKMC). Forty in-depth interviews and 14 focus group discussions were conducted between September and December 2012. Participants included pregnant women and mothers, husbands, maternal and paternal grandmothers, traditional birth attendants, village doctors, traditional healers, pharmacy men, religious leaders, community leaders, and formal healthcare providers. Audio recordings were transcribed and translated into English, and the textual data were analyzed using the Framework Approach. We find that harmful newborn care practices, such as delayed wrapping and early initiation of bathing, are changing as more biomedical advice from formal healthcare providers is reaching the community through word-of-mouth and television campaigns. While the goal of CKMC was relatively easily understood and accepted by many of the participants, logistical and to a lesser extent ideological barriers exist that may keep the practice from being adopted easily. Women feel a sense of inevitable responsibility for household duties despite the desire to provide the best care for their new babies. Our findings showed that participants appreciated CKMC as an appropriate treatment method for ill babies, but were less accepting of it as a protective method of caring for seemingly healthy newborns during the first few days of life. Participants highlighted the necessity of receiving help from family members and witnessing other women performing CKMC with positive outcomes if they are to adopt the behavior themselves. Focusing intervention messages on building a supportive environment for CKMC practice will be critical for the intervention's success.

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1. Introduction

Neonatal mortality is growing in global public health importance as an increasing proportion of under-five deaths occur during the first four weeks of life (Oestergaard et al., 2011). In Bangladesh, 60% of under-five deaths occur during the neonatal period, making it a necessity to specifically address neonatal mortality if the country is to continue to improve child survival rates (National Institute of Population Research and Training, Mitra and Associates, & ICF International, 2013). While the top three global causes of neonatal deaths are cited as prematurity, intrapartum-related complications, and infections including sepsis, meningitis, and pneumonia (Liu et al., 2012), low birth weight (LBW) contributes to an estimated 60–80% of all neonatal deaths (UNICEF and WHO, 2004). LBW neonates (<2.5 kg), both preterm and full term, are more likely than normal weight neonates to suffer from hypothermia and infections (Lunze and Hamer, 2012; Lunze et al., 2013; Mullany et al., 2010a,b).

In Bangladesh, some studies have estimated that over 30% of infants have low birth weight (Arifeen et al., 2012), making it a country with one of the highest LBW rates in the world. The fact that 71% of deliveries in Bangladesh occur at home (77% in rural areas) (National Institute of Population Research and Training, Mitra and Associates, & ICF International, 2013), coupled with the common practices in some regions of delayed wrapping of babies after birth and early immersive bathing, results in a large number of LBW neonates left vulnerable to hypothermia in Bangladesh (Winch et al., 2005).

Neonatal hypothermia, defined as a body temperature at or below 36.0 °C (World Health Organization, 1997), increases mortality risk and can occur regardless of setting (Lunze et al., 2013). A systematic review examining neonatal hypothermia in resource-poor settings globally showed high prevalence of hypothermia in infants born in hospitals (32%–85%) as well as in homes (11%–92%) (Lunze et al., 2013). One of the included trials, conducted in Nepal, found one-fifth of neonates to be hypothermic even during the hot season (Mullany et al., 2010a,b). Lunze and Hamer (2012) argue that while addressing neonatal hypothermia globally could substantially impact neonatal mortality, so far it has been largely neglected. It is estimated that universal coverage of measures preventing neonatal hypothermia, and quick identification and treatment when it occurs, could eliminate up to 40% of neonatal deaths (Darmstadt et al., 2008). Ensuring thermal protection for newborns during the first week of life is particularly important, as up to 75% of newborn deaths occur during this period (Baqui et al., 2006; Lawn et al., 2005).

The World Health Organization endorses kangaroo mother care (KMC) for medically stabilized low birth weight or preterm infants in health facilities in order to prevent hypothermia, especially in settings where incubators or warmers are unavailable (World Health Organization, 2003). The three components of facility-based KMC are: 1) continuous skin-to-skin contact of the neonate between the mother's bare breasts; 2) early and frequent breastfeeding; and 3) early discharge from the facility with follow-up (Charpak et al., 2005; World Health Organization, 2003). In addition to thermal regulation, KMC encourages newborn-mother bonding, reduces the occurrence of infections in the neonate, supports infant growth, and facilitates exclusive breastfeeding (Conde-Agudelo et al., 2011; World Health Organization, 2003). Continuation of KMC is recommended until the newborn's gestational age reaches term or weight reaches 2500 g (World Health Organization, 2003). Systematic reviews of facility-based KMC studies report that in low- and middle-income countries, the practice of facility-based continuous KMC is associated with a significant reduction in the risk of mortality at the time of discharge or 40–41 weeks postmenstrual age when compared to controls

receiving traditional care in infant incubators and warmers (Conde-Agudelo et al., 2011).

The evidence of the effectiveness of KMC in reducing neonatal mortality is thus far limited to facility-based interventions. The only trial of community-based KMC (CKMC) encountered difficulties in ensuring compliance with continuous CKMC and had methodological concerns, thereby making it difficult to draw conclusions about its efficacy (Sloan et al., 2008). However, community-based strategies are necessary to reach newborns in settings with low utilization of facility-based care, such as rural Bangladesh. KMC is a promising intervention to adapt for community-based delivery because it is a low-technology practice under the control of families. As with facility-based KMC, mothers providing CKMC are encouraged to clean newborns with a dry or damp cloth and avoid immersive bathing, sleep with the baby in the kangaroo position while in a semi-reclined position, provide continuous skin-to-skin contact, breastfeed on demand, and seek immediate medical care for babies' danger signs (Quasem et al., 2003; World Health Organization, 2003).

In regard to the recommended length of CKMC provision, Ahmed et al. (2011) recommend ≥ 7 h of skin-to-skin contact a day, particularly in the first two days of life, as "an important marker of adequate training, dose and impact" (p.366). Globally, two-thirds of neonatal deaths occur within the first week of life, with the first day being the riskiest (Lawn et al., 2005). Quasem et al. (2003) therefore suggest that "prolonged maintenance of skin-to-skin contact may not be essential to significantly reduce neonatal and infant mortality" (p. 650). However promising, rigorous assessment of the effectiveness of KMC in reducing neonatal mortality when practiced in communities is still urgently needed.

1.1. Changing newborn care practices and the role of formative research

Newborn care practices are "rooted in cultural value systems embedded in social norms" (Kumar et al., 2008, p. 455), therefore intervention strategies for behavior change must take into account social, cultural, and economic reasons for current practices (Winch et al., 2005). Furthermore, the locus of control for newborn care practices is not with one single actor; rather the household as a unit must be targeted along with other influencers (Kumar et al., 2008). Formative research helps researchers and program planners understand the factors that can facilitate or inhibit the adoption of new health behaviors and adapt an intervention to address these factors (Gittelsohn et al., 2006). The Neonatal Mortality Formative Research Working Group (2008) has documented how formative research can be particularly useful in exploring the multifactorial influences on newborn care practices, thus informing community-based intervention strategies for improving newborn survival. Peer-reviewed publication of the results of formative research in intervention trials is also important for interpreting the consequent trials' results.

Changing newborn care practices is challenging and requires incorporating insights gained through formative research with sound behavior change theories (Kumar et al., 2008). While community-based kangaroo mother care is technologically simple, it requires an extended active commitment on the part of the mother and her family, and is divergent from existing social norms in Bangladesh and many other settings. Indeed, some previous efforts to encourage skin-to-skin care in various communities globally have achieved limited success (Sloan et al., 2008; Vesel et al., 2013).

1.2. Conceptual framework

Acknowledging that newborn care practices are products of one's social and cultural milieu and influenced by multiple actors,

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