

IMPACT OF HEALTH EDUCATION ON THE KNOWLEDGE OF MOTHERS ON NEWBORN CARE PRACTICES- A STUDY DONE IN A TERTIARY CARE CENTRE

Basa Akkamamba¹, Pothula Padmanalini², Sajja Sunil³

¹Assistant Professor, Department of Obstetrics and Gynaecology, Rangaraya Medical College/Government General Hospital, Kakinada.

²Assistant Professor, Department of Obstetrics and Gynaecology, Rangaraya Medical College/Government General Hospital, Kakinada.

³Senior Resident, Department of Paediatrics, Rangaraya Medical College/Government General Hospital, Kakinada.

ABSTRACT

BACKGROUND

Cultural practices and beliefs of newborn care are deep rooted in the community. Some of them are harmful and can endanger the life of a newborn. It is important to identify and educate about these harmful practices to reduce neonatal mortality. This study was conducted to assess the knowledge of mothers on current newborn care practices and to evaluate the impact of health education on the knowledge of mothers on newborn care practices in a tertiary hospital.

MATERIALS AND METHODS

This study was undertaken on 476 postnatal mothers in Government General Hospital, Kakinada during September 2016 to December 2016. A pre-tested questionnaire was used to assess the knowledge on newborn care and cultural practices of these mothers. This is followed by health education on correct newborn care practices and post-test assessment of improvement in knowledge was done after one month.

RESULTS

Knowledge of the mothers is improved in each practice like colostrum feeding (87.6% vs. 98.7%), prelacteal feeds (68.4% vs. 92.4%), exclusive breast-feeding (62.4% vs. 87.5%), first bath (63.3% vs. 91%), substance application to cord (67.3% vs. 93.1%), oil massage (86.9% vs. 98%), oil instillation (68.7% vs. 88.8%), breast-feeding in maternal illness (61.2% vs. 89%), breast-feeding in sick baby (81% vs. 96%), kajal to eye (6% vs. 14%), gripe water (37.2% vs. 60%) and pacifier usage (43.5% vs. 79.8%) after health education intervention. Mean knowledge scores are improved from 7.3 (pre-test) to 9.8 (post-test). Paired t test was applied and p value is < 0.001, which is statistically significant.

CONCLUSION

Health education is a cost-effective intervention to bring out behaviour change to curtail harmful practices and to promote healthy newborn care practices in the society.

KEYWORDS

Cultural Practices, Newborn Care, Health Education.

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BACKGROUND

The traditional practices are time honoured rituals and beliefs that are prevalent in a community. Every community has its own way of rearing children which is ingrained in the society through traditions established over centuries. They pass on from one generation to another. Most of these practices are based on core knowledge and wisdom, but some of them have emerged purely from intuition, superstitions and unfounded beliefs. Some of these are potentially life threatening and can endanger the life of a newborn.

Neonatal mortality contributes to 38% of estimated 10.5 million under-five deaths occurring all over the world.^[1]

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Corresponding Author:

Dr. Sajja Sunil,

Room No. 120,

RMC-PG-Hostel, Opposite GGH,

Kakinada-533001, E. G. Dist.,

Andhra Pradesh.

E-mail: sunilsajja27@gmail.com

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The causes of neonatal mortality are not only medical but also sociocultural.^[2] Childbirth and newborn care is governed by many traditional practices.^[3] These may be beneficial, inconsequential or harmful.^[4] Cultural beliefs and practices with regard to perception of newborn care are deep rooted in Indians and are not universal. They vary among different communities; religions and geographical parts of the country. It is believed that encouraging the useful traditional practices and discouraging harmful practices by proper health education can promote healthy newborn rearing practices in the community and may reduce neonatal mortality.

MATERIALS AND METHODS

Knowledge and practices of the study population regarding various local sociocultural beliefs are assessed using a pre-structured, pre-tested questionnaire in local language. Those mothers who cannot read and write are asked questions in local language and answers were noted. Then, a health educator imparts knowledge on correct newborn care practices. A post test was conducted after one month to assess for any improvement in the knowledge regarding newborn care practices.

Each correct response was given a score of 1 and total score is calculated before and after health education. Pre and post-test mean scores with standard deviations are calculated. McNemar test and paired t test were applied to identify statistical significance. X^2_M value >3.84 is taken as critical value, which corresponds to $p < 0.05$. The t-statistic value is compared to t_{n-1} distribution using t-distribution tables. Data was analysed using SPSS version 20.

Study Design

Uncontrolled clinical trial (intervention is health education).

RESULTS

Demographic Variable	Number	Percentage %
Age of the Mother		
<19	113	23.7
20-24	328	68.9
25-29	31	6.5

>30	4	0.8
Religion		
Hindu	367	77.1
Christian	78	16.3
Muslim	31	6.51
Education Status		
Illiterate	112	23.5
Literate	364	76.4
Socioeconomic status		
II	67	14
III	210	44.1
IV	158	33.2
V	41	8.6
Type of family		
Nuclear	290	61
Joint	186	39

Table 1. Demographic Profile of Study Population

Knowledge on Varies Cultural Practices	Mothers having Correct Knowledge				McNemar X ²	p value
	Before Health Education Pre-test		After Health Education Post-test			
	Number	%	Number	%		
Colostrum feeding	417	87.6	470	98.7	46.04	< 0.05
Prelacteal feeds	326	68.4	440	92.4	89.07	< 0.05
Exclusive breast-feeding	297	62.4	417	87.6	74.2	< 0.05
Bath immediately after birth	301	63.3	433	91	94.69	< 0.05
Application of substances to cord	320	67.3	443	93.1	97.6	< 0.05
Oil massage to baby	414	86.9	466	98	48.2	< 0.05
Oil instillation in ears/nose	327	68.7	423	88.8	56.19	< 0.05
Breast-feeding during maternal illness	291	61.2	424	89	90.7	< 0.05
Breast-feeding if baby is sick	385	81	457	96	50.82	< 0.05
Applying kajal to eyes	29	6	67	14.1	26.25	< 0.05
Gripe water administration	177	37.2	286	60	48.89	< 0.05
Pacifier usage	207	43.5	380	79.8	95.9	< 0.05
Table 2. Knowledge on Various Practices before and after Health Education						

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Level Of Knowledge	Pre-test		Post-test	
	Number	Percentage	Number	Percentage
Poor (0-5)	105	22%	2	0.40%
Fair (6-8)	281	59%	19	4%
Good (9-12)	90	18.90%	455	95.60%
Mean Score	7.304		9.8	
Standard Deviation	1.589		0.829	
Paired t test value	t statistic: 39.91, p value < 0.001			
Table 3. Knowledge Scores of Mothers				

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	N	Mean Difference	Standard Deviation SD	Standard Error Mean SE (d)	T	df	p
Difference	476	2.4894	1.36493	0.0623	39.91	475	< 0.001

Table 4. Paired t test Output

A total of 476 mothers are included in the study. Table 1 shows the demographic variables of study population. 112 (23.7%) are below 19 years, 328 are 20-24 years, 31 are 25-29 years and 4 (0.8%) are above 30 years. 367 (77.1%) mothers are Hindus, 78 (16.3%) are Christians and 31 (6.51%) are Muslims. 112 are illiterate, 364 (76.4%) are educated. 67 mothers (14%) belong to class II, 210 (44.1%) belong to class III, 158 (33.2%) belong to class IV and 41

(8.6%) belong to class V socioeconomic status. 290 (61%) belong to nuclear and 186 (39%) belong to joint family. The knowledge of the mothers before and after health education is given in Table 2.

Knowledge is improved in each practice like colostrum feeding (87.6% vs. 98.7%), prelacteal feeds (68.4% vs. 92.4%), exclusive breast-feeding (62.4% vs. 87.5%), first bath (63.3% vs. 91%), substance application to cord (67.3% vs.

93.1%), oil massage (86.9% vs. 98%), oil instillation (68.7% vs. 88.8%), breast-feeding in maternal illness (61.2% vs. 89%), breast-feeding in sick baby (81% vs. 96%), kajal to eye (6% vs. 14%), gripe water (37.2% vs. 60%) and pacifier usage (43.5% vs. 79.8%) after health education intervention. McNemar chi-square test showed this improvement is statistically significant with p value <0.05 .

Table 3 shows mean knowledge scores of study population before and after health education intervention. In this study, 22% of mothers have scores of 0-5, 59% of mothers have knowledge scores of 6-8 and 18.9% of mothers have scores 9 and above. After health education, 95.6% of mothers have good knowledge scores (9-12). Mean knowledge score is improved from 7.304 before to 9.80 after health education.

Table 4 shows the output of paired t test. Mean difference is 2.489, Standard deviation of the differences (Sd) is 1.3649 and Standard Error of the mean differences is SE (d) is 0.0623. The t -statistic value is 39.91. Using tables of t distribution, p value is <0.001 , which is statistically significant.

DISCUSSION

Colostrum is the first immune shot to the newborn. The use of colostrum and avoiding prelacteal foods are cornerstones for the establishment of exclusive breastfeeding for the first six months of age. Colostrum is discarded in some societies considering it dirty, indigestible and harmful. 87.6% of mothers are aware of colostrum feeding and gave colostrum in the present study (Table 2). Similar results are found by Nithin Kumar et al^[19] (92%) and Mamtarani et al^[29] (89.5%). Sartaj Ahmed et al^[16] conducted a study in urban slums of Meerut and reported low colostrum feeding practices (37.5%).

Prelacteal feed is the feed given to newborn before initiation of breast-feeding. This practice delays the initiation of breast-feeding and hampers the proper establishment and future successful breast-feeding. Prelacteal feeding is a common cultural practice and this can cause diarrhoea and electrolyte imbalance in the newborn. The custom of giving prelacteal feeds to baby is practised even outside India, as observed in studies from Pakistan^[5] (35%) and Botswana^[6] (49%). 31.5% of mothers believe that prelacteal feeds can be offered to newborn. This prevalence of prelacteal feeds in the present study is comparable to Ausvi Samina et al^[7] (32.9%) and Shreyash J Gandhi et al^[8] (32.1%). Higher rates are reported by P. Gupta et al^[9] (50.6%) and Devang Raval et al^[10] (61.9%).

"When there is illness or malnutrition, breast-feeding may be a lifesaving gift, when there is poverty, it may be the only gift"^[11]- this emphasises the importance of breast-feeding in low socioeconomic countries like India. Exclusive breastfeeding is identified as the single most effective preventive intervention, which could prevent 13-16% of all childhood deaths in India.^[12] In the present study, 62.4% of mothers have knowledge on exclusive breast-feeding. This is comparable to Prateek et al^[13] (67.4%) and high when compared to Abhay Bagul et al^[14] (37%).

In South Asian region, there is a belief that the mother and her baby are polluted from the birth process which can be removed by bathing.^[15] This can make the newborn vulnerable to hypothermia. The practice of bathing newborn immediately after birth in present study is 36.7% and 37.8%

in Shreyash J Gandhi et al. [8] Sartaj Ahmad et al^[16] reported very high prevalence (76.6%) of this harmful practice.

The World Health Organization recommends dry cord care (where nothing is placed on cord stump unless indicated).^[17] Application of substances can lead to umbilical cord infection (omphalitis) and is a risk factor for neonatal sepsis and mortality in low-resource settings like India. 32.8% of mothers are unaware of dry cord care. This observation is similar to Padiyath M et al,^[18] in which application of substance is 35%, whereas Nithin Kumar et al^[19] reported higher (51.3%) practice rates.

Oil massaging of newborn has been a custom in India for ages. Topical application has been shown to improve the skin barrier function, thermoregulation due to decreased transepidermal water loss. The practice of oil massage is 86.9% in the present study. Nithin Kumar et al^[19] reported this practice in 98.7% of mothers. Oil instillation practice is a health hazard and is a common cause of mortality and morbidity in infants in South India.^[20]

Oil instillation pneumonia – A social evil.^[21] This practice of oil instillation is a local custom for apparently cleaning purpose and continues to be a major health challenge. In the present study, 31.3% of mothers believe that oil can be instilled in to nose and ears. This is high when compared to Padiyath M et al^[18] (19%) and low compared to Nitin Joseph et al^[20] which reported this practice by 56.2% of mothers.

Breast-feeding the baby is not contraindicated during minor illness in the mother. The belief that, "breast milk becomes harmful, because of mystical/evil forces and the illness is transmitted to baby through mother's milk" made mothers stopping breast milk to babies when they are ill. The prevalence of this harmful practice increases the neonatal mortality. In this study, 61.2% of mothers have knowledge on breast-feeding during maternal illness which is comparable to Nithin Kumar et al^[19] (63.2%).

Breast-feeding needs to be continued during episodes of diarrhoea and sickness. This is due to misperception that "Evil eye" had contaminated breast milk. In the present study, 81% of mothers had correct knowledge on breast-feeding if baby is sick/had diarrhoea. This result is comparable to Nithin Kumar et al.^[19] (77.6%).

Applying kajal to the eye or face is age old traditional belief considered to ward off evil, with the added cosmetic benefit. However, its application to the eye can cause conjunctivitis, dacryocystitis and finger nail trauma.^[21] Most of commercially produced 'kajals' contain high lead. Studies revealed that kajal comprises of galena (PbS), minium (Pb3O4), etc. Prolonged application may cause excessive lead storage in the body, causing convulsions and anaemia.^[22] In the present study, 93.9% of mothers are practising kajal application to eyes. Nithin Kumar et al^[19] reported this practice in 91.4%.

Gripe water administration is a common problem in infants and remain as a significant challenge that thwarts exclusive breast-feeding. It is a non-prescription medicine used in the past for infantile colic till it was banned in most of developed countries.^[23] But still it is ubiquitous in all pharmacies in India. It is believed that alcohol in gripe water produces soothing effect, masking the symptoms of major illness. In the present study, 62.8% of mothers believe that gripe water can be administered to baby. This observation is similar to studies of Keerthi Jain et al,^[24] (64.18%) and Padiyath M et al^[18] (61%).

WHO – ten steps to successful breast-feeding recommends total avoidance of artificial teats or pacifiers to breast-feeding infant. Offering pacifier instead of breast to calm the infant may lead to infrequent episodes of breastfeeding and as a consequence reduces breast milk production and shortens duration of breast-feeding. In the present study, 56.5% of mothers say pacifier can be used. Antonio J et al^[25] reported 60% and CR Howard et al^[26] reported 68% usage of pacifier.

In the present study, after health education, there is an increase in the knowledge of 11% (from 87.6% to 98.7%) of mothers regarding colostrum feeding, whereas it is 19% in A Galhotra et al^[27] and 80% increase in Vani Sethi et al.^[28]

Knowledge on prelacteal feeding is improved from 68.4% to 92.4% and this is statistically significant. This is in contrast to A Galhotra et al^[27] where results were not statistically significant.

Knowledge on exclusive breast-feeding is improved from 62.4% to 87.6% and this difference is statistically significant. This study results on exclusive breast-feeding and health education are similar to A Galhotra et al^[27] and Vani Sethi et al.^[28]

Knowledge on first bath immediately after birth (63.5% vs. 91%), substance application to cord (67.3% vs. 93.1%), oil massage (86.9% vs. 98%), oil instillation in nose (68.7% vs. 88.8%), breast-feeding during maternal illness (61.2% vs. 89%), breast-feeding if baby is sick (81% vs. 96%), kaji application (6% vs. 14.1%), gripe water administration (37.2% vs. 60%) and pacifier usage (43.5% vs. 79.8%) improved to a statistically significant level ($p < 0.05$) after health education.

CONCLUSION

Health education is acknowledged as most effective and low cost intervention for behaviour change. The conventional or traditional practices have become part and parcel of the life style as they are available at doorstep, easily acceptable and moreover affordable. Traditional practices may be useful, harmful or innocuous. Identifying and promoting useful practices can facilitate the community participation and enhance the acceptability of health care providers. By this, health education programs and Information Education and Communication strategies for behaviour change will have best results. Educating mothers regarding healthy newborn/ infant rearing practices should be started from antenatal period as this is most vulnerable period for behaviour change. Every contact with the health facility should be utilized as an opportunity for providing health education. Even though knowledge regarding newborn care practices showed improvement, the fact remains that only through sustained intervention; one can influence the attitude and belief which are critical elements of behaviour change.

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