

ORIGINAL ARTICLE

Cord Care Methods in Neonates

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ABSTRACT

Background: Proper cord care methods in neonates have been known to reduce infections, sepsis, and death. This study intends to document the frequency of cord care methods.**Methods:** A questionnaire-based study was done in 6 months in a tertiary care hospital with a level 3 nursery and NICU (Fatima Memorial Hospital, Lahore). We interviewed mothers and female companions of neonates in wards and outpatient clinics. Answers were added to SPSS in socio-demographic categories and cord care methods.**Result:** A total of 778 females were interviewed. The mean age is 28 + 8.1 years, mostly educated (90%) and resided in urban areas (83%). 39.4% of the participants had personal experience of newborn care. Most were housewives (74.4%).

36.8% would not apply anything to the cord, but the other majority would apply some agent to the newborn cord, methylated spirit being the favourite (48.5%), remaining being mostly antibiotics and antimicrobial agents. Chlorhexidine was used only by one participant.

Doctors and nurses had counselled 70% of the participants, but 10% listened to the advice of relatives and grandmothers. 18.5% declined any knowledge of safe practices.

Conclusions: Our study emphasizes the need to educate our hospital staff (doctors, nurses and midwives) as well as family members of neonates with standardised cord care methods.**Keywords:** Neonates, Cord care, Umbilical cord, Methylated spirit.

INTRODUCTION

Sustainable Development Goals aim to reduce neonatal mortality to 12 per 1,000 live births and under-5 mortality to 25 per 1,000 live births(1). Pakistan still ranks second-highest in the world with a Neonatal mortality rate of (41.2 per 1000 live births), in 2019(2)(3).

Clean Birthing Process is a concept comprising of 6 hygienic practices, which are clean hands of the birth attendant, clean delivery surface, clean perineum, clean instrument to cut the cord, clean cord tie, and clean cord care (4). It has proven to reduce perinatal and neonatal infections(5). Another way to emphasize it is the incidence of cord infections (0.7%) in developed and 8-22 % in developing countries, ultimately leading to sepsis and mortality (6)(7).

World Health Organization (WHO) recommends "Daily chlorhexidine (7.1% chlorhexidine digluconate aqueous solution or gel, delivering 4% chlorhexidine) application to the umbilical stump during the first week of life, for home deliveries especially in regions with high neonatal mortality (30 or more neonatal deaths per 1,000 live births). Clean and dry cord care is recommended for newborns born in health facilities or born at home in areas with low neonatal mortality. In low-risk areas, chlorhexidine is recommended only if there is tradition or risk of harmful methods such as application of cow dung (8).

Objective: This study aims to document the frequency of different methods in our hospital and their relation to different social (demographic)factors.

MATERIAL AND METHODS

Fatima Memorial Hospital, Lahore is a teaching and tertiary care hospital, with well-established and busy obstetric and neonatal units. The study was conducted over 1 year from July-2020 to December 2020.

The approximate sample size was 700 interviews, keeping the confidence interval at 99% (z value=2.57), error of margin at 3%, and assumed prevalent poor cord care practices at 80%, according to a previous study from Lahore. Sampling was done by non-probability convenient technique.

Participating doctors were trained about the questionnaire. They interviewed mothers and their female attendants, during ward rounds in obstetrics and neonatology as well as in neonatal outpatient rooms. Unmarried women were excluded from the study because of the traditional reluctance to answer the questions.

Verbal consent was taken. The anonymity of data was ensured.SPSS version 20 was used, descriptive parameters were expressed as frequency and percentages. A Chi-square test was used to identify any significant association between methods of cord care with age, parity, education, occupation and area of residence.

RESULTS

A total of 778 females were interviewed in 6 months. The mean age was 28+ 8.1 years. The socio-demographic characteristics of participants are shown in table 1.

Table 1: Socio-Demographic Characteristics of Participants

Variable	Frequency (n)	Percentage (%)
Age		
20 or less	11	1.41
21-30 years	422	54.24
31-40 years	234	30.08
41-50 years	102	13.11
>50 years	9	1.16
Educational Status		
10 or more years	432	55.53
Less than 10 years	267	34.32
Nil	79	10.15
Marital Status		
Married but No Kid	357	11.5
Married and First baby	637	20.4
Married and 2nd baby	788	25.3
Married and > 2 kids	438	14.1
Residence		
Lahore	442	56.81
Villages	132	16.97
Other Cities	180	23.14
Outside Pakistan	24	3.08
Occupation		
Housewives	579	74.42
Jobs/careers	199	25.58

Most of our participants belonged to urban areas (83%), were educated (illiterate only 10%) and were housewives (74.4%). 31.9% of females (married but no child + new mothers) previously had no personal experience of neonatal care. They were likely telling the practice that they had observed in the family.

The preferred methods of cord care are shown in Table 2.

Table 2: Attitudes about Cord Care in Newborns

Variable	Frequency (n) Total = 3115	Percentage (%)
Source of Knowledge		
Doctor	488	62.72
Do not Know	144	18.51
relative/other	60	7.71
Nurses/Midwives	55	7.07
Grandmother	31	3.98
Method of Cleaning Cord		
Spirit	377	48.46
Do not Know	189	24.29
Nothing	98	12.60
Antibiotic creams	56	7.20
Pyodine	19	2.44
alcohol swabs	17	2.19
Gentian violet	12	1.54
Ghee/Oil	9	1.16
chlorhexidine	1	0.13

Antimicrobial use has been a predominant method (approx. 62%). The antimicrobials were methylated spirit (48.5%) and others like pyodine, alcohol swabs, pyodine, gentian violet, antibiotic creams (containing Polymixin B, bacitracin zinc, fusidic acid, neomycin etc) in small percentages. Chlorhexidine gel as recommended by WHO was used by one participant. Thankfully, ghee or oil was used by only 9 females, and none used ash.

Though doctors have been the main source of knowledge in our study, who in combination with nurses and midwives, counselled about 70% of the participants. Most of the doctors were family physicians, who had prescribed the antibiotic. Relatives and grandmothers influenced 10% of the younger females, mostly having 1st child. Cord clamp usage was 100%.

We failed to find any significant correlation between the method of cord care and socio-demographic characteristics.

DISCUSSION

After birth, the umbilical cord dries and shrivel in 5-7 days on average, ranging upto 15 days before falling off. The stump gets colonised with non-pathogenic bacteria. But omphalitis may happen if pathogenic bacteria invade the area, which if not treated promptly may cause sepsis and death. Staphylococcus aureus is the commonest bacteria, others are Staph. Epidermidis, group A and B Streptococci and rarely gram-negative bacteria, such as E. coli, Klebsiella pneumonia, pseudomonas and Aeromonas(10).

In comparison to previous studies, most of our participants were literate and resided in urban areas, so supposedly should be well educated about safe newborn care practices. But indiscriminate prescription by doctors and free over the counter availability of antibiotics and antimicrobial agents is worrisome. In some cases, families continued to use antibiotics for all babies, which have been prescribed for another child with omphalitis. Our number of participants using ghee or oil, or ash were minimal, which thankfully contrasts with previous local studies(11).

It is good that doctors and medical personnel were counselling most of the cases, the accuracy and safety of advice, however, needs to be improved inline with the latest guidelines. The role of relatives and grandmothers, though much less in our study, still impacts 10% of our participants.

Methylated spirit (denatured alcohol, containing ethanol and methanol), commonly called Spirit, is antibacterial and antifungal. It is the commonest agent used for cord care in our cohort, like results in other studies(12)(13). Its side effects include skin irritation, and prolonged cord separation time (10).

WHO recommended Chlorhexidine, which is potent against gram-positive organisms, especially staphylococci (14). Its use reduces omphalitis by 50%, neonatal sepsis by 32% and neonatal

mortality by 12% (15)(16)(17)(18)(19). There are some side effects such as dermatitis and neurotoxicity (14).

We need studies from rural areas, especially remote areas.

CONCLUSION

There is a wide gap in the actual practices and current guidelines. We should educate our doctors as well as the public about safe practices.

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