



BRIEF COMMUNICATION

## Using the *kanga* to measure postpartum blood loss

N. Prata<sup>a,\*</sup>, G. Mbaruku<sup>b</sup>, M. Campbell<sup>c,1</sup>

<sup>a</sup>School of Public Health, University of California, Berkeley, 1213 Tolman Hall, Berkeley, CA 94720-1690, USA

<sup>b</sup>Maweni Hospital, Kigoma, Tanzania

<sup>c</sup>School of Public Health, University of California, Berkeley, 310 Warren Hall, Berkeley, CA 94720-7360, USA

Received 20 October 2004; accepted 10 January 2005

### KEYWORDS

Postpartum blood loss;  
*Kanga*;  
Maternal health

Postpartum hemorrhage (PPH) represents a quarter of all pregnancy-related mortality worldwide [1] and an even higher percentage in sub-Saharan Africa [2]. The following observation was made during focus group discussions with traditional birth attendants (TBAs) in Kigoma, Tanzania, as part of a study using misoprostol to treat PPH. Such study is yielding encouraging results, but even without misoprostol, the ability to measure blood loss and to seek medical

care at the correct moment can decrease PPH-associated morbidity and mortality [3].

Clinical observation of blood loss tends to underestimate the actual loss by 34–50% [4]. The standard of 500 ml is the internationally accepted threshold for clinically dangerous PPH [5] and more accurate measurement would permit women to be referred at the correct moment, significantly decreasing PPH morbidity and mortality [6].

Produced locally and sold pre-cut, a *kanga* is a rectangular, standard-size (100 cm × 155 cm) cotton-only fabric used by African women for various purposes: as a skirt (a *sarong* in Asia), a shawl, a head wrap, and to carry a baby on its mother's back. Women use old *kangas* as a postpartum blood collection towel. TBAs said they used three to four blood-soaked *kangas* as a threshold measure after which they refer the woman to a health facility. Thirty-five measurement verifications were run to establish that two *kangas* soaked with blood represented slightly more than 500 ml. This finding was important in illustrating the level of blood loss awareness by TBAs and it was used as the stimulus for giving misoprostol for treatment.

\* Corresponding author. Tel.: +1 510 643 4284; fax: +1 510 642 7969.

E-mail addresses: ndola@berkeley.edu (N. Prata), mbarukug@yahoo.com (G. Mbaruku), mcbell@berkeley.edu (M. Campbell).

<sup>1</sup> Tel.: +1 510 524 4320; fax: +1 510 524 4418.

To our knowledge, this is the first time that a traditional blood collection tool used by women has been described. Using the *kanga* as an important measurement tool allows immediate diagnosis and response to PPH at the household level. The TBAs in our study were pleased to learn to adjust the blood loss threshold because it meant an increased chance of surviving from PPH for the women under their care.

The fact that all *kangas* are the same size and that they are used consistently in Tanzania provides an important educational opportunity. In the absence of any other medical complaints, TBAs and parturient women should be counseled to take action after two *kangas* are soaked with postpartum blood. Wherever *kanga*-type garments are used, those interested in maternal health should verify if the fabric marketed is of a consistent size, and measure how many garments will absorb 500 ml of liquid.

## References

- [1] Goodburn E, Campbell O. Reducing maternal mortality in the developing world: sector-wide approaches may be the key. *Br Med J* 2001;322(7291):917-20.
- [2] AbouZahr C. Antepartum and postpartum hemorrhage. In: Murray C, Lopez A, editors. Health dimensions of sex and reproduction. USA: Harvard School of Public Health on behalf of the World Health Organization and the World Bank; 1998.
- [3] Thadeus S, Maine D. Too far to walk: maternal mortality in context. *Soc Sci Med* 1994;38:1091-110.
- [4] Prendiville W, Elbourne D. Care during the third stage of labor. In: Chalmers I, Murray E, Marc J, editors. Effective care in pregnancy and childbirth. Oxford: Oxford Medical Publications; 1989.
- [5] Cunningham F, Gant N, Leveno K, Gilstrap L, Hauth J, Wenstrom K. Williams obstetrics. 21st edition. New York: McGraw-Hill Medical Publishing Division; 2001.
- [6] Boes E. Maternal mortality in southern Africa 1980–1982: Part II. Causes of maternal death. *S Afr Med J* 1987;71:160-1.