

# NEWBORN CORD CARE PRACTICES AMONGST MOTHERS IN PORT HARCOURT, NIGERIA

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## ABSTRACT

### **Background:**

*Cord care is an important community based intervention to reduce morbidity and mortality in newborns. Poor cord care practices promote neonatal infections which account for a large proportion of the annual global neonatal deaths most of which are in Sub-Saharan Africa. This study explored cord care practices amongst mothers in Port Harcourt.*

**Methods:** *This was a cross-sectional study carried out amongst mothers presenting with children 0-6months old to the Paediatric Outpatient and Infant Welfare Clinics of the University of Port Harcourt Teaching Hospital. Data were collected using a simple structured questionnaire. Information obtained included biodata, age and sex of last baby, social class, place of antenatal care and delivery, and cord care practices. Data were analysed using SPSS version 16.0*

**Results:** *Two hundred and ten mothers participated in the study. 71.9% were of high social class. Over 80% received antenatal care in recognized Government hospitals, while 24 (11.5%) had traditional birth attendant (TBA)/home deliveries. Mothers' level of education was significantly associated with place of antenatal care and place of delivery ( $p= 0.000$ ). 36.2% of mothers did not know what was used to cut baby's cord. 200 (95.3%) used methylated spirit to clean the cord but 69 (32.4%) applied potentially dangerous substances after cleaning with methylated spirit. 2.9% of mothers reported cord problems.*

**Conclusion:** *Although most mothers had antenatal care in Government hospitals, there was a high rate of use of potentially dangerous substances for cord care. There is need for continued education of mothers on correct cord care practices.*

**Key Words:** Newborn, Cord Care, Practices

### **Introduction:**

The umbilical cord is the lifeline of the fetus and newborn in the first few minutes after birth. It is also a potential route of infection in the neonatal period. A substantial proportion of neonatal deaths occur from infections (neonatal tetanus inclusive) of the umbilical cord.<sup>1,2</sup> Cord care practices may directly contribute to infections in the newborn which accounts for the 26 % of global under five deaths.<sup>3</sup> The prevalence of cord infection in newborns ranges from 3-5.5% in most developing countries.<sup>4,5</sup> In developed countries, it is as low as 0.5%.<sup>6</sup> Cord care starts shortly after birth and practices vary in different communities and culture. Good cord care practice is an important community based intervention to save newborn lives.

The current World Health Organization (WHO) recommendation for care of the new born cord is to

apply nothing after cutting except in certain circumstances.<sup>7</sup> The use of sterile cotton wool soaked in either Methylated spirit or water at body temperature or gentian violet (1%) on the cord is still being practiced widely.<sup>8,9</sup> However, use of traditional cord dressings which are harmful have been reported especially in the rural areas in developing countries. These include cow dung, herbal preparation, ash, mud etc which are usually contaminated and serve as sources of infection.<sup>10</sup> Unhygienic cord care practices are prevalent in developing countries especially in the rural areas.<sup>10,11</sup> This study is therefore to determine the cord care practices amongst mothers in an urban area (Port Harcourt) and to determine the need for proper education.

### **Methods:**

This was a cross-sectional study carried out amongst mothers presenting with children 0-

6months old to the Paediatric Outpatient and Infant Welfare Clinics of the University of Port Harcourt Teaching Hospital, Rivers State, Nigeria. The University of Port Harcourt Teaching Hospital (UPTH) is the largest Tertiary hospital in the State and serves both as a general hospital and a referral centre for patients resident in Port Harcourt and other health facilities in and around the State. The Paediatric Outpatient and Infant Welfare Clinics of the hospital are run daily from 8am to 4pm except at weekends. The outpatient clinics are the entry point for all sick children presenting to the hospital except those who are emergencies, who are seen in the children's emergency wards. The infant welfare clinics are for routine immunization, growth monitoring and nutritional counseling. Mothers who presented with children 0-6months to the Infant Welfare Clinics for routine immunisation or to the Outpatient Clinics with various illnesses were randomly recruited for the study. Only mothers who gave consent for the study were interviewed by the researchers. Data were collected using a simple structured questionnaire. Information obtained included biodata, age and sex of last baby, educational status and occupation of parents, place of antenatal care and delivery, and cord care practices for index child. The socioeconomic status of the families were determined using the method by Olusanya et al<sup>11</sup>

### Results:

Two hundred and ten mothers participated in the study. 110 (52.4%) mothers were in the age range 20-30 years. Male: female ratio of the babies was 1:1.06; they were aged 0-6months. 151 (71.9%) mothers were of high social class. Two hundred and four (97%) of the mothers received antenatal care in recognized Government health care centres. Only 6 (2.9%) women had no antenatal care, or patronized TBAs in the antenatal period but 24 (11.5%) delivered at home/TBAs (Table 1). Table 1: Place of antenatal care and place of delivery

**Table 1:** Place of antenatal care and place of delivery

Place of antenatal care	Number	Percent
None	4	1.9
Primary health care center	18	8.6
Secondary level health care center	46	21.9
Tertiary level health care center	140	66.7
Traditional birth attendants	2	1.0
<b>Total</b>	<b>210</b>	<b>100</b>
Place of delivery		
Primary health care center	6	2.8
Secondary level health care center	67	31.9
Tertiary level health care center	113	53.8
Traditional birth attendants/Home	24	11.5
<b>Total</b>	<b>210</b>	<b>100</b>

Mothers level of education was significantly associated with place of antenatal care and place of delivery ( $\chi^2 = 6.65$ , p-value = 0.000). Seventy six (36.2%) of mothers did not know what was used to cut baby's cord, but in 48 (22.9%) and 62 (29.5%), surgical blade and scissors were used respectively. In 20 (9.6%) of cases, razor blades (old and new) were used to cut the cord (Table 2).

**Table 2:** Instruments used to cut the cord

Instruments	Number	Percent (%)
Scissors	48	22.9
New razor blade	18	8.6
Old razor blade	2	1.0
Surgical blade	62	29.5
Don't know	76	36.2
Others	4	1.9
<b>Total</b>	<b>210</b>	<b>100</b>

Two hundred (95.3%) used methylated spirit to clean the cord but 69 (32.4%) applied other substances after cleaning with methylated spirit. One hundred and fifty nine (75.5%) mothers cleaned the cord at least four times daily. Table 3 shows cord care practices among mothers.

**Table 3:** Cord care practices among mothers.

Materials used to clean cord		
Material	Number	Percent
Methylated spirit	200	95.3
Water	7	3.3
Herbs	3	1.4
Nothing	0	0
<b>Total</b>	<b>210</b>	<b>100</b>
Substances applied after cleaning		
Substance	Number	Percent
Petroleum jelly	40	58.0
Hot balms	14	20.3
Antibiotic ointments	8	11.6
Tooth paste	4	5.8
Others (powder, breast milk, baby lotion, occlusive dressing with spirit soaked cotton wool)	3	4.3
<b>Total</b>	<b>69</b>	<b>100</b>
Frequency of cleaning cord		
Frequency	Number	Percent
Once daily	6	2.8
Twice daily	28	13.3
Thrice daily	17	8.1
= four times daily	159	75.5
<b>Total</b>	<b>210</b>	<b>100.0</b>

Mothers level of education did not significantly affect application of other substances on the cord ( $\chi^2 = 3.51$ , p-value = 0.110). One hundred and eighty three (87.1%) mothers reported that there were no problems with their baby's' cords (Table 4).

**Table 4:** Cord problems reported by mothers

Problems	Number	Percent
None	183	87.1
Bleeding	16	7.6
Foul smell	9	4.3
Redness around the base	2	1.0
<b>Total</b>	<b>210</b>	<b>100.0</b>

One hundred and ninety (90.5%) mothers had received some information on cord care. Nurses were the highest source of information (Table 5).

Table 5: Source of information on cord care

Source	Number	Percent
Nurses	166	79.0
Doctors	8	3.8
Books	2	1.0
Grandmothers	18	8.6
Others (neighbours, friends)	16	7.6
<b>Total</b>	<b>210</b>	<b>100</b>

### Discussion:

The study shows that most of the women had antenatal care in recognized Government health institutions and majority had at least secondary education which translates to at least 10 years of schooling. This study population was similar to that in a Teaching hospital in Lao PDR where an intervention method was studied among pregnant women attending antenatal care.<sup>12</sup> An important factor which has been documented in playing a role in health care seeking behaviour is mother's educational level. Several studies have reported a positive relationship between maternal education and care seeking.<sup>13,14,15</sup> Lower rank of education of mothers has been associated with lower utilization of health services and vice versa. In this study the mothers educational level was significantly associated with place of antenatal care and place of delivery. It is also worth noting that although many women had antenatal care in recognized centres, some of these women still had deliveries at home and with TBAs. Although the reason for this was not explored, this finding has been reported in other studies.<sup>10,16</sup> This trend is worrisome as care of the cord may be less than optimal in babies born at home in unsupervised home deliveries.<sup>17</sup>

About a third of the mothers did not know what was used to cut their baby's cord. Scissors and surgical blade were mentioned mostly especially for those who delivered in recognized hospitals and these may be subsumed to be sterile. While there is a general agreement for cutting the cord using sterile instruments (blade or scissors), in many parts of the world especially in developing countries, the cord is still cut with unsterile instruments such as used razor blades.<sup>18</sup> In this study old razor blades were used in only one percent of the mothers. This may again be because most of the deliveries were in recognized Government Hospitals.

The study also shows high rates of use of methylated spirit for cord care. This finding contrasted sharply with that in another Nigerian study<sup>10</sup> where only 8.5% of women reported its use. There was a higher rate of use of harmful substances in their study and this was attributable to the kind of study population with as many as 64% of the women having no formal education. This again points to better child care when women are more educated. Different methods of caring for the umbilical cord after delivery have been applied over the years in an effort to reduce the risk of neonatal infection but recent review of the literature has not supported one regime over another for preventing cord infection<sup>19,20</sup>. The World Health Organization recommends that dry cord care at birth and the days following birth is effective in preventing cord infection.<sup>7</sup> This recommendation may not be applicable in developing countries, where some harmful and unhygienic traditional practices and unclean living conditions increase the risk of sepsis.<sup>10,21</sup> For example, chlorhexidine has been reported to be effective from studies in Nepal<sup>22</sup>, while the findings in this study are in keeping with the Nigerian protocol which supports the use of methylated spirit in cord care.<sup>21</sup>

However, apart from the use of methylated spirit, 32.4% of mothers applied other potentially harmful substances to the cord. Some of these substances included petroleum jelly, hot balms, tooth paste, herbs, occlusive dressings with methylated spirit soaked swabs and antibiotic ointments. The dangers of percutaneous absorption have been well documented.<sup>23</sup> Reports describe toxic side effects from systemic absorption of topically applied agents in infants. Methylated spirit is widely used for cord care, and usually evaporates before it is absorbed by the skin. Cases of toxicity have however been reported after application with occlusive dressings.<sup>23</sup> Topical antimicrobials have been associated with emergence of bacterial resistance and allergic contact dermatitis.<sup>23</sup> Although these effects have not been documented in our environment, it is a well known fact that cord infections are more common in the developing world and most of these result from use of harmful and potentially infective substances in cord care as seen in this study. It is worth noting that although mother's educational level was significantly associated with place of antenatal care and delivery, it did not significantly affect what was applied to the cord. This highlights the fact that there is need to educate all mothers on good cord care practices.

Majority of the mothers cleaned the cord at least four times daily. This frequency of cord cleaning may probably coincide with diaper changes. For decades, the use of alcohol daily and as often as each diaper change has been recommended to decrease infection and shorten cord separation time. However, there is absence of studies that show the benefits of this practice.<sup>24</sup>

There was a low incidence of cord complications reported in this study. This is comparable to that in a previously mentioned Nigerian study.<sup>10</sup> The reason for this, as postulated in the other study may be due to self reports. Some mothers may be unwilling to give negative information in other not to be seen as irresponsible or that they do not recognize problems with the cord. It may also be because this study was done among apparently enlightened women, most of who received antenatal care and used methylated spirit for cord care.

Nurses were the highest source of information on cord care. This is probably because in most antenatal clinics in our setting, nurses routinely give health talks, some of which may include teachings on cord care. Very few mothers got information from doctors. This may be related to their busy schedules and lack of time. One study estimates the monetary costs of 10 minutes to teach cord care at \$20/hr to be approximately \$16,000 at a hospital with 4,800 births per year.<sup>25</sup> This cost is enormous but it is important that doctors who eventually manage cord complications should show some interest in educating mothers as this may help reduce morbidity and mortality arising from cord complications. Furthermore, authors in Lao PDR<sup>12</sup> found that mothers were able to understand and retain information about good newborn care practices including care of the cord after a brief low cost educational intervention at an antenatal visit.

In conclusion the study shows that maternal education does affect health care seeking and newborn cord care practices among mothers. There was a high rate of use of methylated spirit for cord care in keeping with the Nigerian protocol. However, there is still a high rate of use of harmful substances for cord care. Health education by all health care personnel for all mothers on good cord care practices will help to reduce morbidity and mortality from cord infections.

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