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Knowledge, attitude, and behaviour about the care of the new-born's umbilical cord in a rural Ghaziabad

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ABSTRACT

Background: The umbilical cord attaches the fetus to the placenta. Unhygienic cord care practices are an important cause of infection in the first few days of life. Therefore, care must be taken to prevent infection in the newborn by using properly sterilized instruments and cord tie for cord cutting and tying and cord must be kept dry and clean.

Objective: The present study was undertaken to assess the knowledge and practices regarding umbilical cord care of the neonate in a rural community of Ghaziabad district.

Methodology: The current study was carried out in Santosh Medical College, Ghaziabad from June 2018 to May 2020. The present study is a community-based cross-sectional study. Sample size is determined by Fisher's formula and multi-stage sampling technique was used. Taking the safe upper limit allowing for non-responses (10%), a sample size of 300 was taken. For data collection a semi-structured study schedule was used as the tool.

Result: This study was conducted among population of one month to six months of age constituting 51% females and 49% males. Out of total 300 study population, only 12.3% were aware of common symptoms of umbilical cord infection. This shows poor knowledge of umbilical cord stump infection in a newborn. While 49.7% mothers had knowledge that it prevents cord infection.87.7% mothers kept umbilical cord of the newborn clean.

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Conclusion: The study population had low cord care knowledge. Strategies need to be instituted by health care workers to improve knowledge of umbilical cord care and inappropriate practices should be strongly discouraged.

Keywords: Parity, Antenatal, Kangaroo mother care, Sterilize.

INTRODUCTION

The umbilical cord is the lifeline between mother and baby during pregnancy. The cord allows oxygen and nutrient-rich blood to flow to your baby. The cord also carries away the baby's waste products. After birth, baby is ready to breathe and eat on their own so they no longer need their umbilical cord. Your provider will place a clamp on your baby's umbilical cord and cut it. This stops the flow of oxygen and nutrient-rich blood from you to your baby.

After your baby is born, you'll need to take steps to care for the umbilical cord after your hospital stay. It's important to keep the cord stump clean and dry to prevent infection. The care of the umbilical cord differs between groups and is influenced by the mothers' level of education, their cultural and religious beliefs, and the resources that are available. [1]Methods of umbilical cord care vary widely among communities depending on their cultural and religious beliefs, level of education and resources. In developing countries, even babies delivered in hospitals may be affected by traditional practices after discharge which most times lead to umbilical cord infection and neonatal deaths. [3] Where proper umbilical cord care is not practiced, the umbilical cord is readily infected. Mothers who adopt proper umbilical cord care will by implication contribute to the survival of the neonate and prevent neonatal death from infections such as omphalitis, neonatal [4,5,6] tetanus and septicaemia The umbilical cord attaches the foetus to the placenta. After birth the umbilical cord is clamped and cut, it dries and falls off in five to fifteen days. It is an important cause of infection in the first few days of life due to unhygienic cord care practices. Care must be

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taken to prevent infection in the new-born by using properly sterilized instruments and cord tie for cord cutting and tying and cord must be kept dry and clean. It is recommended to apply nothing on the cord.

Despite efforts to enhance cord care practices, recommendations for umbilical cord care are rarely followed in many developing countries where deliveries are performed by unskilled professionals. Numerous studies carried out in developing countries reported that mothers apply substances such as mustard oil, turmeric, cow dung, and antiseptic lotion to the cord stump. [7, 8, 9]

As cord infections are preventable in most cases, it is important to identify the best cord care practice to reduce neonatal mortality and morbidity and offer an alternative to widespread potentially harmful traditional practices. [2]

MATERIALS AND METHODS

The current study was conducted in Rural Community in District Ghaziabad, Uttar Pradesh. All the households in the study area with mothers of infant of one month to six months of age in the rural area of Ghaziabad district were included.

The sample selection was based on Household with mother of an infant from one month to six months of age. Mothers who had been residing in the study area for one year or more. Willingness of the mother to participate in the study. For this study, multi-stage sampling technique was used. The data collection covered a period of eight months from May 2019 to December 2019. A pilot study was carried out in May 2019 and based on this pilot study interview schedule was modified.

After the umbilical cord is cut at birth, a stump of tissue remains attached to a new-born's navel. The umbilical cord stump gradually dries and shrivels until it falls off (usually 1 to 2 weeks after

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birth). It's recommended to not to apply anything on the umbilical stump. Keep the umbilical stump clean and dry. [10]

RESULTS

The study entitled "the knowledge attitude & practice of mother for umbilical cord care" conducted in the rural area of district Ghaziabad. All findings of this study pertain to the 300 mothers surveyed in the selected villages of Muradnagar block, Ghaziabad district.Information was collected in a pre-designed and pre-tested schedule by house-to-house visits.

Table 1 shows that the maximum number of mothers, 136 (45.3%), falls in the age group of 21 to 25 years, followed by 26 to 30 years, 113 (37.7%) and more than 30 years of age, 38 (12.7%). Only 13 (4.3%) mothers were less than 20 years of age. 125 (41.3%) of the children's fathers fell under the age group of more than 30 years of age followed by age group of the 26 to 30 years, 100 (33.3%). One-fourth of the fathers were of age between 21 to 25 years of age, 100 (25%). Out of 300, majority of mothers 137 (45.7%) and fathers113 (37.7%) did schooling up to middle school. Out of 300, 287 (95.7%) of the mothers were homemakers. Majority of the mothers were Hindu 224 (74.7%) and 76 (25.3%) were Muslims. Table 1 shows 186 (62%) mothers belonged O.B.C. caste, 63 (21%) belonged to general caste and 51 (17%) were SC/ST.

Majority of the mothers belonged to the joint family 164 (54.7%) followed by nuclear family 99 (33%). Least number of mothers belonged to a three- generation family 12.3 (12.3%).112 (37.3%) families belonged to Social Class IV followed by 88 (29.3%) belonging to Class II. None of the families belonged to Class I and 17% belonged to Class V and 16.3% belonged to Class III.Majority of the mothers were of second parity 124 (41.3%) followed by 100 (33.3%) of mothers having parity of three or more. Only 76 (25.3%) mothers were primi.It also shows that out of 300 mothers

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there is 223 (74.3%) had done antenatal registration during the first trimester of the last pregnancy and 77 (25.7%) mothers had not done antenatal registration.

Table 2 shows that 164 (54.7%) mothers had knowledge of umbilical cord separation time as 7 to 10 days followed by 62 (20.7%) mothers had knowledge of 11 to 14 days. Also, 37 (12.3 %) mothers did not know about umbilical cord separation time and other 37 (12.3%) said 3 to 6 days for umbilical cord separation time. In the present study, 175 (58.3%) did not know about any symptoms of umbilical cord infection. Only 51 (17%) mothers had knowledge of discharge from umbilicus as sign of cord infection followed by 37 (12.3%) mothers had knowledge of swelling, redness and discharge from cord as symptom for cord infection. Remaining 24 (8%) mothers had knowledge of only swelling followed by 13 mothers (4.3%) were aware of redness around/of umbilicus as a symptom for cord infection.

It also shows that 263 (87.7%) mothers practiced keeping umbilical cord stump of the new-born clean while 12.3% mothers did not know. Only 24.3% mothers practiced not using any applicants on umbilical cord followed 37.3% mothers had applied ghee on the umbilical cord of their children. One-third mothers applied antiseptic on the cord (34.3%) while 8.7%mothersappliedoil on the cord.

Table 3(a) shows significant association between age, literacy status, occupation, caste, type of family and socioeconomic status of the mothers and knowledge regarding temperature assessment in a new-born (p=0.001). There is no association between religion of the mother and knowledge regarding temperature assessment in a new-born (p=0.074). It also shows significant association between age, literacy status, occupation, religion, caste, type of family and socioeconomic status of the mothers and knowledge regarding signs of umbilical cord infection (p=0.001).

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Table 3(b) shows significant association between literacy status, religion, caste and type of family of the mothers and knowledge regarding KMC (p=0.001). It also shows significant association between literacy status of the mothers and knowledge regarding KMC (p=0.028). It shows significant association between socio-economic status of the mothers and knowledge regarding KMC (p=0.010).There is no association between occupation of the mother and knowledge regarding KMC (p=0.759).

It also shows significant association between age, religion, caste, type of family and socioeconomic status of the mothers and knowledge regarding umbilical cord separation time (p=0.001). It shows significant association between literacy status of the mothers and knowledge regarding umbilical cord separation time (p=0.003). There is no association between occupation of the mother and knowledge regarding umbilical cord separation time (p=0.091).

It also shows association between age, literacy status, type of family and socioeconomic status of the mothers and knowledge regarding advantage of clean umbilical cord for a new-born, that it prevents infection in new-born (p=0.001). It also shows association between occupation of the mothers and knowledge regarding advantage of clean umbilical cord for a new-born (p=0.045). There is no association between religion of the mother and knowledge regarding advantage of clean umbilical cord (p=0.843).There is no association between caste of the mother and knowledge regarding advantage of clean umbilical cord (p=0.177).

DISCUSSION

The present study is a community-based cross-sectional study, undertaken to study the knowledge and practices of mothers regarding umbilical cord care of the neonate in a rural community of Ghaziabad district.The sample selection was based on the household with mother of an infant from

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one month to six months of age residing in the study area for one year or more. In the present study multi-stage sampling technique was used and 300 mothers of an infant from one month to six months of age are studied. For data collection all respondents were briefed about the need and objectives of the study and consent to participate in this study was taken from them. The respondentswere interviewed to record the various socioeconomic variables and the knowledge and practice of the mothers of the children regarding new-born's umbilical cord care.

In this study, majority of mothers did not know about any symptoms of umbilical cord infection. This shows poor knowledge of umbilical cord stump infection in a new born. In the present study, 50.3% of mothers were not aware of the benefit of keeping umbilical cord of a newborn clean and dry while 49.7% mothers had knowledge that it prevents cord infection. In a cross-sectional study by Osuchukwu et al. (2017) conducted in Nigeria, it was found 48.9% respondents said advantage of umbilical cord care is to ward off evil spirits, 19.3% respondents said to prevent neonatal tetanus and 6.7% said it prevents abdominal pain. Only 25.1% respondents were aware of the benefit of keeping umbilical cord care prevents cord infection. [11]

In the present study, 87.7% mothers kept umbilical cord of the newborn clean. In community-based study in the rural population in Bhilai, Chhattisgarh by Mani et al. (2019) 61.3% participants' practised umbilical cord stump hygiene. This difference would be due to difference in geographical area and socio-demographic determinants. In a population- based cross-sectional study by Lyngdoh et al. (2018) conducted in rural villages of UP, it was found that 3.4% respondents had knowledge that nothing should be applied on cord stump. [12, 13]

Only 24.3% mothers practised not using any applicants on umbilical cord in the present study while 12.3% mothers did not know. Only 24.3% mothers practised not using any applicants on umbilical cord followed 37.3% mothers had applied ghee on the umbilical cord of their children. One-third

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mothers applied antiseptic on the cord (34.3%) while 8.7% mothers applied oil on the cord [Table 19]. Similarly in Vijayalakshmi S et al. 90.5% mothers applied applicants on umbilical cord of their children which is higher than the present study. In a population-based cross-sectional study by Lyngdoh et al. (2018) conducted in rural villages of UP, it was found that 23.9% respondents practiced applying nothing on cord. [14, 12]

The present study shows that there is no association between religion of the mother and knowledge regarding temperature assessment in a new born. There is a significant association between knowledge regarding KMC, umbilical cord separation time and advantage of clean umbilical cord for a new born and socio-demographic factors (age, literacy status, occupation, religion, caste, type of family and socioeconomic status of the mothers).There is no association between occupation of the mother and knowledge regarding KMC. There is no association between occupation of the mother and knowledge regarding umbilical cord separation time. There is no association between religion and caste of the mother and knowledge regarding advantage of clean umbilical cord. In a cross-sectional study by Osuchukwu et al. (2017) conducted in Nigeria, it was found that age and educational status of the mothers was significantly associated with knowledge of umbilical cord care (p value=0.001).[11]

CONCLUSION

During the neonatal period, proper care of the neonate's umbilical cord is critical, and improper umbilical cord practices have been linked to infections. The first month of life is the most crucial period in the life of an infant. The goal of early new born care is to assist the new born during the process of adapting to the new environment.

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The knowledge and practices of the mothers regarding new-born's umbilical cord care has revealed that the IEC (Information, Education and Communication) activities in the context of new born care have not fully percolated with beneficiaries. Formation of peer groups should also be initiated to upgrade the knowledge of mothers regarding birth process, need of proper antenatal care, institutional deliveries, early identification of danger signs and umbilical cord care etc.

Unhygienic cord care practices is an important cause of infection in the first few days of new-born's life. Care must be taken to prevent infection in the new born by using properly sterilized instruments and cord tie for cord cutting and tying and cord must be kept dry and clean. Information on appropriate umbilical cord care should be given to mothers during antenatal care and before discharge from health care facilities by Health Care Workers.Umbilical cord infection is preventable through affordable and straightforward strategies, including evidence-based cord care and avoiding unnecessary applications.Focused health education to mothers will help improve their knowledge, practice and the use of correct material in umbilical cord care to reduce neonatal morbidity and mortality.

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Table 1: Distribution of mother and father of the children according to the demographic, social variables, socioeconomic status and distribution of the mothers according to the parity and antenatal registration during first trimester of the last pregnancy. (n=300)

Demographic variables		Mother (%)	Father (%)
Age(in years)	<20	13(4.3)	0
	21-25	136(45.3)	75(25.0)
	26-30	113(37.7)	100(33.3)
	>30	38(12.7)	125(41.3)
Literacy Status	Illiterate	13(4.3)	13(4.3)
	Primary	25(8.3)	50(16.7)
	Middle	137(45.7)	113(37.7)
	High School	13(4.33)	25(8.3)
	Intermediate	75(25.0)	60(20.0)
	Graduate	37(12.3)	39(13.0)
Occupation	Homemaker	287(95.7)	0
	Laborer	7(2.3)	113(37.7)
	Farmer	0	13(4.3)
	Business	0	50(16.7)
	Semi-Skilled	0	49(16.3)
	Skilled	0	36(12.0)

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	Semi-profession or profession	6(2.0)	39(13.0)
Religion	Hindu	224	74.7
	Muslim	76	25.3
Caste	General	63	21.0
	O.B.C.	186	62.0
	SC/ST	51	17.0
Type of family	Nuclear	99	33.0
	Joint	164	54.7
	3 generation	37	12.3
Social Class	II	88	29.3
	III	49	16.3
	IV	112	37.3
	V	51	17.0
Parity	Primi	76	25.3
	Second	124	41.3
	Three o rmore	100	33.3
Antenatal registration	Registered	223	74.3
	Not registered	77	25.7

Table 2: Distribution of the mother's knowledge and practice of umbilical cord care. (n=300)

Cord care knowledge		**Number**	**Percentage (%)**
Umbilical cords eparation time	3 to 6 days	37	12.3
	7 to10days	164	54.7
	11 to 14 days	62	20.7

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	Did not know	37	12.3
Symptoms of umbilical cord infection	Swelling	24	8.0
	Redness	13	4.3
	Discharge	51	17.0
	All of the above	37	12.3
	Did not know	175	58.3
Benefit of keeping the cord clean and dry	Prevent cord infection	149	49.7
	Did not know	151	50.3
Umbilical cord care practices		**Number**	**Percentage (%)**
Umbilical cord stump hygiene (keeping it clean & dry)	Practiced	263	87.7
	Not practiced	37	12.3
Applicants used for umbilical cord	Nothing	73	24.3
	Antiseptic	103	34.3
	Ghee	112	37.3
	Oil	12	8.7

Table 3 (a): Association between socio-demographic factors and knowledge regarding temperature assessment in a new-born and signs of umbilical cord infection.

Sl. No.	Socio Demographic variables	Temperature assessment			P value	Umbilical cord Infection signs			P value
		N	P	P		N	P	P	
	Age (in years)								

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1	<20	1	12	0	0.001	13	0	0	0.001
	21-25	32	83	21		87	41	8	
	26-30	30	5	78		59	26	28	
	>30	37	0	1		16	21	1	
2	Literacy Status								
	Illiterate	13	0	0	0.001	13	0	0	0.001
	Primary	12	13	0		0	25	0	
	Middle	29	34	74		70	42	25	
	High School	0	4	9		13	0	0	
	Intermediate	21	45	9		63	12	0	
	Graduate	25	4	8		16	9	12	
3	Occupation								
	Homemaker	88	100	98	0.001	167	88	31	0.001
	Laborer	8	0	0		8	0	0	
	Professional	4	0	2		0	0	6	
4	Religion								
	Hindu	68	82	74	0.074	124	63	37	0.001
	Muslim	32	18	26		51	25	0	
5	Caste								
	General	10	53	0	0.001	38	25	0	0.001
	O.B.C.	69	42	75		111	38	37	
	SC/ST	21	5	25		26	25	0	
	Type of family								

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6	Nuclear	37	17	45		125	26	13	
	Joint	62	54	48	0.001	38	37	24	0.001
	3generation	1	29	7		12	25	0	
7	Socio economic status								
	II	46	18	24		63	25	0	
	III	28	4	17	0.001	11	38	0	0.001
	IV	22	52	38		88	12	12	
	V	4	26	21		13	13	25	

Table 3 (b): Association between socio-demographic factors and knowledge regarding kangaroo mother care, umbilical cord separation time and advantage of clean cord.

Sl. No.	Socio-Demographic variables	Kangaroo Mother Care		P-value	Umbilical cord Separation time		P-value	Advantage of clean cord		P-value
		No	Yes		No	Yes		No	Yes	
1	**Age (in years)**									
	<20	13	0		13	0		13	0	
	21-25	81	55	0.028	25	111	0.001	75	61	0.001
	26-30	71	42		15	98		51	62	
	>30	21	17		20	18		12	26	

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2	**Literacy Status**									
	Illiterate	9	4	0.001	9	4	0.003	9	4	0.001
	Primary	0	25		8	17		4	21	
	Middle	86	51		31	106		58	79	
	High School	4	9		4	9		13	0	
	Intermediate	58	17		13	62		51	24	
	Graduate	29	8		8	29		16	21	
3	**Occupation**									
	Homemaker	178	108	0.759	69	217	0.091	147	139	0.045
	Laborer	4	4		4	4		4	4	
	Professional	4	2		0	6		0	6	
4	**Religion**									
	Hindu	161	63	0.001	73	151	0.001	112	112	0.843
	Muslim	25	51		0	76		39	37	
5	**Caste**									
	General	63	0	0.001	26	37	0.001	38	25	0.177
	O.B.C.	110	76		22	164		87	99	
	SC/ST	13	38		25	26		26	25	
6	**Type of family**									
	Nuclear	37	62	0.001	25	74	0.001	38	61	0.001
	Joint	125	39		48	116		101	63	
	3generation	24	13		0	37		12	25	
	Socio economic status									

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7	II	63	25	0.010	13	75	0.001	38	50	0.001
	III	24	25		23	26		24	25	
	IV	74	38		24	88		76	36	
	V	25	26		13	38		13	38	