

KANGAROO MOTHER CARE IN MALAWI: IMPROVING UPTAKE USING A CUSTOMIZED WRAP

Situation

Malawi has the highest rate of preterm births worldwide, with 18% of live births occurring before 37 completed weeks of pregnancy.¹ One-third of all newborn deaths results from direct complications of prematurity in Malawi.² The Government of Malawi has prioritized Kangaroo Mother Care (KMC) as part of their effort to increase access to quality health services for mothers and children.³

Despite Malawi's success as an early adopter of KMC, uptake has been slow.⁴ Women have identified that using the traditional wrapper – chitenje – to keep the baby skin-to-skin is difficult. In an effort to improve KMC, Lærdal Global Health (LGH) developed the CarePlus wrap, an ergonomic baby carrier with the potential to be produced locally at low cost.

In partnership with the Ministry of Health, Save the Children implemented a study to determine whether the customized CarePlus wrap improves KMC practice and whether its uptake is feasible across Malawi.



KEY MESSAGES

Background

Kangaroo Mother Care (KMC) is a priority intervention for Malawi, but uptake has been slow. In 2016, implementation research was conducted to assess the acceptability and effectiveness of introducing a customized KMC wrap to improve skin-to-skin practices.

Main findings

- **Women accept KMC:** Women reported high levels of acceptability of KMC regardless of the wrap used.
- **Longer KMC practice results in more weight gain:** Babies held in skin-to-skin for 20 hours or more per day gain more weight regardless of the type of wrap used.
- **Women preferred a customized wrap:** Women using the customized wrap were more satisfied with KMC and practiced skin-to-skin for more hours every day.
- **Care for preterm babies requires quality improvement and mentorship:** Implementation of KMC with a customized wrap needs to be part of a comprehensive package.
- **Follow up care requires more attention:** Only half of mothers returned to the health facility for follow-up within 7-15 days of discharge and critical gaps in counselling on skin-to-skin and feeding practices were noted.
- **Undertake additional research:** Conduct further investigation to better understand the observed gaps in documentation of KMC services and low levels of facility follow-up and home visits by community health workers.

Photo: Lærdal Global Health

Study Objective

The study aimed to evaluate the acceptability and effectiveness of introducing a custom KMC wrap to improve adherence to skin-to-skin practices within selected hospitals with established KMC programs in Malawi. This study tested the hypothesis that a customized CarePlus wrap would increase the duration of skin-to-skin contact among mother-baby dyads practicing KMC at the facility and post-discharge, leading to improved breast-feeding and weight gain. Alongside the study, Save the Children explored the feasibility of locally producing the customized CarePlus wrapper by training and equipping existing hospital-based tailors. To limit costs and enhance sustainability, mothers would take the wrap home and be asked to return the wraps at scheduled KMC follow-up visits so that the wraps could be recycled and used by other mothers.

Methodology

This operations research study was conducted in three large hospitals in the southern region of Malawi: Machinga district hospital, Thyolo district hospital, and Queen Elizabeth Central Hospital (Blantyre district). Mother-baby dyads meeting eligibility criteria and providing informed consent were randomized to receive either the CarePlus wrap or a traditional chitenje printed with KMC messages. Outcomes included adherence to skin-to-skin practices in the facility and the community and acceptability of the wrap as well as average rate of weight gain. Enrolled mother-baby dyads were assessed while in the facility KMC ward, at discharge from facility, and 7-10 days post-discharge from facility through a home visit.

Data were collected from May-December 2016 by trained Ministry of Health staff based at the three facilities. Data collectors were trained for four days by the study principal investigator and Save the Children staff. Data were captured using tablets programmed with CS-PRO. Babies were weighed by study staff at KMC admission, facility discharge and 7-10 day after discharge. Mothers were interviewed about their skin-to-skin practice, breastfeeding, perceptions of wrap, and family/community support at 2-3 days after admission to KMC, at discharge and 7-10 days post-discharge. Average rate of weight gain was measured in g/day for two time periods: 1) from the time of KMC admission to the time of facility discharge and 2) from time of facility discharge to 7-10 days follow-up visit. T-tests were used to assess statistical significance of differences between study arms and study facilities. All analyses were carried out in Stata® 12 [StataCorp LP, Texas, USA]. Ethical approval for the study was received in May 2016 from the College of Medicine Research and Ethics Committee (COMREC) national bioethics committee.

Findings

A total of 301 mother-baby dyads were enrolled in the study, with 152 receiving the customized wrap and 149 receiving the traditional chitenje. **Regardless of the wrap, the vast majority of women, reported being satisfied with their baby's progress on KMC (94%) and would recommend KMC to others (99%).** Reported adherence to KMC practices and recorded weight gain while in facility KMC varied significantly by study site regardless of study arm indicating other factors influenced the outcomes beyond the wrap used. Study results by outcome are presented in Table 1.

Figure 1. Acceptability of wrap while in facility-based KMC by type of wrapper received

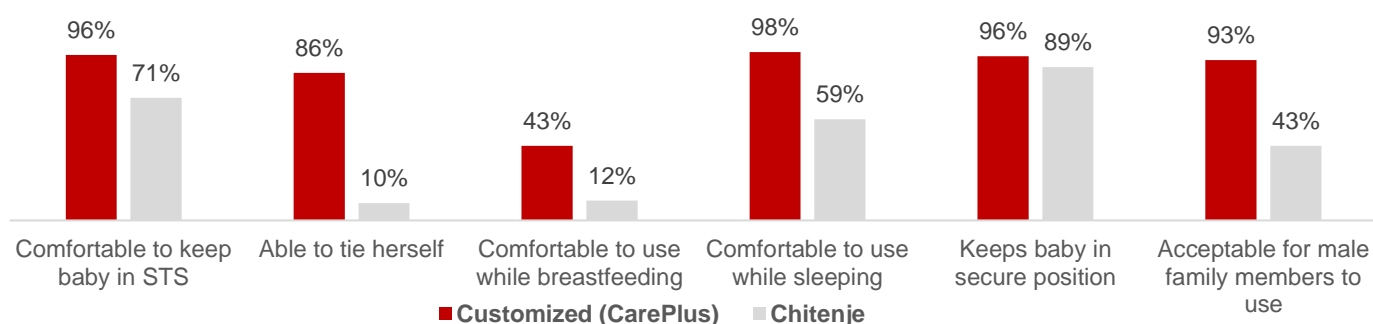


Table 1: Findings by study outcome

Study Outcome	Study Findings
Acceptability of the wrap (Figure 1) 	<p>Women expressed a strong preference for a customized wrap.</p> <ul style="list-style-type: none"> • >95% of women receiving a customized wrap would recommend it to other mothers • 90% expressed preference for the customized wrap over the new chitenje
Feeding support 	<p>Nearly all babies were able to breastfeed. The majority of babies (88%) required use of cup and spoon to support feeding at the time of discharge with no differences between study arms in reported use of cup and spoon or type of feeding.</p>
Duration of skin-to-skin practice 	<p>Reported daily duration of skin-to-skin practice while in facility was significantly higher among women using the customized wrap:</p> <ul style="list-style-type: none"> • 44% of mothers using a customized wrap reported 20 or more hours per day compared to 33% of mothers using the traditional chitenje. • While women still expressed satisfaction with and strong preference for the customized wrap after discharge from the facility, there was no significant difference in reported daily STS duration post-discharge.
Family and Social Support 	<p>Approximately two-thirds of women had another family member (usually mother or sister) involved in the KMC training and nearly all reported some form of family support while in facility KMC for providing food and looking after other children.</p> <ul style="list-style-type: none"> • >85% of women also reported receiving support from family after discharge • >One-third of women reported receiving support from community members including friends and women's groups.
Follow-up after discharge from facility 	<p>Levels of follow-up visits post-discharge were low, with only half of women returning to the health facility by the time of the post-discharge visit; significant variation by study site was noted (range 25% to 76%). Among those returning for follow-up,</p> <ul style="list-style-type: none"> • 48% reported receiving advice on caring for their baby or were asked about STS and feeding practices (43%), highlighting critical missed opportunities. • 5% reported receiving a home visit from a community health worker (CHW).
Local production, willingness to recycle and pay for the customized wrap 	<p>Training tailors proved that it is possible to produce the wrappers locally with availability of the right materials procured by facility management teams.</p> <ul style="list-style-type: none"> • Nearly two-thirds of women in the customized wrap group indicated willingness to return the wrapper and 70% expressed willingness to use a recycled wrap. • Similarly, approximately 64% of women reported that they would pay a deposit for the wrap or buy one (63%) for about \$2 (the estimated cost of local production).
Weight gain among babies enrolled in KMC 	<p>The average rate of weight gain was significantly higher among babies whose mothers reported practicing 20 or more hours of skin-to-skin contact per day compared to those who practiced less (10.4g/day compared to -1.3g/day). The difference in rate of weight gain between study arms was not statistically significant. Aggregating weight gains and losses across our study population was difficult to interpret given data discrepancies.</p>



Conclusion

This study provides evidence that a customized KMC wrap is highly acceptable to mothers and contributes to improved skin-to-skin practices while in facility KMC.

Recommendations

- **Consider the use of a customized wrapper, such as the CarePlus design:** The Malawi Ministry of Health should consider incorporating a customized KMC wrap into the operational guidance and planning for KMC implementation as an evidence-based method to improve maternal satisfaction around KMC and to increase adherence to recommended skin-to-skin practices.
- **Incorporate a customized wrapper into district health system planning:** Include a customized wrap in the procurement catalogue and district expenditure plans for sustained availability. Work with MOH to develop and test approaches for locally producing and financing a customized wrapper.
- **Invest in Quality Improvement:** District hospitals must invest in ongoing mentorship and quality improvement initiatives with attention paid to promotion of appropriate feeding, skin-to-skin practice and providing adequate resources and facilities to encourage such practices.
- **Strengthen follow up visits after discharge:** Explore options to address low levels of facility follow-up and home visits by community health workers. Babies discharged from facility-KMC remain highly vulnerable and need regular follow-up and support to reach their growth and developmental potential.
- **Identify and invest in community-based approaches:** Identify community-based approaches to increase support for mothers and their families to practice KMC in the community.
- **Undertake additional research:** Conduct further investigation to better understand the observed gaps in documentation of KMC services and low levels of facility follow-up and home visits by community health workers.

FOR MORE INFORMATION

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The full report can be accessed at www.healthynewbornnetwork.org/resource/KMC-wrapper-study

REFERENCES

1. Blencowe H, Cousens S, Oestergaard M, Chou D, Moller AB, Narwal R, Adler A, Garcia CV, Rohde S, Say L, Lawn JE. National, regional and worldwide estimates of preterm birth rates in the year 2010 with time trends since 1990 for selected countries: a systematic analysis and implications. *The Lancet* 2012, 379(9832): 2162-72.
2. NSO Malawi, ICF International. 2015-16 Malawi Demographic and Health Survey. Zomba: National Statistical Office. Available at: www.dhsprogram.com/publications/publication-FR319-DHS-Final-Reports.cfm
3. Government of Malawi. 2015. Every Newborn Action Plan: An action plan to end preventable neonatal deaths in Malawi. 2015. Available at: www.who.int/pmnch/media/events/2015/malawi_enap.pdf?ua=1
4. Bergh A-M, Banda L, Lipato T, Ngwira G, Luhanga R, Ligowe R. Evaluation of kangaroo mother care services in Malawi. MCHIP, 2012

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