

**ORIGINAL ARTICLE****TRADITIONAL NEWBORN CARE IN JIMMA TOWN, SOUTHWEST ETHIOPIA****Tsinuel Girma, MD, Hailu Nida, MD****ABSTRACT**

**BACKGROUND:** Neonatal deaths in general, early neonatal deaths in particular now represent two- third of infant deaths and one-third of under-five deaths worldwide. Therefore, improving newborn survival is a major priority in child health today. Negotiation of improved neonatal health care practice into the community requires differentiation of benign from harmful indigenous practices. The objective of the study was to assess traditional care given to newborns in Jimma Town.

**METHODS:** A community based cross-sectional survey was conducted from February 8-22, 2004 in Jimma Town among 700 mothers of infant age 6 months or less. Descriptive statistics and inferences were done using SPSS for Windows version 11.0 and statistical significance was taken when  $p < 0.05$ .

**RESULT:** Out of 700 sampled, 650 subjects were reached giving a response rate of 93%. However, the data of 40 subjects were not complete and so analysis was done on the 610 mothers with complete data. Five hundred twenty two (85.6 %) had antenatal care attendance for the last pregnancy and 436 (71.5%) of the index children were delivered in health institutions. Bedding-in (babies slept with mothers) was done for 591 (96.9%) neonates, prelacteal feeds was given to 77 (12.6%) neonates and 305 (50.0%) were initiated on breast-feeding after 12 hours of the delivery. On-demand and frequent (> 8/day) breast-feeding was reported by 569 (93.2%) of the mothers and breastfeeding problems by 44 (8.9%) of the mothers, Three hundred fifty six (58.4%) of the babies were bathed within 24 hours of delivery, butter was applied to the umbilical stump in 32 (48.7%) of the home delivered babies and only 17/85 (2.8%) "small" babies received additional care.

**CONCLUSION:** High rate of ANC attendance and institutional delivery were observed. Practice of exclusive and on-demand breast-feeding was high and very few neonates received prelacteal feeds. Most babies slept with their mothers Home delivered babies were exposed to harmful practices and small babies did not receive special care. harmful practices were Mothers should be educated during ANC follow up and after delivery on the need for special care to low birth weight/smaller babies.

**KEYWORDS:** Traditional care, Neonate, Southwest Ethiopia

**INTRODUCTION**

Improving newborn survival is a major priority in child health today. Over the last two decades infant and child mortality rates are dropping Worldwide through reduction of post neonatal deaths related largely to diarrhea, pneumonia, vaccine preventable diseases, and malaria. As a result, neonatal deaths in general, early neonatal deaths in particular now represent 60% of all infant deaths and 30% of under-five deaths, a larger proportion of overall total mortality rates (1). Community based studies identified infection (52%), asphyxia (20%) and prematurity (15%) as important causes of mortality among newborns. A substantial proportion of these deaths is associated with low birth weight babies (2).

Studies have established the advantage of simple and cost-effective measures to reduce mortality in newborns. Regrettably, in developing countries, where 98% of deaths take place, almost all deliveries and associated neonatal deaths occur at home (3). Then obviously the major challenge is to avail proven-intervention to the families near to their villages or equip parents with the appropriate skill and knowledge.

Negotiation of improved neonatal health care practice into the community requires "dialogue of knowledge" between indigenous and modern medical perspectives. Beneficial or benign practices should be encouraged while helping the mothers replace the harmful with improved ones. It is imperative to assess the traditional care delivered in different communities and base intervention accordingly.

To the knowledge of the authors, only few community level studies have evaluated traditional neonatal care in Ethiopia. The cultural diversity among the different communities gives rise to many types of good or harmful attitudes and practices. The intention of this study was to narrow this scientific knowledge gap. Assessing the prevalent community practices helps in formulating future interventions cognizant of the reality on the ground.

## SUBJECT AND METHODS

Jimma town is located 355 km South-West of Addis Ababa and one of the big cities in Oromia. During the study period (February 8-22; 2004) Jimma Town was divided into 3 Keftegnas and 20 Kebeles. All the Kebeles were included in the study. The infant and under-5 mortality rate of the region were 116.2 and 193 per 1000 live births, respectively (4).

A cross-sectional community based study design was used. The sample size calculation used for simple random sampling technique was employed assuming prevalence of institutional delivery 50% (with detectable difference of 10%), test power of 90% and significance level of 0.05. Non-responder rate of 20% and design effect of two were also considered.

Proportional-to-size allocation was used to distribute the calculated sample of 700 subjects among the 20 Kebeles. The direction of the data collection and selection of the first house in each Kebele was done by looking the point of a pen dropped unsystematically to the ground. Mothers, with infant of 6 months or less age during the study period, were enrolled in the study after giving verbal consent. Once the data collector identified the first household and the direction decided, subsequent households with the specified mother-infant pair were included until the desired number from each kebele was obtained. The six-month limit was set with the intention of mitigating recall bias by the mother. As the main interest of the study was to assess what and how neonates are being cared at household level, study participants were interviewed about their experience in caring their baby during the first one month of his or her life. Twelve 12<sup>th</sup> grade completed interviewers collected the data from mothers of the index child using a pre-tested questionnaire. The data collectors were given half-day training on data formats and technique, as almost all of

them had ample experience on data collection. . In this study, exclusive breast-feeding was defined as baby getting only breast milk in the previous 24 hour before the interview. We generated descriptive statistics using SPSS for Windows Version 11.0. Association between different variables was assessed by Chi-square test ( $p < 0.05$ ).

## RESULTS

Though 650 out of 700 sampled subjects were interviewed, analysis was done on 610 mothers with complete information. Most of the interviewed mothers were married 522(85.7 %), housewives 427(72.6%), and between 20 and 30 years of age 450(73.8%). One hundred seventy three (28.4%) of the respondents were primiparas. Four hundred ninety-four (80.9%) mothers had attended at least primary level of education (Table 1).

A male to female ratio of the index children was 1:1 and 131 (21.5%) of them were within the age of 1 month. Five hundred twenty two (85.6 %) mothers had antenatal care attendance during the last pregnancy and 436 (71.5%) of the index children were delivered in health institutions. Out of 174 mothers who gave birth at home, 52 (29.9%) did so because of personal preference, and the rest for other reasons like distance and financial problems. Maternal marital status, educational level, occupation and the family monthly income were important determinants of antenatal care attendance ( $p < 0.05$ ). Educational background and occupation of the mother and family monthly income were socio-economic characteristics associated with institutional delivery ( $p < 0.05$ ). Nearly all pregnancies 600 (98.4%) were carried to term according to the response obtained (Table 2 and 3)

**Table 1.** Characteristics of study participants Southwest Ethiopia, 2004.

Characteristics	Place of delivery			P value
	Institutional No (%)	Home No (%)	Total No (%)	
<i>Age (year)</i>				
< 20	74(71.8)	29(28.2)	103(100.0)	>0.05
20-25	203(71.7)	80(28.3)	283(100.0)	
26- 30	115(69.7)	50(30.3)	165(100.0)	
31-35	34(73.9)	12(26.1)	46(100.0)	
>35	8(80.0)	2(20.0)	10(100.0)	
Total	434(71.5)	173(28.5)	607(100)	
<i>Marital status</i>				>0.05
Married	375(72.1)	145(27.9)	520(100.0)	
Single	38(70.4)	16(29.6)	54(100.0)	
Divorced	17(63.0)	10(37.0)	27(100.0)	
Widowed	4(66.7)	2(33.3)	6(100.0)	
Total	434(71.5)	173(28.5)	607(100)	
<i>Educational background</i>				<0.05
Illiterate	33(50)	33(50)	66(100.0)	
Read and write only	21(75)	7(25)	28(100.0)	
Elementary	89(61.0)	57(39.0)	146(100.0)	
Junior secondary	93(66.0)	48(34.0)	141(100.0)	
Secondary	178(86.8)	27(13.2)	205(100.0)	
Higher education	20(95.2)	1(4.8)	21(100.0)	
Total	434(71.5)	173(28.5)	607(100)	
<i>Occupation</i>				<0.05
House wife	294(69.0)	131(31.0)	426(100.0)	
Government employee	40(97.6)	1(2.4)	41(100.0)	
merchant	37(84.1)	7(15.9)	44(100.0)	
Daily laborer	21(63.6)	12(36.4)	33(100.0)	
Student	26(63.4)	15(36.6)	41(100.0)	
Others*	14(66.7)	8(33.3)	21(100.0)	
Total	432	174	606(100.0)	
<i>Monthly in come</i>				<0.05
below 100 birr	35(53.0)	31(47.0)	66(100.0)	
101-200	113(58.5)	80(41.5)	193(100.0)	
201-500	175(76.8)	53(23.2)	228(100.0)	
500-1000	85(95.5)	4(4.5)	89(100.0)	
over 1000 birr	24(96.0)	1(4.0)	25(100.0)	
Total	432	169	601(100.0)	
<i>Religion</i>				<0.05
Orthodox	208(77.6)	60(32.4)	268(100.0)	
Muslim	106(53.3)	93(46.7)	199(100.0)	
Protestant	61(75.3)	20(24.7)	81(100.0)	
Catholic	4(1.1)	2(1.1)	6(100.0)	
Total	379	174	553	

**Table 2.** Socio-demographic characteristics of mothers and antenatal care follow-up Southwest Ethiopia, 2004.

Characteristics	Antenatal care follow-up			P value
	Yes	No	Total	
Age (year)	No (%)	No (%)	No (%)	
< 20	90(87.4)	13(12.6)	103(100)	
20-25	246(86.0)	39(14.0)	286(100)	
26- 30	138(83.6)	27(16.4)	165(100)	>0.05
31-35	30(81.1)	7(18.9)	37(100)	
>35	8(80.0)	2(20)	10(100)	
Total	522(85.6)	87(14.3)	610(100)	
<i>Marital status</i>				
Married	463(88.7)	59(11.3)	522(100)	
Single	38(70.4)	16(29.6)	54(100)	<0.05
Divorced	16(59.3)	11(40.7)	27(100)	
Widowed	4(66.7)	2(33.3)	6(100)	
Total	522(85.6)	88(14.4)	610(100)	
<i>Educational background</i>				
Illiterate	42(63.6)	24(36.4)	66(100)	
Read and write only	25(89.3)	3(10.7)	28(100)	
Elementary	117(80.1)	29(19.9)	146(100)	<0.05
Junior secondary	124(87.9)	17(12.1)	141(100)	
Secondary	193(93.2)	14(6.8)	207(100)	
Higher education	21(95.5)	1(4.4)	22(100)	
Total	522(85.6)	88(14.4)	610(100)	
<i>Occupation</i>				
House wife	368(86.2)	59(13.8)	427(100)	<0.05
Government employee	40(97.6)	1(2.4)	41(100)	
merchant	44(95.7)	2(4.3)	46(100)	
Daily laborer	23(69.7)	10(30.3)	33(100)	
Student	33(80.5)	8(19.5)	41(100)	
Others	14(63.6)	8 (36.3)	22(100)	
Total	522(85.6)	88(14.4)	610(100)	
<i>Monthly in come</i>				
below 100 birr	46(69.7)	20(30.3)	66(100)	
101-200	155(81.2)	36(18.8)	191(100)	<0.05
201-500	203(89.0)	25(11.0)	228(100)	
500-1000	88(96.7)	3(3.3)	91(100)	
over 1000 birr	24(96.0)	1(4.0)	25(100)	
Total	522(85.6)	88(14.4)	610(100)	
<i>Religion</i>				
Orthodox	237(88.1)	32(11.9)	269(100)	
Muslim	207(81.8)	46(18.2)	253(100)	>0.05
Protestant	72(87.8)	10(12.2)	82(100)	
Catholic	6(1.1)	0	6(100)	
Total	522(85.6)	88(14.4)	610(100)	

Traditional birth attendants (TBA) assisted 129 (74.1%) of home deliveries while relatives and neighbors attended the rest. Only 25 (19.4%) of TBAs used gloves when attending the deliveries whereas all respondents noted that the birth attendants cleaned their hands with water and soap prior to assisting the delivery. Most attendants used razor blade to cut and thread to tie the umbilical cord. They used soap and water to clean materials that were not new. Butter was applied to the umbilical stump

in 32 (48.7%) of the home delivered babies assuming that it prevents pain and/or dryness. Three hundred fifty six (58.4%) of the babies were bathed within 24 hours of delivery and in most cases 448(73.4%) twice a day. All respondents reported that they cover their babies with clothes to keep them warm, but about 270(44.1%) left the head uncovered. Five hundred ninety two (97.0%) babies were bedded-in (slept in the same bed with their mothers).

**Table 3.** Socio-demographic characteristics of mothers and place of delivery Southwest Ethiopia, 2004.

Age (n=610)	No (%)
< 20	103(16.9)
20-25	285(46.7)
26- 30	165(27.0)
31-35	46(7.5)
>35	10(1.6)
Marital status (n=609)	
Married	522(85.7)
Single	54(8.8)
Divorced	27(4.4)
Widowed	6(1.0)
	609(100.0)
Educational background (n=610)	
Illiterate	66(10.8)
Read and write only	28(4.5)
Elementary	146(23.9)
Junior secondary	141(23.1)
Secondary	207(33.9)
Higher education	22(3.6)
Occupation (n=588)	
House wife	427(72.6)
Government employee	41(6.9)
Merchant	46(7.8)
Daily laborer	33(5.6)
Student	41(6.9)
Monthly income( birr) (n=601)	
< 100	66(11.0)
101-200	191(31.8)
201-500	228(37.9)
500-1000	91(15.1)
> 1000	25(4.2)
Religion (n=610)	
Orthodox	269(44.2)
Muslim	253(41.5)
Protestant	82(13.5)
Catholic	6(0.9)

- Maid, jobless, no permanent job

Out of the 436 facility deliveries, it was possible to get their birth weight as reported by the mother or from vaccination card for 385(88.3%) of the infants. Thirty-six (8.3%) of them were low birth weights (<2500gm). All respondents were asked to categorize the size of their babies at birth either as “very small”, “small”, “normal”, “big” or “very big”. Accordingly, 85(13.9%) of mothers said their babies were either “small” or “very small” at birth. Thirty one (86.1%) of those babies who were less than 2500gm at birth were labeled as “small” by their mothers. However, only 17/85 (2.8%) of these babies

received additional care due to their small size. These measures were covering the body and putting on more clothes to keep the baby warm and early introduction of additional “food” (cow’s milk in most cases).

Prelacteal feeds such as sugar- water solution or butter were given to 77 (12.6%) of the index children. Only one-half (305) of the infants in this study received breast milk within one hour of delivery. Feeding was on-demand and more than 8 times a day for 569 (93.3%) infants. Three hundred sixty six (60.0%) infants were being exclusively breast-fed (exclusive breast-feeding

defined as baby getting only breast milk in the previous 24 hour before the interview). Complementary diet was started before three months of age in 190 (31.1 %) of

infants. Fifty-four (8.9%) of the mothers encountered one or more of the following breast problems: sore nipple, engorgement or “not-enough” milk (Table 4).

**Table 4.** Breast feeding problems encountered by mothers .Southwest Ethiopia, 2004

Problem	No.	(%)
Sore nipple	16	29.6
Engorgement	31	57.4
“Not-enough” milk	7	13.0
Total	54	100.0

Seventy-five (12.5%) of the mothers reported that their babies were sick in the first four weeks after delivery. Fever 26(33.3%), cough 14(17.9%) and diarrhea 7(8.9%) were most commonly reported symptoms. Place of delivery, sex of the neonate and antenatal care attendance were not associated with neonatal illnesses ( $P > 0.05$ ) (Table 5). Mothers made the decision in 53(67.9%) of

the case as to where to take the baby for treatment. Medical treatment was sought for 58 (73.4%) of the sick neonates. The rest of the newborns received treatment at home or taken to traditional health practitioner. Lack of money or having opinion that the illness is minor was the two most common reasons given not to seek medical treatment.

**Table 5.** Sickness of the index child during neonate period by sex of the child, place of delivery and ANC attendance of the mother, Southwest Ethiopia ,2004

	<i>Sick in the first month of age</i>			P value
	Yes No (%)	No No (%)	Total No (%)	
<i>Sex of the infant</i>				
Male	36(12.5)	251(87.5)	287(47.8)	>0.05
Female	39(12.4)	276(87.6)	315(52.2)	
Total			602(100.0)	
<i>ANC follow up</i>				
Yes	64(12.4)	451(87.6)	515(85.5)	>0.05
No	11(12.6)	76(87.4)	87(14.5)	
Total			602(100)	
<i>Place of delivery</i>				
Institutional	50(11.7)	379(88.3)	429(71.5)	>0.05
Home	25(14.6)	146(85.4)	171(28.5)	
Total			600(100)	

## DISCUSSION

The study showed that being married, literate and employed were significantly associated with higher ANC attendance and health facility delivery. Access to health facility due to location and good intra-urban transport may have contributed to this high rate of institutional delivery since all the health (private and public) units in the study area are located in Jimma town. Health facility delivery was much higher than the national level (6%) reported by Ethiopian Demographic and Health Survey (5). Nevertheless, the same source and other studies indicated that children born in urban areas are 20 times more likely to be delivered in a health facility than

children born in rural areas are. Moreover, majority of the mothers had at least primary level of education which may contribute to health seeking behavior as also reported by studies from Northern Nigeria and Nepal which showed low health facility delivery among women with low income, illiterate and living a distance of more than one hour from maternity services (6, 7).

All traditional birth attendants in this study used soap and water for hand washing when attending deliveries. A large-scale study conducted in Jimma showed association between use of soap for hand washing when attending delivery and neonatal mortality (8). However, in this study very few birth attendants were reported to use medical gloves. This obviously exposes majorities of

TBAs at high risk of blood born disease like HIV/AIDS and hepatitis B.

World Health Organization (WHO) recommends that bathing of the newborn be postponed for at least 6 hours if not 2 to 3 days after delivery (9). With regard to this, two-third of the infants in this survey were bathed within 24 hour of delivery. In Uganda, Anna et al found that bathing of newborns in the first hour after delivery resulted in a significantly increased prevalence of hypothermia, defined as temperature  $<36.5^{\circ}\text{C}$ , at 70 and at 90 min postpartum despite the use of warm water and the application of the skin-to-skin method (10).

In this study, most mothers covered the whole body of their baby and shared beds with them (bedding-in). These practices help maintain neonate's temperature, encourage breast-feeding and bonding. Moreover, mothers do not have to sit up or transport the baby from crib for care and feeding, which gives the pair more rest and relaxation (11).

Most of the low birth weight babies in this study were labeled as "small", by their mothers showing mothers' good skill on estimating size at birth and can be used as proxy for birth weight whenever reliable source of birth weight is absent. Delivering simple home based care such as skin-to-skin contact and frequent breast-feeding have proven effective in reducing morbidity and mortality of low birth/small babies (12). However, very few mothers in this study provided additional care for their babies even though they thought baby's size was "small". In addition, for most of these babies cow's milk was added to breast milk to enhance weight gain.

Practically all infants were started on breast-feeding which reaffirms the fact that breast-feeding is universal in Ethiopia. The observed rate of prelacteal feeds was low compared to national urban and Oromia region (5). It is also in contrast to a report from Uganda (13). The high rate of ANC and institutional delivery may explain the low rate of prelacteal feeds in this study (5). However, breast-feeding was delayed to more than one hour after delivery in half of the babies. This is a very low rate especially considering high ANC attendance and that most of the deliveries were in health facilities.

From this observation, we may infer that mothers may not get proper breast-feeding advice during follow up for pregnancy and after delivery. On- demand breast-feeding for more than 8 times a day was remarkably high. Most mothers were housewives which helps them to spend more time with their babies. Few mothers encountered breast-feeding problems like sore nipple, engorgement or "not-enough" milk. This can be because two-third of the mothers were multiparous and may have good experience from their pervious deliveries. Moreover, extended family structure facilitates experience sharing among relatives and neighbors.

The prevalence of illness during the first four weeks after delivery was low. Unlike reports from other studies, place of delivery, sex of the neonate and antenatal care attendance were not associated with neonatal illnesses (8). Most families preferred modern treatment to home or traditional health practitioner.

Where they opted for the later, understandably it was due to financial constraints and undermining the symptoms. In Nairobi slums, health care seeking was most common for sick children in the youngest age group (0-11 months). Lack of finances and a perception that the illness was not serious were the main reasons given for failure to seek health care outside the home(14).

In conclusion, the observed positive health behaviors such as ANC follow up, on-demand frequent breast-feeding, keeping babies warm and health seeking for sick babies should be reinforced using every opportunity and contact with the mothers such as vaccination and postnatal follow ups. As this study showed delayed initiation of breast feeding and high prevalence of early baby bathing, health education on importance of early initiation and exclusive breast-feeding needs to be given particularly during ANC follow up and/or after delivery. Health facilities in Jimma town have to adapt the recommendation by WHO to delay the first baby bath for at least 24-48 births after birth. In addition, health professionals should advise mothers on the special care for "small" neonates.

We recommend further in-depth study to investigate existing traditional neonatal care including the other players of newborn care in extended family structure.

#### ACKNOWLEDGMENTS

The authors would like to thank all the study participants. Jimma university research and publication office deserves our appreciation for the study grant.

#### REFERENCES

1. Save the Children. State of the World's Newborn. Save the Children: Washington DC, 2001.
2. Bang AT, Bang AR, Baitule SB, Deshmukh MD, Reddy HM. Burden of morbidities and the unmet need for health care in rural neonates : a prospective observational study in Gadchiroli, India. *Indian Pediat* 2001; 38: p. 952- 65.
3. Bang AT, Bang AR, Reddy MH. Home-Based Neonatal Care: Summary and Applications of the Field Trial in Rural Gadchiroli, India (1993 to 2003). *Journal of Perinatology* 2005;25: S108-S122.
4. Ethiopia, FMOH. Health and Health Related Indicators. 2006/2007.
5. Agency, C.S., Demographic and Health Survey 2005. September 2006: Addis Ababa, Ethiopia.
6. Idris SH, Gwarzo UM, Shehu AU. Determinants of Place of Delivery among Women in a Semi-Urban Settlement in Zaria. *Annals of African Medicine* 2006; 5(2): 68-72
7. Rajendra RW, Svend S, Birgitte BN. Socioeconomic and physical distance to the maternity hospital as predictors for place of delivery: an observation study. *Pregnancy and Childbirth*, 2004; 4(8): 68-72.
8. Mekonen A, Drewett R, Fasil T. A birth cohort study in south- west Ethiopia to identify

- factors associated with infant mortality that are amenable for intervention. *Ethiopia J. Health Dev*, 2000; 14(2): 161-168.
9. WHO (World Health Organization), Thermal Protection in the newborn: a guide. WHO, Geneva, 1997.
  10. [Bergström A](#), [Byaruhanga R](#), [Okong P](#). The impact of newborn bathing on the prevalence of neonatal hypothermia in Uganda: A randomized, controlled trial. *Acta paediatr* 2005;94 (10): 1462-1467.
  11. Ball HL. Bed sharing on the postnatal ward: Breast feeding and infant sleep safety. *Paediatr Child Health*, 2006;Suppl A: 43A- 46 A.
  12. WHO (World Health Organization) Kangaroo mother care: practical guide. WHO, Geneva, 2003.
  13. Engebretsen IMS, Wamani H, Karamagi C, Semiyaga N, Tumwine J, Tylleskär T. Low adherence to exclusive breastfeeding in Eastern Uganda: A community-based cross-sectional study comparing dietary recall since birth with 24-hour recall. *Pediatrics*, 2007;7:10-22.
  14. Taffa N, Chepngeno G. Determinants of health care seeking for childhood illnesses in Nairobi slums. *Trop Med Int Health*, 2005;10(3): 240-5.