

## Cord Care Practices of South-Western Nigerian Mothers

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**Abstract:** In a study designed to determine the various methods used by mothers in caring for the umbilical cord stump of their newborn, 193 babies were studied. Consecutive 193 babies with their mothers attending were seen at the immunization and welfare and clinics of the State Hospital Osogbo, between January 1st and March 31st, 2006. Information concerning the ages, sexes and place of birth, treatments applied to the umbilical cord stump of the babies and the educational status of the mothers were obtained and recorded in a proforma. The neonates were also examined for complications of poor cord care. The age range of the 193 babies was between 1 and 28 days and they consisted of 103 boys and 90 girls, giving a male to female ratio of 1.1:1. Optimal cord care practices were not utilized by all the mothers studied. Cord care practices was fair among 160 (82.9%) and poor in 33 (17.1%). Multiple agents were used to treat the cord in most babies with poor care. Among the 33 with poor cord care, fomentation with hot water, lantern, knife and application of menthol containing creams were used in, 23 (40.4%), 20 (35.1%), 1 (1.8%) and 13 (22.8%) cases, respectively. The reason for the fair and poor cord care by the mothers was ignorance concerning better methods. The differences between the major 18 (52.9%) of the 34 mothers delivered at non-tertiary health facilities with unsatisfactory cord care compared with the corresponding 16 (10.1%) of the 159 mothers delivered at the tertiary centers are statistically significant  $\chi^2 = 32.59$ ,  $p = 0.00$ , Yate's correction applied. It is concluded, that the care of the cord among mothers in the present study is sub-standard. Emphasis should be laid on educating pregnant women and the mothers of the newborn concerning optimal cord care. Practical optimum cord care demonstrations should also be given to all the newly delivered mothers, by health care providers.

**Key words:** Umbilical, cord stump, care, neonates, mothers

### INTRODUCTION

Correct care of the umbilical cord of the newborn is an important determinant of immediate health and survival of the new born (Garner *et al.*, 1994). It is therefore, important that the attending personnel at delivery and subsequent care givers take proper care of the cord. Proper cord care includes hygienic handling at delivery, cutting and securing the open end of the cord in order to prevent hemorrhage (Garner *et al.*, 1994). Regular hand washing before touching or cleaning the umbilical cord has been shown to be associated with a decreased prevalence of neonatal fever and septicemia (Garner *et al.*, 1994; Shafique *et al.*, 2006). Further care after the immediate post delivery period entails keeping the cord clean and dry.

It takes a range of 3-45 days before the remnant of the umbilical cord falls off. An average of 13 days has been reported by a previous study (Novack *et al.*, 1988). Thus, most of the cord care is home based, since the majority of

mothers with their babies with uncomplicated deliveries are discharged home between 48 and 72 h post delivery. Most times, the mother is responsible for taking care of the cord till it drops off. It is therefore desirable to know the cord care practices of mothers. This knowledge will assist in improving the current practices by way of discouraging bad practices and encouraging good ones. Also, there may be a need to teach new practices.

### MATERIALS AND METHODS

The study was carried out at the State Hospital, Osogbo, between 1st of January and March 31st, 2006. Consecutive neonates and their mothers brought to the immunization clinics for immunization were studied. Informed consent was obtained prior to obtaining information from the studied mothers by the use of a questionnaire. Details of the name, age sex, place of birth were obtained. The mothers were questioned on the care of the umbilical cord and the specifics of all forms of

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treatment meted to the cord were recorded in a proforma. The neonates were thereafter examined with special emphasis on the umbilical stump and the peri-umbilical skin.

The cord care by the mother was judged as optimal if it was dry cleaned till the umbilical cord stump fell off (WHO, 2007; Shafique *et al.*, 2006; Chamnanvanakij *et al.*, 2005). The care provided by the mothers was judged fair when treated methylated spirit, or topical anti-microbial agents at least twice a day, till the umbilical cord stump dropped off (Shafique *et al.*, 2006; Chamnanvanakij *et al.*, 2005; Memon, 2006). Other forms of treatment to the umbilical cord stump aside from this were judged improper. The results were expressed as descriptive statistics.

The State Hospital, Osogbo, is a government owned, tertiary hospital, located in the state capital of Osun-State. The hospital is well patronized because it provides free health services to the inhabitants of Osogbo and the neighboring environs. In addition the state ministry of health ensures the regular supply of childhood vaccines to the immunization clinic at no cost to the public.

## RESULTS

**Study population:** A total 193 babies were studied and their ages ranged between 1 and 28 days. These 193 babies consisted of 103 boys and 90 girls, giving a male to female ratio of 1.1:1. Most 134 (69.4%) of the babies studied were aged between 0-7 days, while the remaining 59 (30.6%) were aged between 8-28 days. The age distribution of the babies studied is shown in Table 1.

**Cord care practices of mothers:** None of the 193 babies studied had cord care by drying agents. The care given by the mothers to the cord of 160 (82.9%) was considered fair, while that of 33 (17.1%) was poor. The poor treatment consisted of hot water fomentation in, 23 (40.4%) babies, hot lanterns in 20 (35.1%) and hot knife fomentation in 1 (1.8%). Menthol containing substance was applied in 13 (22.8%). The agents used to clean or treat the cord are shown in Table 2.

**Sex distribution of babies with oor cord care:** The 160 babies with fair cord care were made up of 85 boys and 75 girls, thus giving a male to female ratio of 1.1:1. Among the 33 babies with poor cord care 18 (54.5%) were boys and 15 (45.5%) girls, this gives a male to female ratio 1.2:1.

**Place of delivery:** The greater majority 155 (80.3%) of the babies seen were delivered at the State hospital, while the remaining 38 (19.7%) were classified as out born. The 38

Table 1: Age distribution of babies studied

Age group in days	Total number of babies in the age category
0-7	134
>7-14	34
>14-21	13
>21-28	12
Total	193

Table 2: Pattern of cord care treatment of babies studied

Materials used for cord treatment	No. of neonates	Percentage
S	160	82.9
S+F+L	8	4.1
S+F	5	2.6
S+F+L+M	4	2.1
S+L+M	4	2.1
S+M	3	1.6
F	3	1.6
F+L	2	1.0
S+M+K	1	0.5
S+L	1	0.5
S+F+M	1	0.5
L	1	0.5
Total	193	100.0

Key: Spirit S, Hot knife; K, Hot water fomentation; F, Hot lantern application; L, Menthol containing substances M

out born babies were delivered at maternities, traditional birth centers, homes, churches, the teaching hospital, private hospital, comprehensive health center and a taxi proceeding to the state hospital in 12 (31.6%), 9 (23.7%), 5 (13.2%), 4 (10.5%), 3 (7.9%), 3 (7.9%), 1 (2.6%) and 1 (2.6%) cases, respectively.

**Relationship between place of delivery and cord care practice of mother:** Of the 159 mothers who delivered at the teaching and state hospitals 143 (89.9%) practiced fair cord care, while 16 (47.1%) of the 34 mothers delivered at traditional birth centers, private hospitals and maternity homes practiced poor cord care. None of the mothers practiced optimal cord care. The relationship between the place of delivery and the cord care practices is shown in Table 3. The use of harmful cord practices was more common among the mothers delivered outside tertiary hospitals. The greater proportion of 18 (52.9%) of the 34 mothers delivered at traditional birth centers, private hospitals and maternity homes engaged the use of harmful practices in the management of the cord of their neonates compared with the corresponding 16 (10.1%) of the total 159 mothers delivered at the teaching and state hospital engaged in similar practices. These differences are statistically significant  $\chi^2 = 32.59$ ,  $p = 0.00$ , Yate's correction applied.

**Educational status of the mothers:** The educational statuses of the mothers studied were classified into 3 groups. Illiterate mother and mothers with below primary 6 training were placed in group I, Group II was made up of mothers with completed or incomplete secondary school

Table 3: Cord care practice at the delivery centre

Place of delivery	No. with optimal cord care	No. (%) with fair cord care	No. (%) with bad cord care	Total No. in the category
State hospital	0	139(89.7)	16(10.3)	155
Maternity	0	6(50.0)	6(50.0)	12
TBA	0	4(44.4)	5(55.6)	9
Home	0	3(60.0)	2(40.0)	5
Teaching hospital	0	4(100.0)	0	4
Church	0	2(66.7)	1(33.3)	3
Private hospital	0	1(33.3)	2(66.7)	3
CHC	0	0	1(100.0)	1
Transit	0	1(100.0)	0	1
Total	0	160	33	193

training, technical school training and equivalents. Mothers in group III were those with post secondary school training. The numbers of mothers found in group I, II and III were 85 (44.0%), 47 (24.4%) and 61 (31.6%), respectively. Of the 85 mothers of the babies in group I, 72 (84.7%) had fair cord care and the remaining 13 (15.3%), demonstrated poor cord care. Forty seven of the mothers in group II, 36 (76.6%) practiced fair cord care and the 11 (23.4%) practiced poor care, while 54 (88.5%) of the total 61 mothers in group III demonstrated fair cord care and the remaining 9 (14.3%) demonstrated poor cord care. Optimal cord care was not found among mothers in the three educational groupings.

## DISCUSSION

The present study shows that non-optimal cord care practices is the prevalent practice among mothers in Osogbo community. Also, fair cord care was observed in the majority of mothers studied. Poor cord care is not an uncommon practice in Nigerian mothers, as evidenced by the 17.1% prevalence figure obtained in the present study. A previous study conducted at Sri Lanka has shown that most mothers are ignorant of good cord care practices (Senarath *et al.*, 2007). However, the educational status of the mothers studied produced a partial positive impact on the mode of managing the cord in the present study. Most of the mothers in the present study applied methylated spirit alone for cord care on a regular basis. The use of methylated spirit for cord care may probably be the teaching by the health workers in the Osogbo community delivery facilities. This may explain the trend of cord care used by the majority of the mothers studied.

Results obtained from recent studies show that dry cleaning the umbilical cord stump has been found to be associated with a faster cord separation and a reduced bacterial colonization of the stump compared to other treatments (WHO, 2007; Shafique *et al.*, 2006; Chamnanvanakij *et al.*, 2005). This is probably responsible for recent trend of dry cleaning the umbilical cord in contrast to cleaning regularly with methylated spirit. The use of methylated spirit in the newborn has been

associated with a longer interval for cord separation and increased bacterial colonization or infection of cord compared with dry cleaning (Chamnanvanakij *et al.*, 2005; Shoaib *et al.*, 2005). Other agents such as polymixin bacitracin ointment, bacitracin-neomycin powder or triple dye have the disadvantage of delaying cord separation compared to treatment with alcohol or dry cleaning. The use of salicylic sugar powder has also been found effective in cord care in neonate delivered at nurseries in developed countries (Pezzati *et al.*, 2002). Potential drawbacks in the use of salicylic sugar in developing countries include its cost and availability. Also, the association of salicylic sugar with cord bleeding may be a fatal complication among neonates managed at home. Dry cleaning the cord is, however effective, due to its accessibility, safety and affordability it should be the preferred method of cord care in developing countries (Chamnanvanakij *et al.*, 2005).

Other harmful therapies in the management of these babies by their mothers include, fomentation with hot water, hot knife or hot lantern and application of menthol containing substances. The use of these agents was more common among mothers of babies delivered by the traditional birth attendants, maternities and private hospitals. Complications associated with the application of these agents in previous studies include the development of tetanus, omphalitis, fever, septicemia and burns (Garner *et al.*, 1994; Stanfield and Galazka, 1984; Mullany *et al.*, 2007; Lo Lacono, 2002). It is, however, a pleasant surprise that none of the neonates studied developed any medical complication. This latter observation may be due to the cross sectional design of the present study, thus making it possible to miss these complications if they develop after the time of study.

## CONCLUSION

It is concluded that the use of non optimal modalities in the management of the umbilical cord is the prevalent practice in this study. The use of fair and poor harmful practices should be discouraged through public enlightenment programs, using the mass media

organizations. Pregnant women and newly delivered mothers should be taught optimal cord care practices at the antenatal clinic, while the newly delivered mothers should be given practical sessions using optimal methods to care for the cord before discharge from the health facilities. The positive impact of training of health workers on proper maternal cord care has been demonstrated in a previous study (Senarath *et al.*, 2007). Thus, the midwives and attendants at health facilities also need to be educated and thought optimal cord care practices.

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