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## PUBLIC HEALTH RESEARCH

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### Knowledge and Practice of Breastfeeding among Mothers in Arma'a District Shabwah Governorate - Yemen

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#### ABSTRACT

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<b>Received</b>	16 January 2019
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<b>Introduction</b>	Breastfeeding is almost universal, but there are many barriers for proper breast feeding practices. Inadequate knowledge, or inappropriate practice, of breastfeeding may lead to undesirable consequences. The aim of this study was to assess breastfeeding knowledge, and practice among mothers in Arma'a district Shabwah governorate and identify factors that may affect breastfeeding practice in the study population.
<b>Methods</b>	A cross-sectional study using pre-tested validated structured questionnaire conducted among mothers who were attending Arma'a hospital and four health care units around Arma'a district. Sample size was 130 mothers who had at least one child aged two years or younger. Breastfeeding knowledge and practice of participants were assessed based on their experience with the last child.
<b>Results</b>	This study found that there are only 24 mothers (18.6%) have good knowledge while 106 mothers (81.4%) have low knowledge. 63 mothers (48.5%) had good breastfeeding practice while 67 mothers (51.5%) have poor breastfeeding practice. 54.0% mothers that have good knowledge have good practice while 52.8% mothers of poor knowledge have poor practice. Mothers's knowledge was significantly associated with their education level and their practice was significantly associated with the number of pregnancies (p-value=0.04 and =0.027 respectively). There was no significant association with other demographic data, and between knowledge and practice. No exclusive breastfeeding reported in this study.
<b>Conclusions</b>	This study shows that undesirable cultural practices such as giving pre-lacteal, avoiding exclusive breastfeeding are still prevalent among the mothers. The maternal knowledge towards breastfeeding was very low and there was big gap between actual and desired practices.
<b>Keywords</b>	Breastfeeding - Knowledge - Practice - Colostrum - Pre-lacteal - Yemen.

## INTRODUCTION

The baby's health after birth relies upon the nurturing practices implemented by families. The perfect food for young infants is human milk that has particular properties which meet nutritional needs of new infants. Breastfeeding is "a socially constructed and controlled practice which is often presented as a natural practice". As a universal objective for ideal health and nutrition for mothers and children, exclusive breastfeeding must be practiced by women, and they must exclusively feed their infants on breast milk, from birth to 6 month of age.<sup>1</sup>

Breastfeeding is "an important public health strategy for improving maternal morbidity, improving infant and child morbidity and mortality, and helping to control health care costs". It is related to decreased risks of respiratory illnesses, obesities, hypertension, gastroenteritis, necrotizing enterocolitis, sudden infant death syndrome and otitis media.<sup>2</sup> For the first six months, infants must be breastfed for perfect development, health, and growth as the global public health recommended.<sup>3</sup>

Exclusive breastfeeding is recommended up to 6 months of age, with continued breastfeeding along with appropriate complementary foods up to two years of age or beyond.<sup>4</sup> Colostrum, the yellowish, sticky breast milk produced at the end of pregnancy, is recommended by WHO as the perfect food for the newborn, and feeding should be initiated within the first hour after birth.<sup>4</sup>

To enable mothers to establish and sustain exclusive breastfeeding for six months, WHO and UNICEF recommend Initiation of breastfeeding within the first hour of life; Exclusive breastfeeding - that is, the infant only receives breast milk without any additional food or drink, not even water, breastfeeding on demand - that is, as often as the child wants, day and night, no use of bottles, teats or pacifiers.<sup>5</sup>

The results of two controlled trials in Honduras indicate that exclusive breastfeeding for six months (compared with four months) confers an advantage in prolonging the duration of lactational amenorrhoea in mothers who breastfeed frequently (mean 10-14 feedings/day).<sup>6</sup>

Variables that may influence breastfeeding include maternal age, maternal employment, socio-economic status, insufficient milk supply, level of education of parents, method of delivery, infant health problems, maternal interest and other related factors.<sup>3</sup>

In Yemen while breastfeeding is widespread – 89% of children are breastfed at 6 months, only around 12% is exclusively breastfed till 6 months. A low percentage of children initiate breastfeeding early (30%).<sup>7</sup>

The habit of giving other liquids to the baby after birth and before breastfeeding is very common: 80% of children are prematurely introduced to

complementary foods as early as 3 months after birth.

A survey was conducted during April-May 2013 in Sana'a City, Yemen shows that about 84% of mothers were breastfed their infants in the first month and the median of duration of breastfeeding was found only a half month, more than 54% of the infants were given bottles in the first few days after birth.<sup>8</sup>

The present study was undertaken to assess knowledge, and practice towards breastfeeding and to evaluate factors associated with breastfeeding in Arma'a district, Yemen.

## METHODS

### Study Design

This is a cross-sectional study using pre-tested structured questionnaire. Mothers who had at least one child aged two years or younger who attending Arma'a hospital and four public health care units were randomly selected over a period of three months.

### Ethical Consideration

The study received the approval from the UST ethical committee of university of science and technology, Yemen. Verbal consent was taken from each participant.

### Data Collection

A total of 130 questionnaires were distributed to mothers who met inclusion criteria; has child 0 – 2 years and attended to hospital or public health care unit. Beside socio-demographic data ( age, mother education, father education, family income, no. of life children, no. of children less than two years, type of delivery, and no. of pregnancies pre-tested questionnaires which have been used in earlier study and modified accordingly includes seven questions addressing knowledge (the time of initiation and duration of breastfeeding, the best food given to child less than 6 month, when the mother has to breastfed the child, benefits of breastfeeding to mother and her child, and causes of adequate an inadequate breast milk). Thirteen Questions addressing practice (giving colostrum, exclusive breastfeeding, pre-lacteal feeds, night breastfeeding, bottle and using pacifier).

### Data Analysis

All data will be coded, entered, and analysed by using SPSS software version 21. The presentation of the result will be as follow:

- 1) Descriptive statistics such as frequency, mean, and percentage will be used for analysing the socio-demographic characteristics of the respondents as well knowledge on breastfeeding and practices breastfeeding.

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- 2) Chi-square test will be used to determine the significant relationship between the dependent and independent variables. The significance level will be P value <0.05. This part will demonstrate 2 kinds of relationship: a) socio-demographic characteristics and practice. b) Knowledge and practice.
- 3) Mann-Whitney U test to determine the significant relationship between family income and knowledge & practice.

### Characteristic of the Participants

More than 92% of 130 mothers who were included in this study are less than 35 years. In addition, 91 (70%) from them have 1-4 children, while 38 (29.2%) have 5-10 children and 7 (5.4%) have 2 children less than 2 years age. Moreover, 101 (77.7%) are illiterate or can only read and write, while 26 (20%) are in primary schools and only 3(2.3%) are in secondary school. Furthermore, 68 (52.3%) of children were male and 62 (47.7%) were female. Family income is different; the minimum was 10000 Y.R., the maximum was 300000Y.R. and the median was 50000 Y.R. (\$200).

## RESULTS

**Table 1** Selected characteristics of the participants

Variable	Number	Percent (%)
Mother age		
15-20	14	10.8
21-35	106	81.5
>35	10	7.7
Mother educational background		
Illiterate	50	38.5
Read / write	51	39.2
Primary school	26	20.0
Secondary school	3	2.3
Father educational background		
Read / write	42	32.3
Primary school	40	30.8
Secondary school and above	48	36.9
No. of children		
1 - 4	91	70.0
5 - 10	38	29.2
>11	1	0.8
No. of children less than 2 y		
1	123	94.6
2	7	5.4
Gender of youngest one		
Male	68	52.3
Female	62	47.7
Type of delivery		
Normal delivery	126	96.9
Caesarean section	4	3.1
No. of pregnancies		
1-4	86	66.2
5-10	41	31.5
>11	3	2.3
Family income		50000.0 Y.R

### Knowledge

Table 2 shows that 71 (54.6%) of mothers said that breastfeeding must be started immediately within the first hour, while 46 (35.4%) said it should be initiated within the first day, 10 (7.7%) said within the second day, and finally 3(2.3%) recommended it when the mother is ready.

It also shows that 116 (89.2) knew that the children less than six months must be breastfed in demands or when they cry, while 6(4.6%) said when mothers feel it is appropriate, 5 (3.8%) said when

mothers have time, and 3 (2.3%) said when mothers are in houses. 111 (85.4%) knew that breastfeeding must continue more than six months, while 19 (14.6%) last only 6 months.

Only 41 (31.5%) reported that the best food of a child less than six months is the breast milk only, while 76 (58.5%) reported it is the breast milk and water, 36 (27.7%) said it is the breast milk and commercial milk, and 13 (10%) recommended the breast milk and goats milk.

Mothers who thought that the breastfeeding is good to a baby because the breast milk is the right food to the baby were 95 (73.1%), 63 (48.5%) said it is good because it protects the baby from diseases, 31 (23.8%) said it makes the baby strong and intelligent. To breastfeeding benefits to mother, 71 (54.6%) said that breastfeeding prevents a pregnancy, 57 (43.8%) said that breast milk is ready to use, 50 (38.5%) said that breast milk is free, 37 (28.5%) showed that breastfeeding protects mothers

from breast cancer, and 32 (24.6%) said that it creates a bond between a mother and her baby.

The factors, which increase the breast milk and reported by participants, were good food at 106 (81%) of samples, 70 (53.8%) reported that giving breast milk often, while 16 (12.3%) said that breastfeeding for a long time, 15 (11.5%) pointed to drinking before breastfeeding and 14 (10.8%) when the mother is free from problems.

**Table 2** Breastfeeding knowledge by mothers in Arma'a district

Variable	Number	Percent
Knowing the best time to start breastfeeding		
Immediately / Within one hour after the birth	71	54.6%
Within one day	46	35.4%
Within 2 days	10	7.7%
When the baby wants	0	0.0%
When the mother is ready	3	2.3%
Knowing the age up to which the child should receive breast milk		
6	19	14.6%
>6	111	85.4%
Knowing the best to feed baby under 6 Month		
Breast milk only	41	31.5%
Breast milk and solid foods	2	1.5%
Breast milk and water	76	58.5%
Breast milk and goats milk	13	10.0%
Breast milk and Commercial	36	27.7%
Knowing when the baby less than 6 Month breastfeed		
Demands feeding	51	39.2%
Every time it cries	65	50.0%
When mother has time	5	3.8%
When she is in the house	3	2.3%
When the mother feels it is appropriate	6	4.6%
Knowing the benefits of breastfeeding to baby		
Gives protection from disease	63	48.5%
Creates a bond between baby and mother	10	7.7%
Makes the child strong and intelligent	31	23.8%
The right food	95	73.1%
Knowing the Benefits of breastfeeding to mother		
Creates a bond between baby and mother	32	24.6%
Protect from breast CA	37	28.5%
Breast milk is ready to use	57	43.8%
Baby need less medical attention	4	3.1%
Prevents pregnancy	71	54.6%
Knowing the factors increase breast milk		
Giving breast milk often	70	53.8%
Breastfeeding for a long time	16	12.3%
Good food	106	81.5%
Drinking before breastfeeding	15	11.5%
Free from problems	14	10.8%

**Practice**

It was observed that even though many mothers did not have adequate knowledge, they were following some correct ways of breastfeeding that may be as habits in the traditional rural community.

Table 3 shows that 129 (99.2%) of mothers reported that they had breastfed their babies

previously. The only mother who did not breastfed her baby was because lack of milk, and the commercial milk was given as an alternative. In addition, 74 (56.9%) had breastfed immediately or within the first hour, while 31 (23.8%) started within the first day and 22 (16.9%) started within the 2<sup>nd</sup> day. Moreover, 116 (89.2%) had given colostrum in

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the first three days, while 14 (10.8%) had not. Furthermore, 122 (93.8%) had given other liquids rather than colostrum in the first three days before breastfeeding initiated which disrupts the exclusive breastfeeding.

It also shows that 103 (79%) had given traditional medicine (aloe) which is the main traditional medicine given to infants in this countryside. Mothers think that it is good for the infant gut and it is a strong antibiotic. Moreover, 71 (54.6%) had given water with sugar and/or salt, plain water was given to 62 (47.7%) of infants, while infant formula was given to 46 (35.4%) of infants, 27 (20.8%) of infants had received milk and 9 (6.9%) received tea or infusion before breast milk started.

Participants who reported that they still breastfeed currently were 104 (80%), while 26 (20%) had been stopped, two of them have children less than six months, while the rest had stopped according to some reasons; 65.4% (17/26) stopped because their children stopped him/herself, 50% (13/26) stopped because there was no breast milk, 23.1% (6/26) stopped because mothers became pregnant again, 19.2% (5/26) stopped because children did not like breast milk, 7.7% (2/27) stopped because mothers were sick, the same percent reported that children were sick, and only 3.8% (1/26) attributes to age of child. Mothers could choose more than one response.

Exclusive breastfeeding means that only breast milk is given to an infant 0-5 months. The introduction of other liquids, water or solids increases the risk of infection and subsequently the

rate of malnutrition among this age group. Breast milk provides complete nutrition for a child less than 6 months. In Yemen, it is common for mothers to offer water, tea or traditional medicine to children under 6 months, as this is thought to be necessary to quench the child's thirst, especially during the summer months. In some cases, mothers do not consider water, tea or traditional medicine a disruption to exclusive breastfeeding, as these clear liquids are viewed as natural and necessary as air.

The 24-hour recall method was used to evaluate the practice of exclusive breastfeeding in children less than 6 months.<sup>9</sup>

Mothers were asked what their child drank yesterday. Unfortunately, 100% (37/37) received liquids other than breast milk that means no exclusive breastfeeding in this sub-group. Moreover, 86.5% (32/37) had received plain water, 64.9% (24/37) had received commercial infant formula, 16.2% (6/37) had received another milk (powdered or goat milk) and 13.5% (5/37) had been given tea or fruit juice. Mothers could choose more than one response. With regard to continued breastfeeding, 76.7% (33/43) of children aged of 6-11, 79.4% (27/34) aged of 12-17 and 56.3% (9/16) of children aged of 18-23 months still breastfeed.

A total of 123 (94.6%) reported that they had breastfed their babies at night. Moreover, 120 (92.3%) had used bottles to feed their children, 47 (36.2%) had used a pacifier, from this sub-group, 83% (39/47) had used it to stop child crying, 34% (16/47) used them because they were too busy, and 10.6% (5/47) used it due to lack of milk.

**Table 3** Breastfeeding practice by mothers in Arma'a district

Variable	Number	Percent (%)
Women who have ever breastfed	129	99.2%
Initiation of breastfeeding		
Immediately	43	33.1%
Within 1st hour after birth	31	23.8%
Within 1st day	31	24.0%
Within 2nd day	22	17.1%
I don't know	2	1.6%
Colostrum giving in first 3 days	116	89.2%
Mothers introduced liquids in the 1st 3 d before breastfeeding initiated	122	93.8%
Liquids given before breastfeeding initiated ( Prelacteal feeding )		
Milk	27	22.1%
Plain water	62	50.8%
Water with sugar and /or salt	71	58.2%
Fruit juice	1	0.8%
Tea / infusion	9	7.4%
Traditional Medicine	103	84.4%
Infant Formula	46	37.7%
Breastfeeding currently	104	80.0%
Causes of stopping breastfeeding		
Age of child	1	3.7%
Child stopped him/herself	17	63.0%
No breast milk	13	48.1%

Child did not like breast milk	5	18.5%
Child was sick	2	7.4%
Mother was sick	2	7.4%
Mother became pregnant again	6	22.2%
Liquids that child received yesterday (exclusive breastfeeding indicator)		
Breast Milk	87	66.9%
Plain Water	111	85.4%
Commercial Infant Formula	60	46.2%
Other powdered /animal milk	46	35.4%
Fruit Juice	23	17.7%
Tea	18	13.8%
The age that child have started receive liquids		
0 – 1	75	57.7%
2 – 3	10	7.7%
4 – 5	21	16.2%
>6	24	18.5%
Liquids introduced because		
Baby liked it	28	21.5%
Mother in law advised it	11	8.5%
Husband advised it	5	3.8%
Good for baby	105	80.8%
It is traditional	19	14.6%
Child was thirsty	65	50.0%
Breastfeeding during the night	123	94.6%
Bottle use	120	92.3%
Pacifier use	47	36.2%

Table 4 shows that the knowledge of participants was significantly associated with their education level, and their practice was significantly associated with the number of pregnancies (p-

value=0.04 and =0.027 respectively). On the other hand, there was no significant association with other demographic data, and between knowledge and practice.

**Table 4** Knowledge and practice of breastfeeding practice of mothers in Arma'a district

	Knowledge					*p-value	Practice					*p-value
	n	Good %	n	Poor %			N	Good %	n	Poor %		
Mother age						0.912						0.944
15-20	3	21.4%	11	78.6%			6	42.9%	8	57.1%		
21-35	19	17.9%	87	82.1%			52	49.1%	54	50.9%		
>35	2	20.0%	8	80.0%			5	50.0%	5	50.0%		
Mother educational background						0.041						0.912
Illiterate	5	10.0%	45	90.0%			26	52.0%	24	48.0%		
Read / write	10	19.6%	41	80.4%			24	47.1%	27	52.9%		
Primary	7	26.9%	19	73.1%			12	46.2%	14	53.8%		
Secondary	2	66.7%	1	33.3%			1	33.3%	2	66.7%		
Father educational background						0.388						0.816
Read / write	5	11.9%	37	88.1%			22	52.4%	20	47.6%		
Primary	8	20.0%	32	80.0%			19	47.5%	21	52.5%		
Secondary and above	11	22.9%	37	77.1%			22	45.8%	26	54.2%		
No. of children						0.044						0.149
1 – 4	13	14.3%	78	85.7%			40	44.0%	51	56.0%		
5 – 10	10	26.3%	28	73.7%			22	57.9%	16	42.1%		
>11	1	100 %	0	0.0%			1	100 %	0	0.0%		
No. of children less than 2y						1.000						0.116
1	23	18.7%	100	81.3%			62	50.4%	61	49.6%		
2	1	14.3%	6	85.7%			1	14.3%	6	85.7%		
Gender of the youngest one						0.84						0.713
Male	13	19.1%	55	80.9%			34	50.0%	34	0.0%		
Female	11	17.7%	51	82.3%			29	46.8%	33	3.2%		
Type of delivery						0.563						0.620

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Normal	23	18.3%	103	81.7%	62	49.2%	64	0.8%
Caesarean section	1	25.0%	3	75.0%	1	25.0%	3	75.0%
No. of pregnancies					0.385			0.027
1 – 4	14	16.3%	72	83.7%	35	40.7%	51	59.3%
5 – 10	9	22.0%	32	78.0%	26	63.4%	15	36.6%
>11	1	33.3%	2	66.7%	2	66.7%	1	33.3%
Family income					0.711			0.134
Median		50000.0		50000.0		50000.0		50000.0
IQR		20000.0		23000.0		12000.0		40000.0
Knowledge	Good				13	54%	11	45.8%
	Poor				50	47.2%	56	52.8%

\* p- value is significant at < 0.05

## DISCUSSION

Our study conducted on mothers living in rural population which is the high percent of participants (77.7%) illiterate or read and write only, which leads to low knowledge and practice of breastfeeding. Our results showed that 99.2% of participants had ever breastfed whereas remaining 0.8% never breastfed because insufficient secretion of breast milk. This findings were more than results reported by another study in Uttarakhand and less than result found in study in Nepal.<sup>10,11</sup>

Results showed (54.6%) of mothers knew that breastfeeding must be start immediately or within first hour, this finding more than result in another study and less than results reported in Tajikistan, India, and Kishanganj, Bihar, while the results showed that mothers who practice this were 56.9% less than results in another study, and more than results found in other studies. Results in present study showed (89.2) of mothers had introduced colostrum to their babies, this findings less than results which reported by another study, and more than those reported by other previous studies.<sup>9,10,11,12,13,14,15,11,16</sup>

Exclusive breastfeeding means that only breast milk is given to an infant 0-5 months. The introduction of other liquids, water or solids increases the risk of infection and subsequently the rate of malnutrition among this age group. Breast milk provides complete nutrition for a child less than 6 months. In Yemen, - as in this study, it is common for mothers to offer water, tea or traditional medicine to children under 6 months. In some cases, mothers do not consider water, tea or traditional medicine a disruption to exclusive breastfeeding, as these clear liquids are viewed as natural and necessary as air.

The 24-hour recall method was used to evaluate the practice of exclusive breastfeeding in children less than 6 months.<sup>9</sup> Mother were asked what their child drank yesterday (57.7%) of all children in this study had received this liquids within first month), and of 37 of children less than six months age sub-group unfortunately, 100% (37/37) received a liquids other than breast milk, that is mean no exclusive breastfeeding in this sub-group,

while the percent was (5.1%) in Uttarakhand (8.4%) in Erbil City, 8.6% in Abha, Saudi Arabia, 32.8% in Malaysia, and 54% Pakistan.<sup>10,15,17,18,19</sup>

Although of high percentage of colostrum introducing the pre-lacteal feeding percent was high in present study 93.8% of participant had introduce liquids before breastfeeding initiation, (79%) had give traditional medicine (aloe) which is the main traditional medicine gives to infants in this countryside, mothers think that its good for infant gut and strong antibiotic. Other studies showed 33% and 35% mothers had give pre-lacteal feed respectively.<sup>11,19</sup>

Knowledge about benefits of breastfeeding were linked to educational level. Mothers motioned at least one benefit regards to mother and one to the child considered to have some knowledge and having more than two benefits regards to child and more than three benefits regards to mothers, which considered that they have good knowledge.it was observed that all mothers could mention at least one benefits of breastfeeding.

All mothers with secondary school were able to mention more than two benefits of breastfeeding regards to child and more than three benefits regards to mothers, mothers with primary school had mentioned lesser than those with secondary, and the least were mothers who illiterate or read and write, which indicates educated mothers had better knowledge on breastfeeding benefits .

Our study showed 50% of participants knew that child fed when cries, 39.2% reported in demands, less than this percent had showed in previous study.<sup>20</sup>

Present study showed that 92.3% of participants had used bottle, more than results reported by other studies.<sup>9,14,15,19</sup> Pacifier used by 36.2% of mothers in this study because stop the baby crying (83.3%), mother too busy (33.3%) and lack of milk (12.5%).

## CONCLUSION

This study found that there are only (18.6%) of participants have good knowledge while (81.4%) have low knowledge. (48.5%) had good breastfeeding practice while (51.5%) have poor

breastfeeding practice. 54.0% mothers that have good knowledge have good practice while 52.8% mothers of poor knowledge have poor practice. This study shows that undesirable cultural practices such as giving pre-lacteal, avoiding exclusive breastfeeding are still prevalent among the mothers. The maternal knowledge towards breastfeeding was very low and there was big gap between actual and desired practices in Yemen.

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