Colostrum Feeding in Rural Pakistan: A Cross Sectional Study Regarding Mother Knowledge, Attitude and Practice

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Colostrum Feeding in Rural Pakistan: A Cross Sectional Study Regarding Mother Knowledge, Attitude and Practice

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Abstract:

Objective: To assess the knowledge, attitude and practice of mothers regarding colostrum feeding to newborn.

Methods: This cross sectional study involving nursing mothers who are having any children under 2 years, conducted in different maternity centres and outpatient clinics in North part of Sindh Province Pakistan. Data was collected from three districts (Larkana, Qamber Shahdadkot and Dadu) from September 2015 to January 2016. Systemic random sampling technique was used, in which every third woman was selected and SPSS 20 was used for data analysis.

Results: Of the 384 nursing mothers, 28% (n=107) nursing mothers discarded colostrum on believing that colostrum as non-milk, non-nutritious and causing diarrhea. These mothers offered water (5%), honey (21%) and herbal preparation (2%) to babies as pre-lacteal feeding. The practice of discarding colostrum and pre-lacteal feeding is more prevalent among the mothers who were illiterate 83% (n=89), experienced first pregnancy 65% (n=70) and who delivered their child at home 79% (n=85).

Conclusion: More than a quarter mothers don't know about the health benefits of colostrum as a result they do not offer healthy colostrum feeding to newborn. There is dire need to increase the mass awareness of colostrum feeding to newborn among nursing mothers particularly in rural part of Pakistan.

Key Words: Knowledge, attitude and practice, Colostrum, Pre-lacteal feeding, Mothers.

Introduction

Colostrum is bright yellowish thick milk[1] secreted from mammary glands during late pregnancy and continuing during the first few days after child birth[2,3]. Colostrum is rich with immunoglobulin (IgA, IgG and IgM), enzymes, cytokines and growth factors[2]. Along with that, colostrum has also laxative effects that helps baby to excrete the excess bilirubin and aid to pass the stool[3].

The World Health Organization (WHO) and UNICEF recommend exclusive breastfeeding for first six months of life[4]. Exclusive breastfeeding from birth up to six months has many long term physiological and psychological effects on mother and child, because it reduces infant morbidity and mortality[5]. However multiple social and cultural factors have been observed that cause delayed breastfeeding due to presence of colostrum[5,6]. A study conducted in tertiary care hospitals of Karachi, Pakistan revealed that 90% mother offers colostrum as first feed to the baby[7] whereas other study in Lahore shows only 35% infants receive colostrum as their first feed[8]. There are various studies conducted in developing countries show variable results like India 36.9%[9], Nepal 71%[2], Ethiopia 21%[5], Nigeria 56%[10] and Malawi 96%[11].

In Pakistan, there are a lot of customs, practices and cultural influences in terms of colostrum use for newborn feeding. The objective of study is to assess the knowledge and practices of colostrum feeding among nursing mothers. By assessing the knowledge and practices of mothers regarding colostrum feeding to newborn can give us idea for need modification if needed. Hence different interventions can be used to develop the real essence of providing colostrum to newborn and enhance babies' immunity.

Materials and Methods:

This is a multicentre cross sectional study, conducted in different maternity centres and outpatient clinics in North part of Sindh Province Pakistan. Data was collected from three districts (Larkana, Qamber Shahdadkot and Dadu) from September 2015 to January 2016. Study includes all the nursing mothers who are having any children under 2 years. However, the mothers who were not willing to participate and who were not having any successful live birth pregnancy were excluded. All the women were approached by systemic random sampling technique, in which every third women was selected. The sample size of this study was calculated by WHO formula for sample size. By keeping the margin of error of 5%, confidence interval of 95% and population of 50% as we are not having exact number of figures for under 2 years children in any district, the sample size calculated was 384. Since the data was collected from 3 different districts, therefore it is divided into 3 equal parts i.e. 128 for each district.

Self-made questionnaire translated in Urdu and Sindhi language was introduced. Questionnaire focused on socio-demographic status, knowledge, attitude and practice about colostrum from pregnant and nursing women. Validity of question was done by face validity method whereas reliability of questionnaire was tested by cronbach alpha with obtained value of 0.624.

Data collection was done by the LHW and Nurses, working in the selected clinics and maternity centres. A voluntary written informed consent was taken from all respondents before introducing questionnaire and institutional consent was taken from respective authorities. Data was entered first in Microsoft Excel 2016 and then in SPSS version 20. Data was analysed for descriptive statistics. Chi square test was applied in order to measure the

association of mother's age, education, institutional care, domiciliary care with the colostrum feeding practices and a p-value <0.05 was considered significant.

Results:

A total of 721 mothers were approach out of which 566 were falling in the inclusive criteria of study. Out of these 566 mothers, only 468 mothers were has responded to this study questionnaire, however only 384 mothers have completely responded to the study questionnaire. The major reasons for non-participation and incomplete participation were: family restriction, time constraint and unexpected disturbance (attending phone calls, physician calls for consultation and crying of children).

Table 1: Socio-demographic Factors of the Study Participants

Description	Categories	Frequency (n) (%)
District	Larkana	128 (33%)
	Qamber Shahdadkot	128 (33%)
	Dadu	128 (33%)
Age	<20 years	150 (39%)
	21-40 years	230 (60%)
	>40 years	4 (1%)
Education	No Education	133 (35%)
	Primary / Secondary	154 (40%)
	Matriculation / Intermediate	85 (22%)
	Graduation or higher	12 (3%)
Number of Children	Primipara	104 (27%)
	Multipara	280 (73%)
Place of delivery of last child	Home	146 (38%)
	Government Maternity Center/Hospital	84 (22%)
	Private Maternity Center/Hospital	154 (40%)

Total 384 nursing mothers participated in study. Each district contributed around 33% (n=128) participants. Out of 384 nursing mothers, 60% (n=230) mothers were having age group of 21-40 years, while 39% (n=150) were under 20 years and only 1% (n=4) of study participants were over 40 year of age. 40% (n=154) nursing mother were having primary or secondary level education whereas 35% (n=133) never attended school, moreover 25% (n=97) were having matriculation and higher education. Out of 25% (n=97) only 4% (n=15)

of total participants were employed at different jobs whereas rest were housewives. Among all nursing mothers, 73% (n=280) mothers were multipara and 27% (n=104) were primipara. It was also found that 62% (n=238) mothers delivered their last baby in a health facility whereas 38% (n=146) used domiciliary care.

Table 2: Knowledge, Attitude and Practice about Colostrum among Nursing Mothers

Description	Category	Frequency (n) (%)
What do you know about colostrum?	It is colorful embarrassing discharge. It should be discarded.	107 (28%)
	It is kind of milk. Good for baby	276 (72%)
Do you know any benefit of colostrum?	It is very nutritious to baby	180 (47%)
	It aids immune system	81 (21%)
	It helps in passing the first stool of baby.	8 (2%)
	Don't know	115 (30%)
Who guides you for colostrum feeding?	Family	31 (8%)
	Lady health Visitor	80 (21%)
	Consulting midwife	120 (31%)
	Consulting doctor	31 (8%)
	Nobody	122 (32%)
When did you offer your first breastfeed to baby?	within half hour	19 (5%)
	within 1 hour	90 (23%)
	within 6 hours	158 (41%)
	within 24 hours	22 (6%)
	After 24 hours	95 (25%)
Who asked you not to offer colostrum feeding to baby? (n=107, 28%)	Family	85 (22%)
	Healthcare professional due to poor health of baby	19 (5%)
	Healthcare professional due to my Caesarean Section	4 (1%)
	I do not prefer to give colostrum to baby	22 (6%)
Colostrum should be discarded because? (n=107, 28%)	It is not milk. It is not nutritious	90 (84%)
	It causes diarrhea	14 (13%)
	It is not good for child health	3 (3%)
What do you offer in pre-lacteal feeding?	Water	19 (5%)
	Honey	80 (21%)
	Herbal preparation	8 (2%)
	None (Prefer Breastfeed)	277 (72%)

99% (n=380) nursing mothers started breast leaking in 2nd and 3rd trimester while 1% (n=4) started in 1st trimester. Out of all participants, 82% (n=314) observed changing breast leaking to milk after 48 hours of birth of baby whereas 18% (n=70) observed this change within 48 hours. Among total participants, 72% (n=276) nursing mothers stated breast leaking (colostrum) as a kind of milk that is beneficial for child health whereas 28% (n=107) nursing mothers stated colostrum as embarrassing discharge and should be discarded. Out of 28% (n=107) nursing mothers who discarded colostrum believed that colostrum as non-milk and non-nutritious (84%) and causing diarrhea (13%). Among the total participants, around 70% (n=269) nursing mothers had knowledge about health benefits of colostrum on child health, while 30% (n=115) did not have any knowledge about health benefits of colostrum. 68% (n=262) mothers responded that they received guidance from the healthcare professionals (60%) and family (8%) regarding the benefits of colostrum feeding. Along with that, there were practice of different pre-lacteal feeding to babies. Around 28% (n=107) nursing mothers offered pre-lacteal feeding like water (5%), honey (21%) and herbal preparation (2%) to babies.

The participants of this study also questioned on initiation of breastfeeding. Out of total participants, 60% (n=231) nursing mothers initiated breastfeeding within 6 hours and 8% (n=30) after 6 hours whereas 27% (n=104) nursing mothers initiated breastfeeding within 1 hour and only 5% (n=19) within half an hour. On asking for the reason of delay of initiation of breastfeeding, nursing mothers responded that it was due to family (22%), due to advice of healthcare professional (6%) and due to personal preference (6%).

Table 3: Association of Colostrum with various Factors

Description	Category	Colostrum Feeding n=277	Colostrum Discarding n=107	p-value
District	Larkana	108 (39%)	20 (19%)	p-value =0.001
	Qamber Shahdadkot	78 (28%)	50 (46%)	
	Dadu	91 (33%)	37 (35%)	
Age	<20 years	56 (21%)	94 (88%)	p-value <0.001
	21-40 years	217 (78%)	13 (12%)	
	>40 years	4 (1%)	0	
Education	No Education	44 (16%)	89 (83%)	p-value <0.001
	Primary / Secondary	141 (51%)	13 (12%)	
	Matriculation / Intermediate	81 (29%)	4 (4%)	
	Graduation or higher	12 (4%)	0	
Number of Children	Primipara	34 (12%)	70 (65%)	p-value <0.001
	Multipara	243 (88%)	37 (35%)	
Place of delivery of last child	Home	61 (22%)	85 (79%)	p-value <0.001
	Government Maternity Center/Hospital	76 (27%)	8 (7%)	
	Private Maternity Center/Hospital	140 (51%)	14 (13%)	
Breastfeed Initiation	within half hour	19 (7%)	0	p-value <0.001
	within 1 hour	90 (32%)	0	
	within 6 hours	145 (52%)	13 (12%)	
	within 24 hours	15 (5%)	7 (6%)	
	After 24 hours	8 (3%)	87 (82%)	
Pre-lacteal feeding	Water	0	19 (18%)	p-value <0.001
	Honey	0	80 (75%)	
	Herbal preparation	0	8 (7%)	
	None	277 (100%)	0	

Table 3 shows association among colostrum feeding and discarding with various factors. The cross tabulation of participants' responses had shown statistically significant results having p-value <0.05. That indicates the colostrum discarding is associated with district, age, education, number of children, place of delivery of last child, breastfeeding initiation time and with pre-lacteal feeding.

Discussion

Colostrum, an essential feed for the newborns that strengthens the immune system and helps in growth and repair of body[12]. In this study simple assessment regarding the knowledge,

attitude and practice of colostrum feeding among mothers of rural areas of Sindh was conducted. The main result of study shows that 28% of mothers do not offer colostrum to their babies in rural Sindh compared to 10% in Karachi, an urban city[7]. The difference in numbers can be due urban-rural setting of Sindh.

In this study there were 28% (n=107) mothers who didn't offer colostrum feed to their newborns, because they feel that colostrum is not milk and it can cause diarrhoea or it is harmful for child health. A study conducted in Military Hospital of Rawalpindi also reflect similar type of finding where 35% mother believe that it is harmful for the health of newborn and 15% mothers believed that before initiating breastfeeding colostrum need to be discarded[13]. Moreover, it has been also analysed that mothers also delay in initiating the feeding to newborn. In this study, there were only 28% (n=107) mothers who initiated breastfeeding within an hour after child birth whereas there were around 25% (n=95) mothers who have initiated feeding 24 hours after birth child. The study conducted in Rawalpindi Military hospital also indicates similar type of finding only 14% mother initiated breast feeding within an hour and whereas 26% mother initiated breast feeding 24 hours after child birth[13]. Another study conducted in Karachi maternity centres where around 41% mothers initiated breastfeeding soon after birth and 3.2% mothers even initiated after first week[14].

The practice for discarding colostrum is not only common in Pakistan but it is also common in neighbouring countries, i.e. India. Different books of medicines, surgery and paediatrics in ancient Sanskrit text also have recommended different pre-lacteal feeding, i.e. honey or butter for the discharge of meconium. Moreover they also advised to discard colostrum for first few days[15]. Almost same type of belief and practice about the use of pre-lacteal feeding still exists across the geographical boundaries of India. In this study it has been also found that more than 25% mother prefer to use either water or honey or herbal preparation as pre-lacteal feed and not to prefer to offer colostrum as first meal to newborn.

A myriad of factors are responsible for pre-lacteal feeding and for colostrum discard. From the result of this study it is evident that the practice of discarding colostrum and pre-lacteal feeding is more prevalent among those women who have delivered their child either at home 79% (n=85), or have experienced first pregnancy 65%(n=70). Moreover, illiteracy 83% (n=89) and young age of mothers i.e. 88% (n=94) has direct relation with colostrum discarding practices. A significant association of maternal age, education, delivery units and also about the number of pregnancy was observed with the colostrum use practices, i.e. $p<0.001$. Similarly, a prospective study conducted in antenatal clinics of Maldives among mothers reveal that advanced maternal age has inverse association with the pre-lacteal feeding[16]. In addition, another study conducted in Nepal showed high association of maternal education, primigravida, domiciliary care and delivery with pre-lacteal feeding practices by multiple logistic regression analysis[17].

In this study, data is collected from three district of Sindh. This data does not represent overall situation of country or of province about colostrum feeding. There could be different results especially in some remote areas of Baluchistan and northern areas of KPK province of Pakistan. Based on the result of this study, there is need to increase of health awareness among locals about benefits of colostrum feeding. Local health NGOs and health authorities should scale up their health education and promotion strategies and emphasize on child health in first 2 years of life and highlight the value of colostrum feeding and exclusive breastfeeding in child development.

Conclusion:

Colostrum is basically the first feed of newborn that offer immunologic, laxative and nutritious benefits to the newborns. Unfortunately more than a quarter mothers don't know about the health benefits of colostrum as a result they do not offer very healthy meal to

newborn. Many mothers discard colostrum because of different myths regarding colostrum use, i.e. it is dirty milk, it cause diarrhoea, it is bad for child health and so on. Women delivering babies in domiciliary setting, usually discard colostrum and use either water, honey or ghutti as pre-lacteal feed. There is dire need to increase the mass awareness of colostrum via health education campaigns so that every woman irrespective of her reproductive age, culture, region, education and profession get awareness about the benefits of colostrum feeding and no any newborn is supposed to be deprived from the colostrum feeding.

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Author Contribution: JS has collected and analyzed all the data and also have written the introduction of the study, while **AK** has assissted **JS** in methodology and questionnaire designing and have worked on writing discussion of the study.

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