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Original Research Article

Knowledge, attitude and practice of mothers and prospective mothers in neonatal care and utilization of perinatal care services

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ABSTRACT

Background: The present study was done with the aim to study existing knowledge, attitude and practice (KAP) about neonatal care, perinatal care and its services, among mothers (pregnant and lactating mothers).
Methods: This cross-sectional study was done among 624 pregnant women and in mothers of newborn in both rural and urban areas around Vijayawada during the period from October 2015 to November 2017. A structured questionnaire reflecting KAP about neonatal care and perinatal care services was used in the study. The collected data was placed in a proforma and analysed.
Results: Rural (53.8%) and urban (46.2%) mothers are equally represented in the present study. There is a slight preponderance of lactating mothers (52.2%). Most of the mothers are homemakers (82.1%) and belong to nuclear families (90.1%). There is a considerable deficiency in the knowledge nearly 45% ad practices nearly 40%, related to the number of ANC's. The proportion of mothers receiving baby's immunization advice from obstetrician is 18.5% and from paediatrician is 26.4%. Neonatal infection prevention was not advised in 71.3% of mothers and 23.5% mothers receive advice from obstetrician and 19.1% from paediatrician. The practice of staring first breast feed within one hour is not implemented about 88% of mothers. Nearly 30% of the mothers are not keeping the baby warm and nearly 90% of the mothers are not aware of KMC.
Conclusions: The findings of the study conclude that there is a need for systematic and planned health education by the paediatrician and obstetrician to increase the KAP among mothers about neonatal health care.

Keywords: KAP, Mothers, Neonatal care, Perinatal services

INTRODUCTION

Perinatal care and maternal health are closely linked.[1] Skilled and quality care during pregnancy and child birth are important for health of the mother and the baby. Perinatal care quantifies essential health issues which includes screening, diagnosis, prevention and health promotion.[2] Mother's knowledge, attitude and practice (KAP) not only in individual neonatal care but also regarding the perinatal services are important to reduce neonatal mortality rate (NMR).[3] The former indicates presence or absence of beneficial neonatal care practice at an individual level and the later will indicate how mothers are utilizing perinatal care services formulated under IMNCI.

In the absence of appropriate knowledge, attitude and utilization of Perinatal care services it will be difficult to bring down NMR even with appropriate KAP about neonatal care. To effectively reduce NMR, mothers should have suitable KAPs of individual neonatal care as well as optimum KAPs of perinatal care services.

Perinatal care has tremendous impact on mother and child. Many women do not utilize institutional care in spite of physical accessibility.[4] Even where facilities exist socioeconomic and cultural barriers prevent their optimum utilization by the women who need them the most consequently resulting in hazardous health practices.[5] The availability of information in this regard is sparse. There is a need to collate information which would be beneficial in identifying problems in this regard and develop suitable strategies and initiate apt measures to improve the Neonatal Survival rate in our country.

The present study was done with the aim to study existing KAP about neonatal care and KAP of perinatal care and its services, among mothers (pregnant and lactating mothers).

METHODS

This was a cross-sectional study done in both urban mothers in and around Vijayawada and in rural mothers coming to DR, PSIMS & RF up to six months after delivery and prospective mothers, specifically pregnant women. The study was done during the period from October 2015 to November 2017.

The study was started after protocol approval by institutional ethics committee. Informed consent from all the patients was obtained. In our study, the mother's knowledge of neonatal thermal care will be of 76% or varies by 5%, with an alpha error of 5% and beta error of 20%, a sample of mothers of 510 to 624 are to be studied.

A structured questionnaire reflecting KAP about neonatal care and KAPs about perinatal care services will be prepared. Visits to rural/urban/women/child hospitals will be undertaken to obtain first hand data from mothers and prospective mothers. Selected mothers and prospective mothers from the urban and rural areas will be interviewed using questionnaire (enclosed as annexure). Data will be collected in a proforma and entered into an electronic database.

The collected data was entered into case proforma and converted into electronic database using Microsoft excel 2007. Statistical analysis was done using Epi Info 7.1.5.2 of centre for disease control, USA and Medical c15.11.4 Belgium.

RESULTS

Table 1 presents the demographic data of the patients. Predominant number of pregnant and lactating mothers is homemakers by occupation. The median age of the mothers [pregnant and lactating] is 22 years [95% CI: 22 to 23]. The median number of family members in each family is 4 [95% CI: 4.0 to 4.0].

As given in Table 2, about 53% of mothers felt importance to know the health of the baby and 33.9% felt important to know the growth of the baby. Out of all mothers 11.5% [95% CI: 9.1% to 14.5%] are not having knowledge about the ANC. Out of all mothers only 1.1% [95% CI: 0.1% to 1.4%] do not have appropriate attitude regarding the place to undergo ANC and most of the mothers [98.9%] have right attitude of undergoing ANC in the hospital, 99.8% of the mothers underwent ANC in a hospital setting compared to only one mother who underwent ANC in Anganwadi centre.

Table 1: Demographic and social characteristics of pregnant and lactating mothers.

Characteristics (n)	Group	Frequency	Percent (%)	95% CI	
Mother occupational status (n=565)	Homemaker	464	82.12	78.75%	85.06%
	Working	101	17.88	14.94%	21.25%
Region (n=565)	Rural	304	53.8	49.6%	58.0%
	Urban	261	46.2	42.0%	50.4%
Religion (n=565)	Christian	157	27.8	24.2%	31.7%
	Hindu	372	65.8	61.7%	69.7%
	Muslim	36	6.4	4.6%	8.8%
Type of family (n=565)	Joint	56	9.9	7.6%	12.8%
	Nuclear	509	90.1	87.2%	92.4%
Motherhood status (n=565)	Lactating	312	55.2	51.0%	59.4%
	Pregnant	253	44.8%	40.6%	49.0%
	Sample size	**Range**	**Mean±SD(95% CI)**	**Median (95% CI)**	**Distribution**
Mother's age (in years)	565	15.0 to 38.0	22.9±3.4 [22.6 to 23.2]	22.0 [22.0 to 23.0]	Reject normality
Family members number	564	2.0 to 13.0	4.2±1.6 [4.1 to 4.4]	4 [4.0 to 4.0]	Reject normality

Table 2: KAP of pregnant and lactating mothers about ANC (n=565).

Characteristics (n)	Group	Frequency	Percent(%)	95% CI		p value
Is ANC needed or not?	No	20	3.5	2.2%	5.5%	0.001
	Yes	545	96.5	94.5%	97.8%	
What is the importance of ANC?	Baby and mother health condition	36	6.4	4.6%	8.8%	Chi-squared:43.404; df: 8; <0.001
	Baby growth	135	23.9	20.5%	27.7%	
	Growth of baby and any pregnancy complications	10	1.8	0.9%	3.3%	
	Growth of baby and any pregnancy complications	1	0.2	0.0%	1.1%	
	Growth and development of baby	1	0.2	0.0%	1.1%	
	Growth and health of baby	14	2.5	1.4%	4.2%	
	Helps for safe pregnancy and safe delivery	2	0.4	0.1%	1.4%	
	No knowledge	65	11.5	9.1%	14.5%	
	To know health of baby	300	53.1	48.9%	57.3%	
	To know weight of the baby	1	0.2	0.0%	1.1%	
Where should a pregnant woman undergo ANC?	Anganwadi	4	0.7	0.2%	1.9%	Chi-squared: 28.915; df: 4; <0.0001
	Government hospital	28	5.0	3.4%	7.2%	
	Hospital	522	92.4	89.8%	94.4%	
	No knowledge	3	0.5	0.1%	1.7%	
	Private hospital	8	1.4	0.7%	2.9%	
Where do you want to go for ANC?	Anganwadi	4	0.7	0.2%	1.9%	Chi-squared:28.663; df: 4; <0.0001
	Government hospital	28	5.0	3.4%	7.2%	
	Hospital	523	92.6	90.0%	94.5%	
	No knowledge	2	0.4	0.1%	1.4%	
	Private hospital	8	1.4	0.7%	2.9%	
Where did you undergo ANC?	Anganwadi	1	0.2	0.0%	1.1%	Chi-squared:101.597; df: 4; <0.0001
	DR PISMS and RF	205	36.3	32.3%	40.4%	
	Government hospital	102	18.1	15.0%	21.5%	
	Hospital	180	31.9	28.1%	35.9%	
	Private hospital	77	13.6	11.0%	16.8%	
From which GA (weeks) first ANC is needed?	10	1	0.2	0.0%	1.1%	
	12	276	48.8	44.7%	53.1%	
	16	5	0.9	0.3%	2.2%	
	20	45	8.0	5.9%	10.6%	
	4	19	3.4	2.1%	5.3%	
	6	1	0.2	0.0%	1.1%	
	8	168	29.7	26.0%	33.7%	
	NK	50	8.8	6.7%	11.6%	
From which GA (weeks) do you wish to have first ANC?	10	2	0.4	0.1%	1.4%	
	12	293	51.9	47.7%	56.0%	
	16	7	1.2	0.5%	2.7%	
	20	39	6.9	5.0%	9.4%	
	4	18	3.2	2.0%	5.1%	
	6	2	0.4	0.1%	1.4%	
	8	166	29.4	25.7%	33.4%	
	NK	38	6.7	4.9%	9.2%	
At which GA (weeks) of pregnancy did you have first ANC?	4	17	3.0	1.8%	4.9%	Chi-squared: 25.468; df: 9, 0.002
	6	4	0.7	0.2%	1.9%	
	8	192	34.0	30.1%	38.1%	
	10	2	0.4	0.1%	1.4%	
	12	291	51.5	47.3%	55.7%	
	14	1	0.2	0.0%	1.1%	
	16	18	3.2	2.0%	5.1%	
	20	34	6.0	4.3%	8.4%	
	24	2	0.4	0.1%	1.4%	
	28	4	0.7	0.2%	1.9%	
Who checked you in ANC?	ANM	1	0.2	0.0%	1.1%	
	MBBS	1	0.2	0.0%	1.1%	
	Nurse	1	0.2	0.0%	1.1%	
	OBG	562	99.5	98.3%	99.9%	

About the knowledge regarding the GA of pregnancy 8.8% [95% CI: 6.7% to 11.6%] do not have any knowledge. Out of the mothers10.5% had ANC after 12 weeks of gestation. Out of all the mothers 2.3% [95% CI: 1.3% to 4.0%] felt that three ANC's are needed and no knowledge about the number of ANC is observed in 21.6% [95% CI: 18.3 to 25.3%] mothers. Similar observation was found in relation to the attitude of the mothers about the number of ANC's which mother wishes to undergo. About 7% of the mothers underwent ANC's less than four. Most of the mothers 95.5% [95% CI: 98.3% to 99.9%] underwent ANC by OBG. There is no significant regional difference between pregnant and lactating mothers. There is significantly more number of lactating mothers than pregnant mothers though the difference is marginal. There is a significant difference between pregnant and lactating mothers in relation to knowledge about the need for ANC. Out of all the mothers 23.7% [95% CI: 20.3% to 27.5%] are not having knowledge about personal hygiene. The source of advice about the personal cleanliness about 61% [95% CI: 56.2% to 65.6%] is self and 29.7% [95% CI 25.5% to 34.3%] received information from OBG and others 9% from other sources. The mothers who are not implementing personal cleanliness is about 7.3% [95% CI: 5.3% to 9.8%] because lack of knowledge (Table 3).

Table 3: KAP of pregnant and lactating mothers about personal hygiene.

Characteristics (n)	Group	Pregnant	Lactating	Frequency	Percent(%)	95% CI		p value
Are you advised personal cleanliness or not?(n=565)	No	26	108	134	23.7	20.3%	27.5%	<0.001
	Yes	227	204	431	76.3	72.5%	79.7%	
Who advised you personal cleanliness? (n=431)	Anganwadi worker	9	12	21	4.9	3.1%	7.5%	X^2 value=36.722, df=5 <0.001
	Family members	0	1	1	0.2	0.0%	1.5%	
	Mother	12	2	14	3.2	1.9%	5.5%	
	Nurse	2	2	4	0.9	0.3%	2.5%	
	OBG	42	86	128	29.7	25.5%	34.3%	
	Self	162	101	263	61.0	56.2%	65.6%	
Do you implement personal cleanliness? (n=565)	No			41	7.3	5.3%	9.8%	
	Yes			524	92.7	90.2%	94.7%	

Table 4: KAP of pregnant and lactating mothers about maternal nutrition.

Characteristics (n)	Group	Frequency	Percent (%)	95% CI	
Are you advised about mother' nutrition? (n=565)	No	27	4.8	3.2%	7.0%
	Yes	538	95.2	93.0%	96.8%
Who advised you about mother's nutrition? (n=538)	Anganwadi worker	37	6.9	5.0%	9.4%
	Doctor	1	0.2	0.0%	1.2%
	Family members	1	0.2	0.0%	1.2%
	Mother	21	3.9	2.5%	6.0%
	Nurse	5	0.9	0.3%	2.3%
	OBG	387	71.9	67.9%	75.7%
	Self	86	16.0	13.0%	19.4%
Did you implement measures of maternal nutrition? (n=565)	No	20	3.5	2.2%	5.5%
	Yes	545	96.5	94.5%	97.8%

Most of the mothers 95.2% [95% CI:93.0% to 96.8%] receiving advice regarding maternal nutrition. In 71.9% [95% CI: 67.9% to 75.7%] receiving advice from OBG. Most of the mothers 96.5% [95% CI:94.5% to 97.8%] are implementing nutritional advice. Almost all the mothers are having correct knowledge about the type of the diet to be taken during pregnancy and lactation and are implementing it (Table 4). As shown in Table 5, 28% [95% CI: 23.1% to 33.4%] out of all neonates [n=312] are not vaccinated. Among the mothers who did not get these babies vaccinated are [n=87].64% [95% CI: 52.9% to 74%] are not having knowledge regarding neonatal vaccination and in 36% [95% CI: 26.0% to 47.7%] babies are in NICU care.

Table 6 presents the KAP of pregnant and lactating mothers about neonatal infection prevention. Out of all pregnant and lactating mothers 28.7% [95% CI: 25.0% to 32.6%] did not receive advice regarding infection prevention in neonates. The advice regarding neonatal infection prevention is about 42.6% obtained either by paediatrician or obstetrician and 42.6% [95% CI: 34.9 to 50.6%] of the mothers obtained the knowledge on their own. The proportion of lactating mothers who are advised neonatal infection prevention are 31.1% [95% CI: 26.2% to 36.4%] and the proportion of lactating mothers implementing neonatal infection prevention are 34% [95% CI: 28.8% to 39.6%]. The knowledge of the age of the child during which there is a highest risk of infection exists is not known to 97.5% [95% CI: 95.8% to 98.6%] of mothers. About 9% of pregnant and lactating mothers feel that conventional bath to a neonate will be given below 5 days after birth.

Table 5: KAP of pregnant and lactating women about immunization.

Characteristics (n)	Group	Pregnant	Lactating	Frequency	Percent (%)	95% CI		p value
Are you advised about baby's immunization? (n=565)	No	82	62	144	25.5	22.0%	29.3%	0.001
	Yes	171	250	421	74.5	70.7%	78.0%	
Who advised you about baby's immunization? (n=421)	Anganwadi worker	9	20	29	6.9	4.7%	9.9%	X^2 value 175.039; df - 8; <0.001
	ANM	0	1	1	0.2	0.0%	1.5%	
	Husband	1	0	1	0.2	0.0%	1.5%	
	Mother	8	4	12	2.9	1.6%	5.1%	
	Nurse	14	24	38	9.0	6.5%	12.3%	
	OBG	6	72	78	18.5	15.0%	22.6%	
	Paediatrician	13	98	111	26.4	22.3%	30.9%	
	Parents	1	0	1	0.2	0.0%	1.5%	
	Self	119	31	150	35.6	31.1%	40.4%	
Did you get your baby vaccinated?* (n=311)	No			87	28.0	23.1%	33.4%	
	Yes			224	72.0	66.7%	76.9%	
If baby is not vaccinated what is the reason?* (n=86)	In NICU care			31	36.0	26.0%	47.1%	
	No knowledge			55	64.0	52.9%	74.0%	
Did you get vaccinated during pregnancy? (n=565)	No			10	1.8	0.9%	3.3%	
	Yes			555	98.2	96.7%	99.1%	
If not vaccinated during pregnancy what is the reason? (n=10)	At fourth month			7	70.0	34.8%	93.3%	
	No knowledge			3	30.0	6.7%	65.2%	

*Indicates measurements made by questioning the lactating mothers only.

As presented in Table 7, out of all pregnant and lactating mothers 20.4% [95% CI: 17.2 to 24.0%] didn't receive advice regarding breast feeding. The breast-feeding advice was given in only 45.1% [95% CI: 40.5% to 49.8%]. Mothers who are implementing breastfeeding as 31.6% [95% CI: 27.3 to 36.1%] through self-effect. Among the lactating mothers only 57.5% [95% CI: 56.5% to 68.5%] are giving rightly breast feeding on demand. Almost all the lactating mothers are having the correct knowledge of practicing colostrum to the baby and most are not giving prelacteals feeds. In very few babies where prelacteals feeds is given 2.2% [95% CI:1.0% to 4.8%]. One baby received honey.

Table 6: KAP of pregnant and lactating mothers about neonatal infection prevention.

Characteristics(n)	Group (n)	Frequency	Percent (%)	95% CI	
Are you advised about infection prevention in neonates? (n=565)	No	403	71.3	67.4%	75.0%
	Yes	162	28.7	25.0%	32.6%
Are you advised about infection prevention in lactating group?(n=312)	No	215	68.91	63.5%	73.8%
	Yes	97	31.09	26.2%	36.4%
Who advised you about infection prevention in newborn?(n=162)	Anganwadi worker	10	6.2	3.0%	11.1%
	ANM	1	0.6	0.0%	3.4%
	Mother	9	5.6	2.6%	10.3%
	Nurse	3	1.9	0.4%	5.3%
	OBG	38	23.5	17.2%	30.7%
	Paediatrician	31	19.1	13.4%	26.0%
	Parents	1	0.6	0.0%	3.4%
	Self	69	42.6	34.9%	50.6%
Did you implement neonatal infection prevention measures? *(n=312)	No	206	66.0	60.5%	71.3%
	Yes	106	34.0	28.8%	39.6%
Are you cleaning breast before feeding the baby? *(n=312)	No	24	7.7	5.1%	11.4%
	Yes	288	92.3	88.6%	94.9%
Do you cough or sneeze or talk loudly near the baby? *(n=311)	No	305	98.1	95.6%	99.2%
	Yes	6	1.9	0.8%	4.4%
Does everybody handle the baby? *(n=312)	No	237	76.2	71.1%	80.8%
	Yes	74	23.8	19.3%	29.0%
Do you or anyone kiss the baby? *(n=311)	No	261	83.9	79.4%	87.8%
	Yes	50	16.1	12.3%	20.7%
Do you wash hands before touching the baby?*(n=312)	No	42	13.5%	10.0	17.9%
	Yes	270	86.5%	82.2	90.1%
What substance do you use to wash hands before touching the baby?* (n=271)	Dettol	36	13.3%	9.5	17.9%
	Sanitizer	1	0.4%	0.0	2.0%
	Soap	107	39.5%	33.6	45.6%
	Water	127	46.9%	40.8	53.0%
What material do you use to dry hands? *(n=146)	Cloth	144	98.6%	95.1	99.8%
	Towel	2	1.4%	0.2	4.9%
Do you wash hands after using toilet?*(n=312)	Yes	312	100.0%	100.0	100.0%
What substance do you use to wash hands after visiting toilet? *(n=312)	Dettol	51	16.3%	12.5	21.0%
	Soap	231	74.0%	68.8	78.8%
	Water	30	9.6%	6.7	13.6%
Are there any pets in your house?*(n=312)	No	295	94.6%	91.3	96.7%
	Yes	17	5.4%	3.3	8.7%
If yes are they coming in contact with the present neonate? *(n=311)	No	311	100.0%	100.0	100.0%
When does a child have highest risk of infection during childhood? (n=565)	No knowledge	551	97.5%	95.8	98.6%
	One month	8	1.4%	0.7	2.9%
	One year	5	0.9%	0.3	2.2%
	Second month	1	0.2%	0.0	1.1%
What substance do you use to wash the present neonate clothes?* (n=309)	Comfort	1	0.3%	0.0	2.1%
	Dettol	89	28.8%	23.9	34.3%
	Hot water	1	0.3%	0.0	2.1%
	No knowledge	2	0.6%	0.1	2.6%
	Soap	210	68.0%	62.4	73.1%
	Surf	1	0.3%	0.0	2.1%
	Water	5	1.6%	0.6	4.0%

*Indicates measurements made by questioning the lactating mothers only.

Table 7: KAP of pregnant and lactating mothers about breast feeding.

Characteristics (n)	Group	Frequency	Percent (%)	95%CI	
Advised breast feeding or not (n=565)	No	115	17.2	17.2%	24.0%
	Yes	450	76.0	76.0%	82.8%
Advice of breast feeding: by whom? (n=450)	Anganwadi worker	33	5.2	5.2%	10.2%
	Mother	35	5.6	5.6%	10.8%
	Nurse	7	0.7	0.7%	3.3%
	OBG	203	40.5	40.5%	49.8%
	Paediatrician	29	4.4	4.4%	9.2%
	Parents	1	0.0	0.0%	1.4%
	Self	142	27.3	27.3%	36.1%
Implementation of breast feeding *(n=312)	No	1	0.3	0.0%	2.1%
	Yes	311	99.7	97.9%	100.0%
Implementation of breast feeding, if no why? *(n=1)	No knowledge	1	100.0	2.50%	100.00%
Breast fed baby on:* (n=312)	Demand	197	57.5	57.5%	68.5%
	Schedule	115	31.5	31.5%	42.5%
Did you feed colostrum? *(n=312)	No	10	3.2	1.6%	6.0%
	Yes	302	96.8	94.0%	98.4%
If colostrum is not fed: why?* (n=11)	Anal Atresia	1	9.1	0.2%	41.3%
	Baby in NICU	9	81.8	48.2%	97.7%
	Perinatal asphyxia with death	1	9.1	0.2%	41.3%
Did you give any pre-lacteal feeds? *(n=312)	No	305	97.8	95.2%	99.0%
	Yes	7	2.2	1.0%	4.8%
If yes, specify the pre-lacteal feed given.*(n=7)	Formula feed	6	85.7	42.1%	99.6%
	Honey	1	14.3	0.4%	57.9%
What is the first feed to be given to baby? (n=565)	Breast milk	563	99.6	98.6%	99.9%
	Honey	1	0.2	0.0%	1.1%
	NK	1	0.2	0.0%	1.1%
What type of first feed did you give to baby? (n=312)*	Breast milk	306	98.1	95.7%	99.2%
	Formula feed	2	0.6	0.1%	2.6%
	Honey	1	0.3	0.0%	2.1%
	Not given	3	1.0	0.2%	3.0%
At what time (hours) first feed is to be given to the baby after birth? (n=565)	0.083	3	0.5	0.1%	1.7%
	0.166	2	0.4	0.1%	1.4%
	0.25	5	0.9	0.3%	2.2%
	0.3	1	0.2	0.0%	1.1%
	0.5	55	9.7	7.5%	12.6%
	1	181	32.0	28.2%	36.1%
	1.5	2	0.4	0.1%	1.4%
	2	90	15.9	13.1%	19.3%
	24	1	0.2	0.0%	1.1%
	3	8	1.4	0.7%	2.9%
	4	16	2.8	1.7%	4.7%
	5	1	0.2	0.0%	1.1%
	6	1	0.2	0.0%	1.1%
	Immediately	112	19.8	16.7%	23.4%
	NK	87	15.4	12.6%	18.7%
How many months of exclusive breast feeding did the previous baby receive? (n=265)	1	2	0.8	0.1%	2.7%
	3	3	1.1	0.2%	3.3%
	4	1	0.4	0.0%	2.1%
	5	6	2.3	0.8%	4.9%
	6	80	30.2	24.7%	36.1%
	7	2	0.8	0.1%	2.7%
	8	6	2.3	0.8%	4.9%
	9	6	2.3	0.8%	4.9%
	10	18	6.8	4.1%	10.5%
	11	1	0.4	0.0%	2.1%
	12	85	32.1	26.5%	38.1%
	14	4	1.5	0.4%	3.8%
	18	30	11.3	7.8%	15.8%
	24	19	7.2	4.4%	11.0%
	36	2	0.8	0.1%	2.7%

*Indicates measurements made by questioning the lactating mothers only.

Out of all pregnant and lactating mothers 43.7% are having the correct knowledge of starting feed before one hour after birth. Out of all lactating mothers only 39.7% are having correct practice of staring feed before one hour of birth. Majority are not having appropriate knowledge regarding the frequency with which mother's milk has to be given in about 37.7%. Only 14.7% are implementing appropriate frequency of breast feeding; 26.1% are having appropriate knowledge regarding duration in each breast feeding session; 28.5% are having appropriate practice and only 30.2% [95% CI: 24.7% to 36.1%] could practice correct duration of exclusive breast feeding. 64% of the mothers have continued EBF beyond 6months i.e. delayed weaning. The proportions of mothers who are EBF are only 4.6%. Out of 565 pregnant and lactating 60.9% [95% CI: 56.7% to 64.9%] did not receive cord care. Implement of cord care was not done in 48.4% [95% CI: 42.7% to 54.1%] (Table 8).

As shown in Table 9, 44.8% [95% CI: 40.6% to 49%] are not advised regarding keeping baby warm and 49% of mothers are advices by both obstetrician and paediatrician. 31.1% [95% CI: 26.1% to 36.6%] are not practicing keeping baby warm. KMC is not known to 89.9% [95% CI: 87.1% to 92.2%]. Appropriate purpose of keeping the baby warm i.e. to prevent hypothermia is 15.4% [95% CI: 12.6% to 18.7%] of the mothers. Almost all mothers are wrapping the babies with some sort of clothing. The proportion of mothers not covering babies hands, head, legs and trunk are 18.3% [95% CI to 14.2% to 23.1%], 7.7% [95% CI: 5.1% to 11.4%], 6.1% [95% CI: 3.8% to 9.5%] respectively.

Majority of mothers 74.3% [95% CI: 70.5% to 77.8%] were not advised danger signs in neonatal period. There is significantly more number of lactating mothers than pregnant mothers thought the difference is marginal. There is no significant regional difference between pregnant and lactating mothers.

DISCUSSION

The present study provides holistic information about KAP in both pregnant and lactating mothers about new born care.

In the present study, there is no considerable deficiency in the knowledge about the need for ANC among the mothers of this study. In the present study adequate number of ANC's is taken as eight as suggested by WHO.[6] Nearly 40% of the mothers having inadequate knowledge about the number of ANC are required. In other studies taking four ANC's as sufficient as about 50% of mothers are deficient about the knowledge regarding the number of ANC's.[7,8] According to WHO norms about the number of ANC's the deficiencies in other studies more than that was observed. Unless a mother is clear about the number of ANC's she has to undergo for the well being of the baby, this may result in missing of foetal health sometimes. There is a need even prior to pregnancy visit of ANC to stress about the importance of number of ANC's. There are considerable deficiencies in practice in the number of ANC's in the present study and in other studies.[7-9]

Table 8: KAP of pregnant and lactating mothers about umbilical cord care.

Characteristics (n)	Group	Frequency	Percent (%)	95% CI		p value
Advised cord care (n=564)	No	344	60.9	56.7%	64.9%	0.004
	Yes	221	39.1	35.1%	43.3%	
Advised cord care by whom? (n=221)	Anganwadi worker	10	4.5	2.2%	8.2%	Chi-square:51.569; df: 6; <0.001
	Family members	1	0.5	0.0%	2.5%	
	Mother	19	8.6	5.3%	13.1%	
	Nurse	5	2.3	0.7%	5.2%	
	OBG	78	35.3	29.0%	42.0%	
	Paediatrician	21	9.5	6.0%	14.2%	
	Self	87	39.4	32.9%	46.1%	
Implementation of cord care* (n=312)	No	151	48.4	42.7%	54.1%	
	Yes	161	51.6	45.9%	57.3%	
Implementation of cord care, if no why?* (n=151)	No knowledge	151	100.0	100.0%	100.0%	
Application of any substance on umbilical cord.* (n=312)	No	300	96.2	93.2%	97.9%	
	Yes	12	3.8	2.1%	6.8%	
If yes, substance applied on cord* (n=12)	Coconut oil	11	91.7	61.5%	99.8%	
	Oil	1	8.3	0.2%	38.5%	

*Indicates measurements made by questioning the lactating mothers only.

Table 9: KAP of pregnant and lactating women about baby warmth.

Characteristics(n)	Group	Frequency	Percent (%)	95%CI	p value	
Are you given advice regarding keeping baby warm? (n=565)	No	253	44.8	40.6%	49.0%	0.001
	Yes	312	55.2	51.0%	59.4%	
Who gave you advice about keeping baby warm? (n=312)	Anganwadi worker	16	5.1	3.1%	8.4%	Chi-square:78.077; df: 6; <0.001
	Mother	22	7.1	4.6%	10.6%	
	Nurse	7	2.2	1.0%	4.8%	
	OBG	113	36.2	30.9%	41.9%	
	Paediatrician	40	12.8	9.4%	17.2%	
	Parents	1	0.3	0.0%	2.1%	
	Self	113	36.2	30.9%	41.9%	
Did you implement measures for keeping baby warm?*(n=312)	No	97	31.1	26.1%	36.6%	
	Yes	215	68.9	63.5%	74.0%	
If no what is the reason for not implementing measures to keep baby warm?*(n=97)	No knowledge	97	100.0	100.0%	100.0%	
Is the baby's room warm?* (n=312)	No	1	0.3	0.0%	2.1%	
	Yes	311	99.7	97.9%	100.0%	
Are there fans or AC in baby's room?*(n=312)	No	135	43.3	37.7%	49.0%	
	Yes	177	56.7	51.0%	62.3%	
If yes specify, which one.*(n=177)	Fans	177	100.0	100.0%	100.0%	
Do you know what KMC is? (n=565)	No	508	89.9	87.1%	92.2%	0.001
	Yes	57	10.1	7.8%	12.9%	
Why should the baby be kept warm? (n=565)	For baby health	10	1.8	0.9%	3.3%	
	Growth of baby	2	0.4	0.1%	1.4%	
	No knowledge	337	59.6	55.5%	63.7%	
	To gain weight	2	0.4	0.1%	1.4%	
	To prevent cold	54	9.6	7.3%	12.4%	
	To prevent cold& infections	1	0.2	0.0%	1.1%	
	To prevent hypothermia	87	15.4	12.6%	18.7%	
	To prevent hypothermia and infections	1	0.2	0.0%	1.1%	
	To prevent infections	63	11.2	8.7%	14.1%	
	To prevent jaundice	1	0.2	0.0%	1.1%	
	To prevent weight loss	7	1.2	0.5%	2.7%	
What material is used to wrap the baby?* (n=312)	Cloth	75	24.0	19.5%	29.2%	
	Clothes	77	24.7	20.1%	29.9%	
	Clothes, socks, muffins	1	0.3	0.0%	2.1%	
	Cotton clothes	148	47.4	41.8%	53.1%	
	No knowledge	3	1.0	0.2%	3.0%	
	Soft cloth	6	1.9	0.8%	4.3%	
	Sweater	1	0.3	0.0%	2.1%	
	Towel	1	0.3	0.0%	2.1%	
Do you cover baby's hands or not?*(n=312)	No	57	18.3	14.2%	23.1%	
	Yes	255	81.7	77.0%	85.9%	
Do you cover baby's head or not?*(n=312)	No	24	7.7	5.1%	11.4%	
	Yes	288	92.3	88.6%	94.9%	
Do you cover baby's legs or not?*(n=312)	No	46	14.7	11.1%	19.3%	
	Yes	266	85.3	80.8%	89.0%	
Do you cover baby's trunk or not?*(n=312)	No	19	6.1	3.8%	9.5%	
	Yes	293	93.9	90.5%	96.2%	

*Indicates measurements made by questioning the lactating mothers only.

Table 10: KAP of pregnant and lactating mothers about danger signs and neonatal condition.

Characteristics(n)	Group(n)	Frequency	Percent (%)	95%CI	
Were you advised about danger signs in relation with present neonate? (n=565)	No	420	74.3	70.5%	77.8%
	Yes	145	25.7	22.2%	29.5%
Age of deaths of expired children (n=16)	Child death	2	12.50	1.55%	38.35%
	Infant death	1	6.25	0.16%	30.23%
	Neonatal death	13	81.25	54.35%	95.95%

Very small proportion of mothers are giving first feed to their babies within one hour after birth in the present study as well as other studies by Hajela and Gul et al except the study done by Misgna et al.[10-12] This is a very important deficiency in feeding the baby which needs to be corrected by proper health education. There is a deficiency in the study in practicing the breast feeding of the baby on demand.

Most of the mothers do not have knowledge about that KMC is in the present study. Similar observation was also noted in the study done by Amolo et al (6.8%). About 30 to 40% of the mothers are not practicing the measures needed to keep the baby warm in this study. On contrast to this, study by Amolo et al showed better practice about KMC (97.1%).[13]

Nearly 75% of mothers in the present study do not know about the neonatal danger signs. This was in accordance with the findings of Nigatu et al (18.2%).[14] In our study, about 50% of the mothers do not have correct knowledge about first bath given time (23.05%). This was similar to the findings of Gul et al (14%).[15] On contrast to this, Amolo et al study showed better knowledge of the mothers regarding first bath given time.[13] In study by Misgna et al, about 75% of the mothers had good knowledge about the same.[12] In our study, about 50% of the mothers are not practicing hand washing before touching the baby. Hajela et al in his study showed that about 81.2% of the mothers had a knowledge about practicing hand washing before touching the baby.[10]

In the present study, when compared to other studies very less proportion of mothers are applying some substance on the umbilical cord of the neonate which is reflective of better practice in these mothers (3.8%).[12,13]

The knowledge and practice of mothers in the study regarding neonatal immunization is still having considerable deficiency by about 25% compared to WHO suggested norms. Similar deficiencies are also found in other studies.[16,17]

As this is questionnaire-based survey of KAP, accuracy and precision of some measurements may be suboptimal. Nevertheless, this brings into awareness of health care system the important defects in health education and counselling.

CONCLUSION

In the present study, considerable deficiency in the knowledge nearly 45% and practices nearly 40%, related to the number of ANC's are observed. The proportion of mothers receiving baby's immunization advice from obstetrician is 18.5% and from paediatrician is 26.4%. This indicates the need for systematic and planned health education by the paediatrician and obstetrician. Neonatal infection prevention advice for mothers was received from obstetrician 23.5% and 19.1% from paediatrician. Breast feed on demand is not practiced in nearly 40% of mothers. The practice of staring first breast feed within one hour is not implemented about 88% of mothers.

The findings of the study conclude that there is a need for systematic and planned health education by the paediatrician and obstetrician to improve knowledge among mothers about neonatal health care. Counselling and health education of mothers regarding breast feeding is very essential to improve the immunity of the newborns. Improving quality of and access to, perinatal care services and home visits using the urban health extension workers at the community level should be encouraged.

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