Original Article

Analysis of Knowledge and Practices of Mothers Regarding Neonatal Care in District Gujrat

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ABSTRACT

Objective: The objective of this study was to determine the knowledge of mothers on essential newborn care at home and to assess the practices of mothers on essential newborn care at home.

Study Design: Cross- sectional Study

Place and Duration of Study: This study was conducted at the Rural Gujrat from August 2017 to January 2018

Materials and Methods: A total of 202 mothers participated in the study. The study participants were mothers of infants aged 3 months or less. The data was collected on standard newborn care knowledge scale based on 31 items and a 15 itemed newborn care practice scale.

Results: More than half (61.4%) mothers had four or more antenatal care visit. The mean knowledge score was 14.3 (SD=3.9) ranging from 3 to 27 on a scale of 0-31. When converted to a binary variable at the cut-off value of 60%, it was found that only 20 mothers had good knowledge (10.6%) while 168 (89.4%) had poor knowledge. Similar trend was observed for newborn care practices, only 10.1% mothers had good practices while 170 (89.9%) had poor practices for newborn care. The only significant predictor of better knowledge was counselling by health care providers (OR=1.78, 95% CI=1.17, 2.71).

Conclusion: Knowledge and practices of mothers regarding newborn care were very poor in rural areas of Gujrat. This highlights the need of appropriate counselling of mothers (by trained health providers) regarding newborn care.

Key Words: Knowledge, Neonatal, Mother, Newborn

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INTRODUCTION

Every year almost 4 million children die worldwide, before reaching age of even a month (WHO, 2005). Two-thirds of such neonatal deaths occur in just ten countries, Pakistan being at number three among these countries[1]. Pakistan could not achieve any of the MDG 4 targets. Under-five child mortality still remains at 92 per 1000 live births, a large way behind the MDG targets of 4-6. Almost half (49%) of the under-five deaths occur in neonatal time period in Pakistan. Infant mortality decreased from 122 in year 1990 to 73 in 2012.

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However, neonatal mortality rate showed a meagre decline from 56 to 44 during this one and a half decades[2]. Huge disparities exist in neonate mortality in Pakistan, with 43 deaths per 1000 live births in the Islamabad Capital Territory, 70 in KPK, 93 in Sindh, 105 in Punjab and 111 in Balochistan[3].

Majority of neonate deaths occur in first few hours or days of life, almost 25%-45% deaths occurring during first 24 hours. The rest two thirds of neonatal mortality is concentrated in the first week of life[4]. The proximal factors causing neonatal mortality have been studied in detail. A recent summary published in the Lancet indicates that most newborn die as a result of preterm birth (36%), followed by severe infection (29%) and birth asphyxia (23%)[5].

Poor neonatal health indicators in Pakistan are explained by dreadful state of these determinants of neonatal mortality. Less than half (48%) deliveries take place in health facilities, and only 37% mothers receive essential antenatal care (ANC). Only half of the births in the country are attended by Skilled Birth Attendant (SBA). Less than 20% newborns receive breastfeed within an hour of birth[3-5]. Poor cord care practices are very common. Moreover despite availability of community health workers, Pakistan does not have a working policy of postnatal home visit by care providers. Literacy rate is poor in the country especially

among women, making them and their children more vulnerable to poor health consequences. Evidence exist that poor maternal knowledge regarding newborn care can lead to wrong actions, delay in care seeking and threatens neonate's health[6].

Educating mothers about neonate care immediately after birth has been proved a cost effective intervention to reduce neonatal mortality. In the newborn period, adoption of basic care practices such as breastfeeding and prevention of hypothermia can reduce newborn mortality by 55-87% and 18-42%, respectively[7]. A recent intervention in Vietnam showed a significant improvement in these newborn care practices of women after training using a child health care handbook[8]. Similar evidence is available from Taiwan[9] and Bangladesh[10].

In Pakistan, there is no mandatory forum for mothers to learn caring for their newborns. In absence of such forums, women usually rely on their social networks and traditional healers. The information given by such providers can be conflicting, inaccurate and even can lead to health threatening actions[11]. It is important to know the knowledge of mothers and their practices regarding newborn care in countries with high neonatal mortality. Understanding these practices can give a significant clue to the context-specific underlying causes of neonatal mortality. There is limited data on maternal knowledge and practices regarding newborn care in Pakistan. This study was aimed to build the knowledge base in this regard by assessing knowledge and practices of mothers regarding essential newborn care at homes.

MATERIALS AND METHODS

This cross sectional study was conducted in Tehsil Gujrat of District Gujrat from August 2017 to January 2018. The data was collected from the women who had experienced a live childbirth during the past three months. Inclusion criteria included mothers with an infant older than five days and less than or equal to three months old, and mothers who stayed in the respective place for the past six months. Exclusion criteria included mentally incapable (having a known psychiatric disorder), seriously ill mothers with severe medical problem and non willing mothers.

A sample size of 202 was calculated by using proportion formula on Epi Info software version 3.5. The sampling was carried out at two stages, first the Union Councils (UC) were selected and then the mothers with less than six months old infant. Six UCs were selected using the online random number generator. However, sample size was completed in 10 villages of five UCs. All the mothers meeting the eligibility criteria, from the selected UCs were asked to participate in the study. A list of mothers with infants aged seven days to six months was taken from the LHWs of the respective catchment areas.

Data was collected using an interview-based, structured questionnaire typed bilingually both in English and Urdu. A trained female data collector assisted the researcher to collect data form households. LHWs assistance was sought to facilitate data collection from households. Data collection tool was comprised of four sections. Section 1 included socio-demographic data, Section 2 included history of pregnancy, Section 3 was based on the main 'Newborn Care Knowledge' questions while Section 4 was based on the 'Newborn Care Practices'.

Data was entered and analyzed in SPSS v.20. Socio-demographic characteristics, reproductive health indicators and selected newborn care knowledge and practices were displayed using descriptive statistics. Frequency and percentages were reported for categorical variables while continuous variables were summarized using mean± SD and range.

The study was approved by the Ethical Committee. Necessary permission was sought from the CEO (Health), Gujrat. The written informed consent was obtained from the informants with clauses of voluntary participation, confidentiality and right to withdraw from the study at any time.

RESULTS

A total of 202 mothers participated in the study. Almost all were married and living with their spouses (200, 99%). The age of their youngest child ranged from 5 to 90 days with a mean of 54 days (SD= 24.6). More than half of the mothers (58.3%) were greater than 25 years old. Mean age of mothers was 26.29 years (SD=4.14). Most of the mothers (192, 97.5%) had at least one antenatal care visit to healthcare provider during the last pregnancy. However, only 61.4% (n=121) mothers had completed essential four ANC visits. The main provider consulted for ANC was lady health visitors (LHV)/ midwife/nurse followed by community midwives and doctors (Figure I).

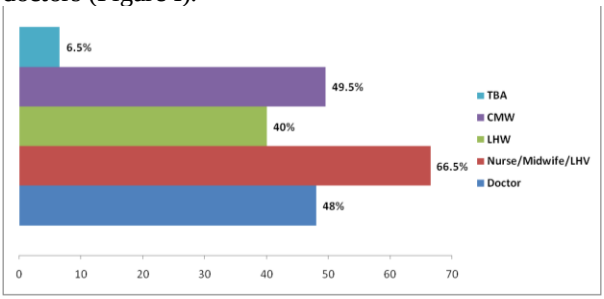

Figure No.1: Antenatal care providers

The mean knowledge score was 14.3 (SD=3.9) ranging from 3 to 27 on a scale of 0-31. Highest scores were obtained for the subscale of immunization while lowest for thermal care (Fig. 2). When converted to a binary variable at the cut-off value of 60%, it was found that only 20 mothers had good knowledge (10.6%) while 168 (89.4%) had poor knowledge.

Table No.1: Knowledge of mothers regarding newborn care

Knowledge variables		N	%
Breastfeeding			
Exclusive breast feeding	Yes	91	46.2
	No	106	53.8
Position of baby being upright after feeding	Yes	100	51.3
	No	95	48.7
Need for burp after feed	Yes	125	64.4
	No	47	24.2
	Sometimes	22	11.3
Time to start breast feeding	Within first hour of birth	130	65.7
	Later	68	34.3
Should colostrums be fed?	Yes	143	72.6
	No	48	24.4
	Don't know	6	3.0
Is colostrums good for baby?	Good	134	69.4
	Not good	42	21.8
	Don't know	17	8.8
Thermal Care			
Time to dry baby	Before the placenta is delivered	30	15.2
	After the placenta is delivered	45	22.8
	After the delivery is complete	68	34.5
	Baby not dried just wrapped	13	6.6
	Don't know	41	20.8
Time to wrap baby	Before the placenta is delivered	35	17.8
	After the placenta is delivered	89	45.2
	Long after the delivery has been concluded	32	16.2
	No need	2	1.0
	Don't know	39	19.8
Time to bath baby	Immediately after delivery of the baby Within 6 hrs. of delivery	141	71.6
	7-23 hrs. after delivery	31	15.7
	Second day or later	23	11.7
	Don't know	2	1.0
Skin to skin mother-baby contact	Yes	19	9.6
	No	172	90.4
Essential Cord Care			
What should be used to tie the cord?	Clean cord clamp/thread	166	82.2
What should be used to cut the cord?	Clean blade/scissors	185	91.6
What should be applied to cord?	Saline water/nothing	69	35.2
	Others	127	64.8
Does the cord need to be washed if soiled or being urinated on?	Yes	198	98.0
	No	4	2.0
Immunization knowledge			
Does a child need immunization after birth	Yes	197	100
	No	0	0
When can the first vaccine be given?	Within a month	194	96

The mean knowledge scores for thermal care of newborn were 1.17 (SD=0.75) on a scale of 0 to 4. Only one fourth of the respondents were aware of the need of skin-to skin contact of mother and baby. Majority of the respondents were of the view that baby should be given bath immediately after birth (table 1).

Predictors of good knowledge of mothers regarding newborn care: Univariate analysis revealed three significant predictors of better knowledge of mothers regarding newborn care, namely: belonging to high income group, being more educated and being counselled for newborn care. However, multivariate

model revealed only single significant predictor that was counselling regarding care by healthcare providers. The multivariate model was built using three predictors which showed significance at 10% alpha in univariate analysis. The knowledge of mothers was likely to be 1.78 times (higher) for one unit increase counselling scores.

The mean newborn care practice score was 5.89 (SD= 2.56) ranging from 2 to 11 on a scale of 0-15. Highest scores were obtained for the subscale of immunization while lowest for cord care.

Table No.2: Predictors of good knowledge of mothers regarding new born care

Sr. No.	Predictors		Unadjusted OR	C.I for Unadjusted OR		Adjusted OR	C.I for Adjusted OR	
				LL	UL		LL	UL
1	Mother's age	Up to 25 years	1					
		> 25 years	0.79	0.30	2.05	-	-	-
2	Mother's education	No	1			1		
		Primary	0.61	0.11	3.34	0.67	0.11	4.07
		Middle/Matric	0.95	0.28	3.18	0.78	0.21	2.89
		FA/F.Sc	0.44	0.05	4.01	0.34	0.03	3.55
		Above FA/FSc	**4.40***	1.07	18.15	1.99	0.34	11.60
3	Father's education	No	1					
		Primary	0.98	0.17	5.73	-	-	-
		Middle/Matric	1.43	0.42	4.90	-	-	-
		FA/F.Sc	1.68	0.28	10.15	-	-	-
		Above FA/F.Sc	3.92	0.75	20.56	-	-	-
4	Household income (PKR)	≤ 15000	1			1		
		15001-25000	1.38	0.4	4.27	1.36	0.37	4.96
		>25000	**5.14***	1.49	17.73	2.03	0.43	9.50
5	Mother's parity	1	1					
		2-3	0.52	0.17	1.58	-	-	-
		>3	0.61	0.17	2.16	-	-	-
6	Antenatal care visits	<4	1					
		4 or above	1.90	0.66	5.48	-	-	-
7	Type of delivery	Normal	1					
		C-Section	0.67	0.14	3.06	-	-	-
9	Counselling for neonate care		**2.07***	1.39	3.08	**1.78***	1.17	2.71
10	ANC provider (doctor)	No	1					
		Yes	1.71	0.66	4.40	-	-	-
11	ANC provider (LHV/Midwife/Nurse)	No	1					
		Yes	0.55	0.22	1.41	-	-	-
12	ANC provider (CMW)	No	1					
		Yes	1.92	0.73	5.07	-	-	-

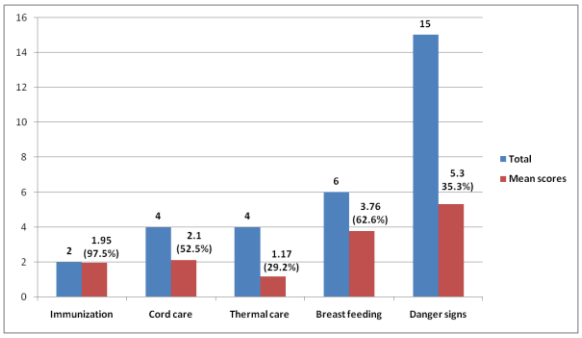

Figure No.2: Knowledge of mothers regarding newborn care

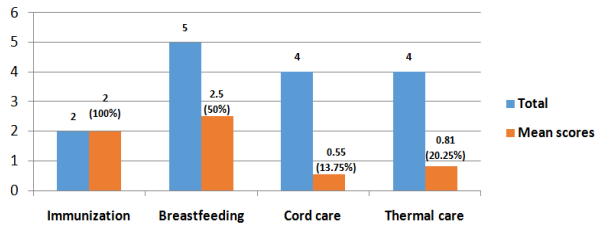

Figure No.3: Practices of mothers regarding newborn care.

DISCUSSION

This study revealed that mothers' knowledge and practices were quite poor with regard to the current recommendations on newborn care. These findings are a matter of concern in a country like Pakistan where neonatal mortality is quite high and has not decreased over a decade. Other low and middle income countries have already improved such practices, studies in India[12] and Ethiopia[13] has shown that majority of mothers had adequate knowledge regarding newborn care. This study focused on knowledge and practices of mothers regarding breastfeeding, thermal care, umbilical cord care, detection of danger signs in neonates and immunization[9].

The level of maternal awareness about exclusive breastfeeding was worrisome, as less than half of the mothers (46.2%) were aware of the need for exclusive breastfeeding. Even a lesser number of mothers i.e. 30% had actually practiced exclusive breastfeeding within first month of child's life. These results are validated by a recent study in Karachi where the rate of exclusive breastfeeding was only 26%[14]. Majority of the mothers, in this study, were of the view that herbal preparations named ghutti, char arq, kehwa, rose water and honey should also be given to baby within first month. Almost two thirds of the mothers (65.7%) knew that breast feeding should be started within first hour of birth. However, a lesser number of mothers (57%) had actually started breastfeeding within first hour of birth. Similar findings had been reported in other parts of the country[15]. Multiple reasons for this delay in breastfeeding had been reported including: child first needs to be given some herbal preparation to clean the stomach or child should first be given bath and then azan and then breastfeeding should be started[15]. A huge gap in role of healthcare providers needs to be highlighted in this context; they could not promote initiation of breastfeeding despite the fact that 92.5% of the births took place in health facilities in this study. A deeper understanding about roles of healthcare providers is needed in regard. An encouraging finding was that majority of the mothers (70%) were aware that colostrum is good for baby. However, they could not specify on how it was good or its role. This is a common problem reported in other cities of Pakistan[14] and in other countries as well[16]. A significant proportion of mothers, in this study, was of the view that colostrums is heavy for baby and thus not good and needs to be discarded.

CONCLUSION

Knowledge of basic newborn care among mothers in rural Gujrat is quite low. Rate of mothers' counselling about newborn care is also reported to be quite less, denoting the lack of efficiency of the educational programs. Knowledge of breastfeeding practices is inadequate, leading to difficulties in relation to lactation success. Knowledge and practices regarding thermal and cord care are also disappointing. Moreover, lack of acceptance of hypothermia and redness/inflammation of cord as a danger sign in neonates can be life threatening for neonates. Lady health workers and other healthcare providers should be trained and equipped with essential knowledge to educate mothers. Job descriptions of healthcare providers need to be revisited to promote mother's education.

Author's Contribution:

Concept & Design of Study:	Tahir Mahmood Butt
Drafting:	Zara Tahir, Aimen Tahir
Data Analysis:	Saad Akmal Bhatti, Nasreen Hamid
Revisiting Critically:	Akmal Khurshid Bhatti, Tahir Mahmood Butt
Final Approval of version:	Akmal Khurshid Bhatti

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Corrigendum

The name of **Nasir Ahmed Sasoli** in article title 'Compare the Outcomes of Antibiotic Therapy with Appendectomy in Patients with Acute Appendicitis' appeared in the contents at Sr.No.7, pages 25-27 published in **Med Forum Vol. 30, No. 10 (October 2019)**, has wrongly been mentioned as Ahmad Shah at **page 25** of the said article which may now be read as ***Nazir Ahmed Sasoli.*** instead of Ahmad Shah and in Citation as ***Sasoli NA*** instead of Shah A.

Editor

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Corrigendum

The contents of article "**Sickle Cell Trait and Disease in Anaemic Patients, Visiting Health Care Centre, KFU, Al Hasa**" published in the **Med. Forum, Vol. 30, No. 5 (May, 2019) at Page 27**, may now be read as under:

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2. Correct name of 4th author:

Ali Abdulkarim Alsulaiman

3. **Missing names in Author's Contribution:**

- Dr. Uma SankarAkula(who wrote Abstract, result and discussion parts)
- Dr. Anthony Leela (who did data analysis, literature search, & write material and methodology).

Editor

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