

## Knowledge & Practices of Exclusive Breast Feeding in Fayoum, Egypt

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### Abstract

**Background** Breastfeeding is an important public health strategy for improving infant and child morbidity and mortality, The WHO recommends that for the first six months of life, infants should be exclusively breastfed. This study aimed at assessing exclusive breastfeeding EBF knowledge, and practice among lactating mothers attending Benisaleh Family Health Unit having infant aged from 2-6 moths. **Methods:** A cross-sectional study using structured questionnaire was conducted among mothers having infant aged from 2-6 months attending Bensaleh FHU for immunization practices through period from July to September 2013. **Results:** Out of 400 mothers interviewed; exclusive breast feeding was reported among 50 (12.5 %). The mean total knowledge score of participants was  $10.22 \pm 2.9$  & ranged from 4 to 22 out of 27 knowledge questions. The mean knowledge score was significantly higher in mothers, with higher education, working mothers and those who received knowledge from media & combined source than those with lower education, not working and who received knowledge from PHC workers. The significant predictors for exclusive breastfeeding practice among participants were; male sex, early breastfeeding initiation after delivery, and good knowledge with odds ratios of 3.02, 13.2 and 7.9 respectively

**Conclusion and Recommendation:** There was a lack of knowledge and correct feeding practice regarding EBF. Urban and educated mothers have good knowledge. Counseling for mothers on EBF needs to be improved and health care workers need to be better trained to provide counseling services during antenatal care visits.

**Key Words** EBF, knowledge, practices, lactating mothers, breast milk

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### Introduction

Exclusive breastfeeding (EBF) is a simple, cheap and cost effective intervention in reducing child mortality and morbidity in low income countries (1, 2). According to the World Health Organization (WHO), breast milk has the complete nutritional requirements that a baby needs for healthy development. Furthermore, it is safe and contains antibodies that help protect infants and boost immunity. Consequently, breastfeeding contributes to reduced infant morbidity and mortality due to diarrhea, respiratory or

ear infections and other infectious diseases. For the mother, breastfeeding is economical; breast milk is always available, clean and at the right temperature. Breastfeeding also delays the return of fertility and reduces the risk of developing breast and ovarian cancers. (3) The World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of life and continued breastfeeding up to two years of age or beyond. Exclusive breastfeeding is defined as feeding the infant only breast

milk, with no supplemental liquids or solids except for liquid medicine and vitamin/mineral supplements (4). Globally, Not more than 35% of infants worldwide are exclusively breastfed during their first four months of life (5,6,7). the prevalence of exclusive breast feeding in developing countries varied. Madagascar, (70%), Zambia, (74%), Ghana, (79%) and Bolivia (65%). Amhara Region, (81%), Oromia Region, (62%) and South Nations and Nationalities Peoples Region (64%). But this finding is higher than the findings in Lebanon (10%), Bangladesh (36%) and the national exclusive breastfeeding prevalence in Ethiopia (49%).(6,12) Promotion of exclusive breastfeeding is the single most cost-effective intervention to reduce infant mortality in developing countries (8-11). It is estimated that sub-optimal breastfeeding, especially non-exclusive breastfeeding in the first six months of life, results in 1.4 million deaths and 10% of diseases in under-fives. Non-exclusive breastfeeding also has long term impact, including poor school performance, reduced productivity, and impaired intellectual and social development. It can also increase the risk of dying due to diarrhea and pneumonia among 0–5 month old infants by more than two-fold (9,10). This study aimed at evaluating knowledge and practices of lactating mothers toward EBF and identifying factors affecting them.

### **Subjects and methods**

This study is a descriptive cross-sectional design aiming to assess exclusive breast feeding knowledge, and practice among lactating mothers attending FHU.

### **Study setting and population**

The study was conducted in The rural Family medicine Health Unit (FHU) in Beni-Saleh, Fayoum district among lactating mothers who came to well baby & immunization clinic having a child from 2 to 6 months . Based on the last census Egypt; 2006, this family medicine health unit serves about 24.000 people. The expected number of married women in the child bearing years near 4000 women that is the target population.

To select study participants a purposive sample technique was used. The sample size was determined using single population proportion equation \_with the following considerations: .95% level of confidence ( $Z = 1.96$ ); 5% margin of error and 50.0% percent of participants with good knowledge. Thus minimum size required was 384. the total size taken in this study was 400.

### **Data collection**

Social workers in PHC called Raedat Refeats were trained to interview these mothers using predesigned and pretested structured questionnaire covered the following items (Sociodemographic characteristics, knowledge & practices towards BF).

### **Ethical approval**

The study received the approval of the Research and Ethics Committee of Faculty of Medicine, Fayoum University. Informed oral consents were obtained from all participants in the study.

### **Statistical analysis**

Data were coded, validated and analyzed using *SPSS* version 16. Descriptive statistical analyses were performed

At the stage of data analysis a scoring system was used for knowledge

questions. The correct answer was given a score 1 and the wrong answer and (don't know) were given score 0. Knowledge score was calculated for general knowledge questions covering 7 items and benefits of BF for baby questions 11 items, benefits of BF to mothers questions 6 items and overcoming BF problems 3 items. The total knowledge score was calculated by summation of the total items covering 27 items. A cut-off point was determined on the basis of the median value of the total knowledge score (10) participants at or above the median value were classified as having good knowledge, whereas those having a total knowledge score less than the median value were classified as having poor knowledge. t test and ANOVA test were used to compare quantitative variables between groups while chi-square was used to compare qualitative data. Logistic regression analysis was done to test for significant predictors for good knowledge and exclusive breastfeeding, P value less than 0.05 was considered statistically significant.

## Results

Table 1: The data of the study was collected from 400 mothers having infants aged from 2 to 6 months; nearly half 49.5% of infants at the age of 6 months. The males represented 48.3% of infants. The mean age of participants was  $28.06 \pm 5.8$ , the majority were married (96%). Employed mothers represented (75.0%). Nearly one fourth of participants (23.5%) had more than 3 children

Table 2: revealed that 59% of mothers knew the best time to initiate BF after delivery while most of mothers 79% knew that times to BF day and night is

on demand, on the other hand 63% and 25% respectively of mothers knew that they shouldn't give a baby Artificial Formula or fluids in her/his first six months. Nearly half (49%) of mothers correctly knew the age of EBF. Only 23.5% of mothers mentioned the importance of cleaning breast before lactation.

Figure 1: Most of mothers knew the importance of BF to the baby regarding giving immunity against diseases by (95.5%), helping in relieve physiologic jaundice by (84.5) and Provocative (speeds the passage of meconium) by (73.0). other advantages of BF to baby mentioned in table 3 were poorly known to participants.

Figure 2: Regarding advantages of BF to mother; few percentages of mothers correctly identified them except the item mentioned quick in valuation of uterus that was identified by 85% of participants.

Table 3: Distribution of mothers by their knowledge about some BF problems showed wrong concepts in the mind of mothers when dealing with these problems; i.e. the largest percentage of participants mentioned Give the baby AF by bottle & Give the baby fluids (tea, herbs) by bottle in the management of scanty milk. Breast engorgement management by stopping breast feeding and massaging the breast was mentioned by 28.5% and 15.5% of participants.

Table 4: showed the mean knowledge scores of different subgroups of the study group. The mean knowledge score of working participants was significantly higher than not working ( $p=0.000$ ). Also the mean scores were higher with education as secondary and higher than those with lower education ( $p=0.019$ ). Regarding source of

information about BF ; the mean score of mothers received information from media and combined source was higher than those who received counseling from health workers

## Practices

Table 5 revealed that 43% of mothers practiced BF within the first hour after labour. The majority (65.0%) never cleaned their breast before feeding.

Regarding feeding pattern most participants (85.5%) uses both sides a time. 31% of mothers gave artificial formula while 85% of mothers gave fluids. Only 19% of mothers practiced BF in a single sitting for 20-30 minutes. The majority (75%) of participants introduced complementary food through the 1<sup>st</sup> six months , the largest percentage introduced (69.3%) Food at age of 3-4 months.

The percent of participants who exclusively breastfed their infants with no fluids, artificial and complementary food was 12.5%.

Table 6 showed that there was significant association between the practice of EBF and male gender of then Becky sex ( $p < 0.03$ ), age of infant ( $p = 0.006$ ) where percent of infants aged 2 months received significantly higher rate of exclusive than older exclusive infants. Also there was significant association between exclusive breast feeding, early initiation of breastfeeding after delivery and absence of breast feeding difficulties ( $p > 0.10$ ).

Table 7 showed the significant predictors for good knowledge by logistic regression analysis. Working of mothers and receiving BF knowledge through media and combined were the significant predictors for good knowledge with odds ratios of 8.24, 3.07 respectively

Table 8 showed the significant predictors for exclusive breastfeeding by logistic regression analysis; male sex of the Baby early breastfeeding initiation after delivery, and good knowledge were the significant predictors associated with higher chance for exclusive breastfeeding with odds ratios of 3.02, 13.2 and 7.9 respectively.

## Discussion

Egypt is one of the developing countries in which we need to support correct feeding practices. Exclusive breastfeeding is a safe, economical, and emotionally satisfying means of feeding babies. The present study aimed to identify knowledge, and practice among mothers regarding breast feeding.

The data of the study was collected from 400 mothers having infant aged from 2-6 months and attended to primary health unit for immunization of their children. More than half of mothers (59%) had an idea on starting breast feeding within 1 hour (table 2) but in practice only 43.5% of mothers started the breast feeding within 1 hour (table 5) this was lower than the findings of the 2008 EDHS<sup>(13)</sup>, which showed that 56% of the mothers breastfed their infants within the first hour and this was because they were given some type of liquid until the mother's breast milk flowed freely .

While Chaudhary et al<sup>(14)</sup> reported only 10% mothers knew that they had to start breast feeding within ½-1 hr of birth and in practice 41.5% mothers started breast feeding within ½-1hr of birth.

WHO recommends that appropriate BF practices include on demand and not less than 10 times day and night<sup>(25)</sup>. In our finding this was well known by the majority of mothers (93%) on demand (table2) but in practice only 75%

mothers were giving BF on demand (table 5). This was similar to the value reported from studies conducted in Egypt, 80.3% of the mothers reported breastfeeding on demand<sup>(23)</sup>, while in Sweden, most of the mothers reported that they breastfed on demand<sup>(24)</sup>. Breast feeding at one side until whole breast is emptied out should be the practice among mothers. This way allows baby getting the hind milk, which is required for brain development. In our finding, only 7.5% mothers knew that they had to breast feed on one side until whole breast was emptied (table 2) but 14.5% were practicing (table 5). This was similar to Chaudhary et al<sup>(14)</sup> who reported that, only 5% of mothers knew they had to breastfeed on one side until whole breast was emptied but 15% were practicing. Breastfeeding is an important public health strategy for improving infant and child morbidity and mortality, improving maternal morbidity<sup>(26)</sup> of in our finding, lower percentage of mothers knew the protective role of BF against different infections for the baby or brain and GIT development (figure 1) while the majority of mothers don't know the protective effect against cancer and about half of mothers knew protective effect in delaying conception (figure 2). This reflect lack of knowledge regarding the benefits of BF especially to mothers. This was similar to Abul-Fadl et al<sup>(27)</sup> who reported that lower percentage of mothers in upper Egypt knows about the protective effects of breastfeeding, particularly against breast cancer and the lowest level of knowledge was about the potential contraceptive effect of exclusive breastfeeding.

Through Promotion Program conducted in Gaza by Abu Hassan & Abu Hammad<sup>(22)</sup> they found that 62.1% of the

subjects in the posttest were able to mention the BF benefits to baby compared to 31.02% in the pretest and mothers' knowledge about the BF benefits to mothers has improved by around 34% (pretest reading was 19.7% while posttest one was 53.6%), indicating importance the interventions conducted to improve mothers' knowledge and practices towards the breast feeding.

The present study showed that the mean of total knowledge score was higher with significant difference ( $p < 0.05$ ) among working mothers, with increasing level of education of the mothers (table 4,7) this was consistent with Chaudhary et al<sup>(14)</sup> who reported that working mothers and mothers with higher educational level were considered to have good knowledge while Mehta<sup>(15)</sup> mentioned only educational level was statistically significant with regard knowledge about benefits of breast feeding.

Antenatal education and breastfeeding counseling seemed to be necessary for successful breastfeeding during the first 6 months of life. The study reflect the role of media and the health care unit in providing the correct knowledge since, mothers who received knowledge from Media & combined source were with higher knowledge score than mothers who received from PHC workers (table 4,7) this may reflect the shortage of antenatal care services like counseling conducted from the public sector EDHS 2008 results indicate that health providers did not provide proper advice to pregnant women about breastfeeding<sup>(13)</sup>, also, El-Mougi et al<sup>(21)</sup> conducted a study in Egypt to examine social and medical factors affecting breastfeeding, and found that antenatal care promoted the breastfeeding practices. In another study conducted in

turkey revealed the proportion of exclusive breastfeeding was significantly high among participants who had antenatal education on BF<sup>(16)</sup>

In the current study the percentages of mothers who knew they shouldn't give artificial formula or fluids in first 6 months were 63% and 25% respectively (table 2) while in practice 31% of mothers gave artificial formula, 85% of mothers gave fluids (Table 5). On the other hand, nearly half of mothers (49%) had an idea that EBF should for the first 6 months (table 2) the percent of our participants who practiced EBF was 12.5%. Nearly half of them (44%) at the age of 2 months others at age of 4 and 6 months 28% (table 5, 6). In Egypt,<sup>(23)</sup> reported that although breastfeeding is initiated early for the majority of children, only 9.7% of the mothers remained exclusively breastfeeding for 6 months. Giving herbs was a common practice by 75% and artificial feeding by 14.8%. Also, Abul-Fadl et al<sup>(27)</sup> showed that two-thirds of the mothers in both UE and LE introduce herbal drinks or decoctions to their babies in the first 6 months. One-third of the mothers in both upper lower Ehypt and LE give infant milk formula before their babies get 6 months old. In Ethiopia, Seid et al<sup>(28)</sup> reported that 74.2% of infants received EBF which declined to 70.8% at age of 2-3 months and 47.5% at the age of 4-5 months, while 45.3% of infants six months and older received EBF when asked retrospectively.

Our results showed significant association between EBF & maternal age, age of child, male sex, early breastfeeding initiation after delivery, good knowledge and absence of breast feeding difficulties (table 6). After multivariate analysis by adjusted logistic regression, significant association only

was found with male sex of child, early initiation of breast feeding and knowledge figer score (table 8). This was similar to Al Ghwass and Ahmed findings<sup>(23)</sup> who concluded that significant association was found with maternal age, antenatal care, early breastfeeding initiation after birth, male infant, absence of breastfeeding difficulties, and no use of teats and pacifiers

While, Seid et al<sup>(28)</sup> found that maternal occupation, prenatal EBF plan, place of delivery, mode of delivery and receiving counseling/advice on infant feeding were significantly and independently associated with the EBF practice.

Regarding breast feeding problems low percentages of mothers knew how to manage insufficient milk supply. About one third of mothers said that they should express the breast to manage breast engorgement while, most of mothers knew the causes of nipple soreness and laceration (table 3). In fact, about 5% of women actually had physiologic insufficient milk supply<sup>(19)</sup>. In practice (14%) of mothers experienced insufficient milk supply for their babies (table 5) and this was lower than reported in others studies<sup>(17, 18, 19)</sup> and this was the most common reason for stopping BF as reported by Al-Binali (19)

### **Conclusion and Recommendations:**

Although overwhelming scientific evidence supporting the integral role of BF in the survival, growth and development of a child as well as in the health of mother, there was a lack of knowledge and correct feeding practice of children regarding EBF. Working and educated mothers have good knowledge. Counseling for mothers on EBF needs to be improved and health care workers need to be better trained to provide

counseling services during antenatal care visits. There is also a great need to create awareness of optimal breastfeeding practices and behavioral change among mothers and conduct an intervention to identify different factors affecting these feeding practices.

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**Table1: Sociodemographic Characteristics of Interviewed mothers**

Variable	Number (400)	Percent
Age groups(years):		
<20	26	6.5
20-30	238	59.5
≥30	136	34.0
Mean age 28.06±5.8		
Marital status		
Married	392	98.0
Widow\Divorced	8	2.0
Housewife Education		
Illiterate	42	10.5
Read and write	24	6.0
Basic	106	26.5
Secondary	188	47.0
University	40	10.0
Occupation		
Housewife	98	24.5
Employed	302	75.5
Number of children		
One	66	16.5
Two	90	22.5
Three	150	37.5
More than three	94	23.5
Sex of last child		
Male	194	48.5
Female	206	51.5
Age of child		
Two months	98	24.5
Four months	104	26.0
Six months	198	49.5

**Table 2: Distribution of Lactating mothers by general knowledge toward breastfeeding**

Variable	N=400	%
<b>1- Best time to initiate BF after delivery</b>		
Within 1h *	236	59.0
2-3 hours	102	25.5
4 hours and above	62	15.5
<b>Times to BF day and night</b>		
On demand*	372	93.0
10 times & less	28	7.0
<b>Pattern of BF</b>		
One side at time	30	7.5
Both side at time	370	92.5
<b>Giving a baby Artificial Formula in her/his first six months</b>		
No*	252	63.0
Yes	148	37.0
<b>Giving a baby fluids in her/his first six months</b>		
No*	100	25.0
Yes	300	75.0
<b>Duration of EBF</b>		
3 months & less	62	15.5
4 – 5 months	142	35.5
6 months*	196	49.0
<b>Cleaning breast before feeding</b>		
Yes*	94	23.5
No	306	76.5

\*correct answer

**Table 3: Distribution of mothers by their knowledge about some breastfeeding problems**

Variable	N =400	
	N	%
<b>Mothers' knowledge about the management of scanty milk</b>		
Continue BF	48	12.0
Give the baby AF by bottle*	162	40.5
Increase the time of a single BF	10	2.5
Increase BF frequency day and night	44	11.0
Give the baby fluids (tea, herbals) by bottle*	140	35.0
<b>Mothers' knowledge about the management of breast engorgement</b>		
Stop BF during engorgement*	114	28.5
Increase times of BF	44	11.0
Express the breast and give the milk to the baby	146	36.5
Massage of the areola	6	1.5
Put warm compresses on breast before BF	25	7.0
Massage the whole breast*	62	15.5
<b>Mothers' knowledge about the causes of nipple soreness and laceration</b>		
Poor positioning	144	36.0
The baby suckles for long time	134	33.5
The baby suckles the nipples and the areola*	8	2.0
The baby suckles the nipples only	114	28.5

\*wrong answer

**Table 4: Distribution of Interviewed women According to their Total Knowledge Score by Sociodemographic Data**

Variable	Mean of total knowledge		Significance*	
	Mean $\pm$ SD	Range	T/F*	P value
Age groups(years):			0.569	0.57
<20	10.5 $\pm$ 2.3	7-14		
20-30	10.04 $\pm$ 2.9	5-19		
30-	10.5 $\pm$ 3.11	4-22		
Working Status				
Not working	9.6 $\pm$ 2.6	4-46	0.17	0.00
Working	12.5 $\pm$ 2.5	9-17		
Education				
Illiterate & Read and write	9.45 $\pm$ 3.6	4-22	3.4	0.000
Basic	9.8 $\pm$ 2.4	5-15		
Secondary	10.35 $\pm$ 2.76	5-19		
University	11.9 $\pm$ 3.11	5-17		
Marital status				
Married	10.22 $\pm$ 2.9	4-22	0.01	0.98
Widow	10.25 $\pm$ 3.2	7-13		
Number of children				
1 child	10.48 $\pm$ 2.2	7-16	1.01	0.19
2	10.06 $\pm$ 2.75	5-15		
$\geq$ 3	10.2 $\pm$ 3.17	4-22		
Sex of child				
Male	10.11 $\pm$ 2.89	4-19		
Female	10.3 $\pm$ 3.98	5-22	0.511	0.6
Source of knowledge about BF during ANC				
TV	11.7 $\pm$ 3.5	4-22		0.001
PHC health worker	9.95 $\pm$ 2.69	5-18	4.35	
Combined	10.8 $\pm$ 2.95	5-19		

Mean total score of all participants was 10.22 $\pm$ 2.94

T test was used for comparing two groups and ANOVA more than two groups

F-test ANOVA

**Table 5: Distribution of mothers by their breastfeeding practices**

Variable	N =400	
	N	%
Time interval between birth and first breast feed:		
Within 1h	174	43.5
2-3h	124	31.0
≥4h	102	25.5
Cleaning breast before feeding		
No	260	65.0
Yes	22	5.5
Sometimes	118	29.5
Feeding pattern		
one side a time	58	14.5
Both sides a time	342	85.5
Giving artificial formula :		
No	276	69.0
Yes	124	31.0
Giving fluids (herbals, tea, water, etc.)		
No	60	15.0
Yes	340	85.0
If any complementary food is given beside BF:		
No	100	25.0
Yes	300	75.0
Age at which to introduce fluids or complementary food:		
1 – 2 months	16	5.3
3 – 4 months	208	69.3
5 – 6 months	76	25.3
Times BF day and night:		
Less than 10 times	100	25
On demand	300	75
Exclusive breast feeding practice		
No	350	87.5
Yes	50	12.5
Experiencing difficulties BF a baby:		
No difficulties	316	79.0
Scanty milk	58	14.0
Engorgement	8	2.0
Inflammation	12	3.0
Sore	8	2.0

**Table 6: Association of Exclusive breast feeding and Sociodemographic characteristics and knowledge score**

	Exclusive BF Practices				Significance	
	Yes=50		No =350			
	N	%	N	%	Chi-square	P
Age of mothers					11.4	0.003
- <20 years	8	16.0	18	5.1		
- 20-30	32	64.	206	58.9		
- >30 years	10	20.0	126	36.0		
Sex					9.2	0.02
- Female	16	32.0	158	45.1		
- Male	34	68.0	192	54.9		
Age of the child					10.1	0.006
- 2 months	22	44.0	84	24		
- 4 months	14	28.0	90	25.7		
- 6 months	14	28.0	166	56		
- Working status					4.08	0.053
- working	18	36.0	80	22.9		
- Not-working	32	64.0	270	77.1		
Education						
- Illiterate & read and write & basic	22	44.0	150	42.9		
- Secondary High	28	56.0	200	57.1	0.02	0.87
Knowledge score					23.7	0.00
- Good knowledge	44	88.0	180	51.4		
- Poor knowledge	6	12.0	170	48.6		
Time of BF initiation					47.8	0.00
- Within the first hour	44	88	130	37.1		
- 1-3hour	0	0	124	35.4		
- >=4 hour	6	22	96	27.5		
Facing problems during BF					46	0.000
- Yes	0	0	84	24.0		
- No	50	100.0	266	76.0		

**Table 7: Multivariate logistic regression model showing Predictors of good knowledge**

Variables	P value	OR( 95% CI
Age	0.074	1.56 (0.95-2.5)
Occupation (working versus not working)	0.000	8.24 (3.2-21.19)
Sex (male versus female)	0.66	1.15 (0.614-2.16)
Order of the last child	0.052	0.61 (0.37-1.003)
Mother education ( high & secondary education versus basic, illiterate and read write	0.865	0.946 (0.49-1.79)
Source of knowledge(Media & combined source versus Raedat and PHC workers	0.016	3.07(1.23-7.67)

**Table 8: Multivariate logistic regression model showing Predictors of exclusive breast feeding**

Variables	P value	OR( 95% CI
Age( less than 30 versus > years	0.366	1.98(0.45-8.7)
Occupation (working versus not working)	0.37	1.4(0.65.- 3.2)
Sex (male versus female)	0.003	3.02(1.45-6.3)
Order of the last child	0.42	0.62(0.19-1.98)
Early initiation of breast feeding( within 1 <sup>st</sup> hour versus/after 1 <sup>st</sup> hour	0.000	13.2(5.19-33.47)
Mother education ( high & secondary education versus basic, illiterate and read write	0.165	0.56(0.26-1.2)
Knowledge score (good versus poor knowledge)	0.000	7.9(2.9-21.3)



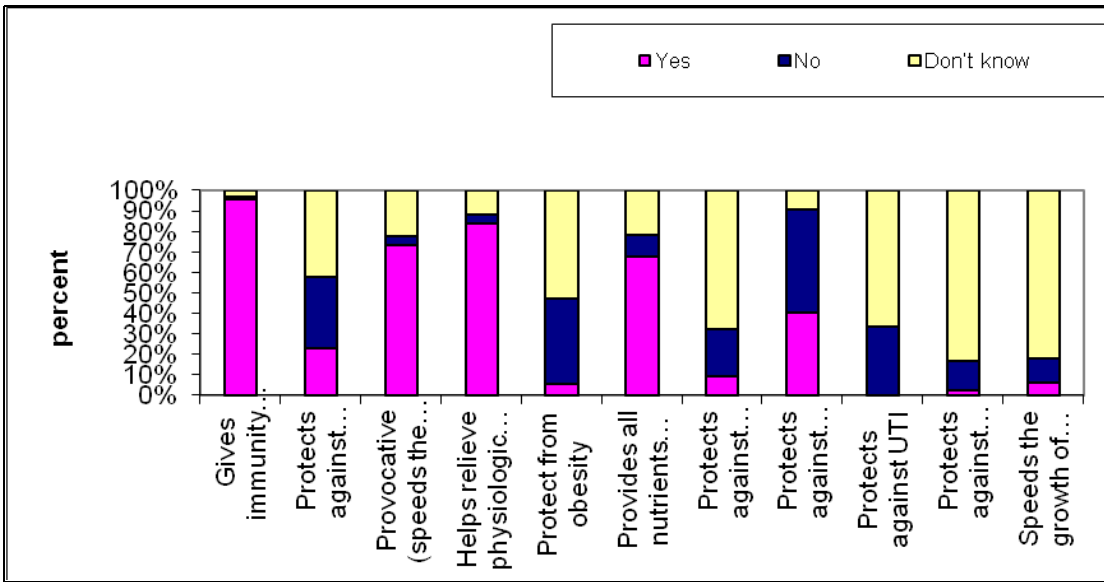


Figure (1): Knowledge of benefits of BF to baby

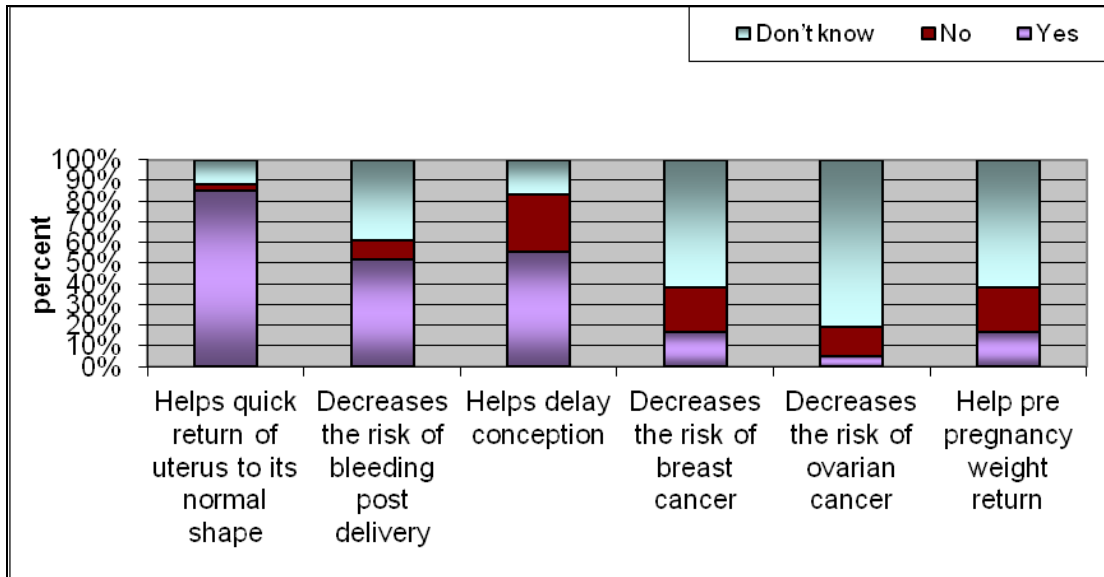


Figure (2): Knowledge of benefits of BF to mothers