Research Article

Assessment of utilization of child health services (under RCH program) and incorrect practices related to perinatal events in Jamnagar district, Gujarat, India

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ABSTRACT

Background: India contributes to 25% of the over 6.9 million under-five deaths occurring worldwide every year with nearly half of them in neonatal period .This study is related indirectly with the causes of U5MR (e.g. Neonatal sepsis, prematurity-LBW) through focusing on service utilization related to perinatal events & incorrect practices of essential Newborn care (e.g. initiation of breast feeding and exclusive breastfeeding). Objectives: (1) Assess utilization of child health services related to perinatal events (2) Assess incorrect practices related to perinatal events (3) Assess effect of demographic variables on service utilization and association of these variables with practices.
Methods: A cross-sectional study of 400 children (12 to 59 months) was done using multistage sampling technique in Jamnagar district. 120 children were selected from urban and 280 from rural areas as urban: rural ratio is 3:7 in India.
Results: 93.55% children having umbilical infection. Birth weights were taken in majority of children (95.75%), 15.83% of those weighed were having low birth weight (LBW). Application on umbilical cord after birth was seen in 10.25% & prelacteal feed in about $1/3^{rd}$ children. Breastfeeding immediately or within 4 hours after birth was seen in $3/4^{th}$, exclusive breastfeeding in $2/3^{rd}$ children.
Conclusions: Children having umbilical infection were treated indicating better utilization of curative services. Taking of birth weights in majority of children indicating good functioning of healthcare professionals but some of those weighed were having low birth weight (LBW) indicating underutilization of preventive-antenatal services indirectly affecting child health. Incorrect practices like application on umbilical cord after birth and prelacteal feed were seen in children. Recommended practices like breastfeeding immediately or within 4 hours after birth, exclusive breastfeeding were seen in children. Colostrum giving was more prevalent and low birth weight was less prevalent in rural areas compared to urban areas which indicated better health care utilization in rural areas.

Keywords: Child health, Prelacteal feed, Colostrums, Breastfeeding

INTRODUCTION

India's national policy for children recognizes them as nation's supremely important asset and declares that the nation is responsible for their "nurture and solicitude". It further spells out various measures to be adopted and priorities to be assigned to children's programmes with a focus on areas like child health and child nutrition.[1]

The total child population (0-6 years) in census 2011 was estimated to be 164515253 which are 7.36 % of total population.[2]

Out of 27 million children taking birth yearly in India, around 10% of them don't survive to 5 years of age. In absolute figure, India contributes to 25% of the over 6.9 million under-five deaths occurring worldwide every

year. Nearly half of under-five deaths occur in neonatal period.[3] "There are many ways to death, but there is only one way to be born". This statement is very true especially for the children, as they struggle hard for survival right from the birth against many unfavorable and hostile conditions.[4]

Among children who died before their 5th birthday, causes are like this: Prematurity (27%), Acute respiratory disease (14%), birth asphyxia (11%), Diarrhea (11%), Neonatal Sepsis (8%), congenital anomalies (6%), injuries (4%), Measles (2%), other diseases (16%).[5]

Currently RCH programme implement many initiatives to achieve these goals like (1) control of death due to ARI (2) Control of death due to diarrheal diseases (3) Provision of essential new born care (4) Vitamin-A supplementation to children between the ages of 6 months to 5 years (5) Iron folic acid supplementation to children under five years of age. (6) Implementation of exclusive breast feeding up to the age of 6 months and appropriate practices related to complementary feeding. (7) Integrated Management of Neonatal and Childhood Illnesses (IMNCI): It offers a comprehensive package for the management of the most common causes of childhood illnesses i.e. sepsis, measles, malaria, diarrhea, pneumonia and malnutrition.[6]

This study is related indirectly with the causes of U5MR (e.g. Neonatal sepsis, prematurity-LBW) through focusing on service utilization related to perinatal events & incorrect practices of essential Newborn care (e.g. initiation of breast feeding and exclusive breastfeeding)

Objectives of the study are: (1) Assessment of utilization of child health services related to perinatal events (2) Assessment of incorrect practices related to perinatal events (3) Assess effect of demographic variables on service utilization and association of these variables with health care practices.

METHODS

Study type: A cross sectional study. Study period: Study was conducted in July 2013 to June 2014. Sample size: According to DLHS-3 (2007-2008) prevalence of fully immunized children in study district was 55.1% and so, on applying sampling formula,[7]

Sample size $n = (1.96)^2 pq/L^2$

Where p=prevalence of fully immunized children
q=100-p=44.9%
L=allowable error=10% of p=5.51

Sample size came to n=313. Taking the non-response rate of 10% of n=313, sample size came to n=345. For feasibility reasons n=400 was taken.

Data collection: Total 10 areas (each having 40 study participants) were selected from whole district (total 400 participants). Out of 10 areas, 3 areas were selected from urban and 7 from rural region (as urban:rural population ratio is 3:7 in India). From each area, 40 children between 1-5 years were selected by house-to-house survey. For selection of urban areas, we had selected 3 wards by simple random sampling out of total 19 urban wards. 7 rural areas were selected in the following way. There were 7 blocks in whole district. From each block, one PHC was selected by simple random sampling. From each PHC, one subcentre was selected by simple random sampling. These 7 subcentre areas were considered as rural areas. Pretested semi-structured proforma was used. First of all, information was given orally about study to respondent of each participant (child of 1-5yr) and if she/he would give consent, questions were asked to him/her as mentioned in proforma. Proforma includes basic demographic profile and questions related to perinatal events.

The study protocol was reviewed and approved by the institutional ethical committee of Shri M P Shah Govt Medical College, Jamnagar.

Data entry was done in MS excel 2007 and analysis was done using medcalc version 9.2.0.1.

RESULTS

Table 1 showed that 70% children were taken from rural areas where as 30% were from urban areas. Almost Half (49.25%) children's mothers were educated up to primary & 16.5% children's mothers were illiterate. Majority (90%) of children were Hindu while only 10% children were Muslim. Almost 2/3rd (63.75%) of children belonged to lower class and almost 1/3rd belonged to middle class.

Table 1: Demographic details about study participants.

Variable	No. (n=400)	%
Locality		
Rural	280	70%
Urban	120	30%
Mothers' education		
Illiterate	66	16.5%
Primary	197	49.25%
Secondary & above	137	34.25%
Religion		
Hindu	360	90%
Muslim	40	10%
Socioeconomic class*		
Upper	8	2%
Middle	137	34.25%
Lower	255	63.75%

*Upper class includes class 1, middle includes class 2, 3 &
lower includes class 4, 5 of modified Prasad classification

(Average AICPI of year 2012=969)

Table 2: Service utilization and health care practices.

Variable	Findings		No. (n=400)	%
Birth weight	Measured	<2.5 kg	60	15%
		≥2.5 kg	319	79.75%
	Unmeasured	21	5.25%	Unmeasured
Application on umbilical cord after birth	Yes	41	10.25%	Yes
	No	239	89.75%	No
Redness/Discharge from umbilical cord and treatment history	Yes	Treated	29	7.25%
		Not treated	2	0.5%
	No	369	92.25%	No
Initiation of breastfeeding	Within 1st hour	192	48%	
	Within 1-4 hours	112	28%	
	After 4 hours	96	24%	
Exclusive breastfeeding	Yes	271	67.75%	
	No	129	32.25%	
Prelacteal feed	Yes	131	32.75%	
	No	269	67.25%	
Colostrum	Yes	306	76.5%	
	No	94	23.5%	
Low birth weight	Yes	60	15%	
	No	340	85%	

Table 3: Association of various demographic factors with service utilization and health care practices.

Demographic variable	Service utilization & health care practices		Test applied
Mother's education	**Prelacteal feed**		
	Yes (%)	No (%)	Chi-square = 0.163 P = 0.9217
Illiterate	23 (34.85%)	43 (65.15%)	
Primary	64 (32.49%)	133 (67.51%)	
Secondary & above	44 (32.12%)	93 (67.88%)	
Mother's education	**Colostrum**		
	Yes (%)	No (%)	Chi-square = 3.103 P = 0.2119
Illiterate	45 (68.18%)	21 (31.82%)	
Primary	153 (77.67%)	44 (22.33%)	
Secondary & above	108 (78.83%)	29 (21.17%)	
Locality	**Colostrum**		
	Yes	No	Chi-square = 4.562 P = 0.0327
Rural	223 (79.64%)	57 (20.36%)	
Urban	83 (69.17%)	37 (30.83%)	
Locality	**Low birth weight**		
	Yes	No	Chi-square = 17.07 P <0.0001
Rural	28 (10%)	252 (90%)	
Urban	32 (26.67%)	88 (73.33%)	
Socioeconomic class	**Exclusive breastfeeding**		
	Yes	No	Chi-square = 0.103 P = 0.9498
Upper	5 (62.50%)	3 (37.5%)	
Middle	93 (67.89%)	44 (32.11%)	
Lower	173 (70.89%)	82 (29.11%)	

Table 2 showed that birth weights were taken in majority of children (95.75%). Out of those children who were weighed at birth, 15.83% children were having low birth weight. Majority (89.75%) of children had no application on umbilicus after their birth while still in 10.25% children; something was applied on umbilicus after their birth. 92.25% children did not have any umbilical problems like redness and/or discharge after birth. Only 7.75% children had some umbilical problems after birth, in which majority i.e. 29 children were treated. About half (48%) children were breastfed within 1st hour after their birth followed by 28% children were breastfed within 1-4 hours after their birth. Almost 2/3rd (67.75%) children were on exclusive breast feeding in early childhood.

Table 3 showed that incorrect practice like prelacteal feeding was seen highest in illiterate mother and as the education of mother increases, prelactead feeding practice shows decline but it's not statistically significant. Recommended practice like colostrum feeding was increasing as the education of mother increased but it lacks statistical significance. Colostrum feeding was seen more commonly in rural areas as compared to urban areas which is statistically significant which may be due to higher believes of rural people in health care professionals than urban people. Prevalence of low birth weight was more in urban areas as compared to rural areas of Jamnagar which may be due to better utilization of health care services in rural areas compared to urban ones. Exclusive breastfeeding was higher in middle and lower class as compared to upper class but it was not statistically significant.

DISCUSSION

Our study showed that birth weights were taken in majority of children (95.75%). In Chandwani H[8] birth weight were measured in 86% children & Jain A[9] (2004) found that birth weight measurement were done for 81.47% children. In Govani KJ et al.[10] found that only 52% of all children's birth weight measured at time of birth.

It is seen from our study that out of those children who were weighed at birth, 15.83% children were having low birth weight. Jain A[9] (2006) found that out of those weighted at birth 9.6% were having low birth weight in his study.

We found in our study that majority (89.75%) of children had no application on umbilicus after their birth while still in 10.25% children; something was applied on umbilicus after their birth. Gary L. Darmstadt et al.[11] (2006) found their study on review of Domiciliary Newborn-care Practices in Bangladesh that 71% applied nothing to umbilical cord after cutting.

We can see in our study that 92.25% children did not have any umbilical problems like redness &/or discharge after birth. Only 7.75% children had some umbilical problems after birth, in which majority i.e. 29 children were treated. Fatima Mir et al.[12] (2011) in their study found 21.7% newborns were suffering from omphalitis (umbilical cord infection). Abhay T. Bang et al.[13] (2005) in their study found 19.8% children had umbilical infection.

Our study showed that about half (48%) children were breastfed within 1st hour after their birth followed by 28% children were breastfed within 1-4 hours after their birth. Arifeen et al.[14], AL Gambhi[15], Chandawani H[8], Shah V[16] & Jain A[9] found that breastfeeding was stared within 1 hour after birth in 38.25%, 37.72%, 31.78%, 38%, & 20.4% in their study respectively. CES[17] (2009) revealed that breastfeeding was started within 1 hour in 33.5% of children in their infancy.

It is found from our study that almost 2/3rd (67.75%) children were on exclusive breast feeding in early childhood. CES[17] (2009) revealed that 34.8% of children of 18-23 months were exclusively breastfed. Satishchandra DM[18] (2008) found that 56.7% of children were exclusively breastfed. Ludvigsson JF[19] (2004) found that exclusive breast feeding rate was 25% in their study while Shah V[16] (2005) found that only 14.44% of children were exclusively breastfed.

CONCLUSION

Birth weights were taken in majority of children (95.75%) which indicates good functioning of health care professionals but 15.83% of those who were weighed were having low birth weight which indicates still utilization of preventive services like antenatal services is not upto the mark which indirectly affect child health. Majority (93.55%) of those who had umbilical infection were treated which indicated better utilization of curative services. Incorrect practices like application on umbilical cord after birth was seen in 10.25% children & about 1/3rd of children (32.75%) were given prelacteal feed. Recommended practices like about 3/4th (76%) children were breastfed immediately or within 4 hours after their birth, 2/3rd (67.75%) children were on exclusive breast feeding. Colostrum giving was more prevalent and low birth weight was less prevalent in rural areas compared to urban areas which indicated better health care utilization in rural areas.

Ethical approval: The study was approved by the institutional ethics committee

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