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Research Article

NEONATAL CORD CARE PRACTICES AMONG MOTHERS PRESENTING TO THE OUT-PATIENT DEPARTMENT OF A TERTIARY CARE SETUP IN LAHORE PAKISTAN

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Abstract:

Background: The umbilical cord can act as a major route of infection among newborns. Majority of early childhood deaths in the developing world occurs through the infected umbilical cord stump. This study promises to investigate the role of different topical agents for the cord care by the mothers

Methods: This was a descriptive cross-sectional study of neonatal cord care practices among mothers presenting in the out-patient department of University of Child Health Sciences and Children Hospital, Lahore. Quantitative and qualitative methods were used.

Results: Study revealed that Majority of the mothers were applying topical agents that have not been approved and recommended by the competent authorities for the dressing of umbilical cord (62.0%). Factors for example educational status [$\chi^2=8.2$, $p=0.02$], birthplace settings [$\chi^2 = 40.1$, $p<0.001$], advices from the relatives and peers [$\chi^2=95.2$, $p<0.001$] and number of days required for the stump to whither off [$\chi^2=6.2$, $p=0.05$] were found to influence the type of dressing used on the umbilical cord.

Conclusion and Global Health Implications: In order check the neonatal mortality by countering the septic and toxic sequel associated with the preventable cord and stump infections, only the approved and registered topical agents should be endorsed. Parents oriented updated neonatal health education especially on cord care by targeting front line healthcare workers at the primary and secondary healthcare level should be optimized.

Key words: Umbilical cord care • Neonates • Newborns • Mothers • Dressing • Infections

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INTRODUCTION:

Newborn umbilical cord infections although inevitable are almost preventable. They can occur in any setting but are most common in children being born in the developing world due to the lack of trained birth attendants.[1] According to WHO statistics, the year 2016 accounted for 2.6 million under five deaths, neonatal deaths were reported to be 46% which equals into the death of 7000 newborns every day.² Data reveals that the primary causes of newborn deaths included infections (32%), asphyxia (23%) and premature births and low birth weight (27%). Most of such deaths were linked to the umbilical cord infections, which originated from cultural social practices prevailing in the communities. [2,4] The umbilical cord behaves as an ideal medium for bacterial expansion, it also acts as a direct route for bacteria to enter the bloodstream of the newborn leading to sepsis and death. [2,5,6] Various topical agents have been in practice across the world with a vision to combat risk of infection with the majority being unapproved and unsafe. Immediate post-delivery cord care techniques can play a vital role in minimizing neonatal morbidities and mortalities. In Pakistan, some people dwelling in the rural areas are known to use cow dung on the umbilical cord; in various communities of Ethiopia, people apply butter, petroleum jelly and hair lotion on the umbilical cord to encourage stump healing. [5,7] Bennet et al., reported that almost one-third of babies born in Pakistan were applied heated desi ghee mixed with dung cake for the cord care. These findings revealed a positive correlation with the incidence of neonatal tetanus.⁷ In Zambia's Choma District, most of the deliveries are attended outside of health care facilities which creates the chances of different agents being applied on the umbilical cord. Mothers have reported to apply substances like petroleum jelly, vegetable oil, baby lotion and breastmilk on the cord stump. Few people have also known apply dried ground roots of various plants, burnt bitterguards and ashes. [8] According to Alam et al. people of the Bangladesh in Sylhet District; have been preferring the application of substances such as mustard oil, ash, mud, mother's saliva, ginger and/or chewed rice for the involution of the umbilical cord. The infection rate was Nine percent (9%) in their infants. [9]

A Baby-Friendly Hospital Initiative (BFHI), launched in 1991, under the umbrella of the United Nations Children Fund (UNICEF) aimed at ensuring that all maternity and birthplace settings across the world should be equipped and trained to advocate ensuing breastfeeding within 1 hour, clean cord care, thermal

care. [10] The current guidelines on neonatal health as endorsed by WHO recommends using chlorhexidine (4%) on the umbilical cord stump during the first week of life especially for babies born at home or in areas having high neonatal mortality rate > 30 per 1000. In areas where neonatal mortality rate is low, dry cord care is recommended for children born in health facilities or at home, Nonetheless chlorhexidine stands as a promising replacement against unapproved and unsafe traditional substances such as cow dung. [11]

In January 2014, The World Health Organization (WHO) has issued a new directive in this regard. As a result of extensive testing and research. The use of the newly approved product chlorhexidine digluconate 7.1% gel for cord gel is a better replacement of methylated spirit which has been in practice for umbilical cord care since many years.¹² Despite the fact that methylated spirit was recommended for use on the umbilical cord, mothers still have firm belief on the therapeutic value of the un approved topical agents. Thus, this study was conducted to identify practices and evaluate the knowledge of mothers related to application of various topical agents for cord care presenting in the out-patient department of University of Child Health Sciences and Children Hospital, Lahore.

METHODS:

This was a descriptive cross-sectional study. Both quantitative and qualitative methods for data collection were applied. A survey based semi-structured questionnaire approach was used in this regard to assess the knowledge and practices of mothers regarding application of the topical agents for the umbilical cord care. The study was conducted among the mothers presenting in the out-patient department of University of Child Health Sciences and Children Hospital, Lahore during July - December 2020.

The sample size comprised of all mothers having children not more than two years old. Purposively convenient sampling technique was used to enroll 50 mothers to find out their influence on the kind of substances they apply to the umbilical cord of their newborns. The dependent variable was the type of dressing applied to the umbilical cord. The independent variables were: place where the mother delivered the baby, the mothers' educational status, how long it took the umbilical cord to regress and relationship with people who made recommendations for a particular type of dressing to be applied. The study was conducted after due approval from the

ethical review committee of the presenting in the out-patient department of University of Child Health Sciences and Children Hospital, Lahore. A written informed consent was obtained from all participants before being included in the study. Confidentiality and anonymity were ensured. The data was analyzed using SPSS version 17.

RESULTS:

Most of the study participants were between the ages of 25 – 29 (40%), majority (64%) had no formal education and farming/labor (62%) was the main occupation of the participants in the study (Table 1).

Table1. Demographic Data of the participants

Characteristics	Range	n=	Employment
Age		03	06
	16-19	07	14
	20-24	20	40
	25-29	12	24
	30-34	08	16
	35-39		
Educational Status			
	Uneducated	27	54
	Primary	13	26
	Secondary	06	12
	Higher Secondary and Above	04	08
Employment			
	Business/Government Servant	03	06
	Farming Labor	31	62
	Craftsman	09	18
	Unemployed	07	14

Table 2 shows a univariate analysis of the type of dressing respondents used prior to the falling off of the umbilical cord and what they used after it had fallen off. The recommended cord dressing (methylated spirit) was used by 32% (16) of the respondents while the remaining proportion 68% (34) used substances that have not been recommended such as shea butter, toothpaste, chalk, sand, salt, petroleum jelly, baby lotion, penicillin and amoxicillin before the falling off of stump.

Following trend in the use of recommended and not recommended substances for cord dressing after the cord has fallen off was noticed. Majority (84%) of the mothers used substances that have not been recommended for cord dressing such as shea butter and hot water and 16% of the mothers used methylated spirit (Table 2).

Table.2 Univariate analysis on the type of dressing before and after the cord shed off

Type of Dressing	Dressing used before the cord shed off		Dressing used after the cord shed off	
	N	Percentage%	N	Percentage%
Approved/Recommended	16	32	08	16
Unapproved/Not Recommended	34	68	42	84

Table.3 Analysis for predicting the type of substance used by the mothers for the cord care

Determinats	B	P-value
Mothers Educational Status	0.08	0.02
Settings where delivery took place	0.17	<0.01
Relation with the person recommending dressing type	0.16	<0.01
Days taken by the cord to shed off	0.07	0.02

DISCUSSION:

This study revealed several factors that manipulate the practices of mothers of applying different topical agents on the umbilical cord. Results have shown that mothers use different products or substances on the umbilical cord, as many as 68% of respondents from this study used unapproved dressings such as shea butter, desi ghee mixed with dung cakes, herbs, tubers and roots of various plants, salt, ground banana peels mixed with shea butter, sand mixed with salt, chalk mixed with salt and strong antiseptics such as Dettol. Results from a study conducted by Waiswa et al. in Uganda and Amare in Ethiopia are analogous to the results extracted from this study.^{5,15} Mothers were found to use substances like baby powder, herbs, spirit, alcohol, soapy water, salty water, butter, petroleum jelly, and hair oil for cord dressing.

The level of education of the mother determined the relation with the type of dressing they would prefer for the cord and stump health. Majority was of those who did not receive any formal education (68%) and opted unapproved substances for the cord. AbhulimhenIyoha and Ibadin also narrated that those mothers who had attained at least primary level at education adopted the approved dressing/substances such as methylated spirit for cord care while mothers with no formal education are prone to succumb to the myths and superstitions and used unapproved/unsafe dressings on the umbilical cords of their neonates. [16]

Another determinant that overpowered the choice of dressing used was the place of delivering the baby. In this study a greater number of women delivered outside the health facility (62%) compared to 38 % who delivered in a healthcare setting having trained birth attendants. This is in accordance with findings of the studies of Ambe et al. and Medewase et al. who documented that the use of unapproved topical substances was more common among mothers of babies who were delivering outside/away from a health facility. [17,18] In addition to this mothers relationship with whoever recommended for a particular type of dressing was found to be significant. The preference of the type of approved dressing/application was influenced mainly nurses

while that of unapproved dressings was influenced by either grandmothers of the newborns 60.0% or traditional birth attendants or friends (18%). The time it takes for the umbilical cord to shed off was also found to be significant during the chi square analysis. Cultural beliefs of communities influence the duration the mothers manage the umbilical cord lesion before it falls off. In the current study, a larger proportion of the candidates (56 %) agreed that the cord should be detached by the 4th day. Results from a study by Hill et al., revealed that mothers whose young ones cords were not shedding quickly use drying agents to accelerate the detaching process. [19] Also Mukhtar-Yola M showed that the variation in cord separation time can be associated to the effect of unapproved/unsafe cord care practices. On the other hand, mothers who used recommended and approved cord care preparations their umbilical cord separated from the stump by the 4th day. [20]

LIMITATIONS:

Our study was confined to a single hospital of a metropolitan cities entertaining referrals from outskirts and countryside. It would have been more pragmatic to involve the volunteers from different provinces and backgrounds only if the study had been extended in different parts of the country in order to evaluate the response and reasoning of people belonging to different cultural spectrum in Pakistan for the umbilical cord care preparation. Our findings are however of relevance to the study area and also adds to the body of knowledge on the subject.

CONCLUSION AND GLOBAL HEALTH PERSPECTIVE:

This study has demonstrated that some segments of the society in Pakistan still use unapproved, unsafe and non-medicated preparations for their newborn umbilical cord care. Therefore it is imperative to boost up public education measures particularly targeting those in the less privileged and remote areas. Also the updated guidelines be shared to the trained birth attendants and family focal persons through electronic/print/social media. This will potentially help to reduce the neonatal mortality rate in the country.

Conflicts of Interest: *The authors declare no conflict of interests.*

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