

Compliance of Mothers to the Breastfeeding Guidelines in Alexandria

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ABSTRACT: The compliance of mothers to the six items related to their practice of the 10 steps of successful breastfeeding (Immediate breastfeeding initiation, rooming in, breast-feeding on demand, avoiding prelacteal feeding, avoiding use of pacifier, and avoiding use of bottles) are of great importance to achieve better breastfeeding outcomes. The objectives of the study were to estimate the extent of compliance of mothers to these items and to identify some factors associated with this compliance. The study was fulfilled through a cross-sectional approach. It was conducted at the MCH and FH centers in Alexandria Governorate. The study included 390 mothers accompanying their breast-fed infants aged 0-12 months to well baby clinics at those health centers. A pre-designed structured interview questionnaire was constructed to collect the data required from mothers. Only 29.8% of mothers started breastfeeding within the 1st hour after labour, 57.2% of them practiced rooming in, and 78.7% of them regulated breastfeeding according to their infants needs. Prelacteal feeding was given to 58.2% of the infants. 22.8% of mothers used pacifiers and 41% used bottles for their infants. Scoring of the overall compliance of mothers to the 6 points related to their breastfeeding practice of the WHO/UNICEF joint statement showed that 24.1% of mothers scored satisfactory level, 41.3% average level while 34.6% scored as low level of compliance. The level of mothers compliance was positively affected by their level of knowledge about breastfeeding and the six items ($\chi^2=267.582$, $p<0.01$) and by the increase in the child order (FET=15.618, $p<0.01$). It was adversely affected by their social level ($\chi^2=19.853$, $p<0.01$), education ($\chi^2=28.289$, $p<0.01$) and working status ($\chi^2=17.439$, $p<0.01$). It was adversely associated with the history of neonatal asphyxia (FET=17.909, $p<0.01$), the delivery in health settings (FET=44.278, $p<0.01$), and the delivery by caesarian section ($\chi^2=40.193$, $p<0.01$).

INTRODUCTION

Breastfeeding is the process of feeding an infant with milk produced in a woman's mammary glands.⁽¹⁾ Breastfeeding has a major role to play in public health, promoting health in both short and long term for baby and mother.⁽²⁾ Each year new evidence contributes to the knowledge of breastfeeding's role in the survival, growth, and development of a child as well as the health and well-being of a mother.⁽³⁾ UNICEF (2007) reported that the child who is breastfed is almost three times more

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likely to survive infancy than a child who is not breastfed.⁽⁴⁾ Increasing optimal breastfeeding practices could save as many as 1.5 million infant lives every year.⁽⁵⁾

WHO and UNICEF (1989) had issued a joint statement on "Ten Steps to Successful Breastfeeding" to be implemented in every health facility providing maternity care and care for the newborn babies.⁽⁶⁾ The compliance of mothers to the items related to their practice of this joint statement (immediate breastfeeding initiation, rooming-in, breastfeeding on demand, avoiding prelacteal feeding, avoiding use of pacifier, and avoiding use of bottles) is of great importance to achieve better breastfeeding outcomes.⁽⁷⁾

In the year 1993, training on Baby Friendly Hospital Initiative (BFHI) had commenced in Egypt.⁽⁸⁾ Also Ministry of Health and Population (MOHP) since 1997 is implementing a continuous program of in-service training for both physicians and nurses to support and promote good

practice in breastfeeding.⁽⁹⁾ Despite these mentioned efforts, only 42.9% of babies began breastfeeding within one hour of birth in the year 2005, a marked reduction from the figure of the year 2000 which was 57%. The rate of exclusive breastfeeding (EBF) in the year 2005 was 52.4 percent among infants zero to three months old, which dropped to 38.3 percent among infants zero to five months old. This leaves hundreds of thousands of children vulnerable to disease and death. Around 2.4 percent of all babies in Egypt die in the first month.⁽¹⁰⁾

Low compliance of mothers with breastfeeding recommendations in developing countries was reported.⁽¹¹⁾ Also several studies in Egypt reported poor performance of both mothers and health care providers on the successful steps to breast feeding.⁽¹²⁻¹⁴⁾ The aim of this study is to highlight the influence of breastfeeding promotion and support efforts on mother's compliance to the 6 items related to their

practice and to identify some factors associated with this compliance.

SUBJECTS AND METHODS

The study was conducted through a cross sectional approach at the Maternal and Child Health center (MCH) and Family Health centers (FH) in Alexandria (Egypt). It included mothers and their accompanied children aged 0-12 months visiting the well baby clinics at the chosen MCH and FH centers.

The sample size of mothers was calculated using the computer package Epi info 6. Assuming a percentage of exclusive breast-feeding at 6 months of 15.7%,⁽¹⁵⁾ with precision of 3 and confidence level of 95%, the sample size calculated yielded 362 mothers. Three MCH centers and three FH centers were chosen randomly (SRS). Equal numbers of 65 mothers were selected from each of the chosen centers. The total study sample was three hundred and ninety mothers

An interviewing questionnaire with

mothers was designed to collect the following data:

- Some socio-demographic data of mothers and family, final assessment of family social level which was calculated according to the modified Fahmy and El- Sherbini social score.⁽¹⁶⁾
- Personal characteristics of the last child; age, gender, and order of the child.
- Natal and post natal history; type and place of labour, newborn condition and rooming in after labour
- Knowledge of mothers about the benefits of breastfeeding and the six items related to their breastfeeding practice (mentioned in WHO/UNICEF joint statement to successful breastfeeding). One point was given to each right option about breastfeeding benefits mentioned from the listed answers in this part of questionnaire In the two open ended questions, probing was used to help mother to mention all

benefits she knows. One point for the right option in each of other six questions was given. The total points summed up 13 points. The overall level of mother knowledge was scored as following: bad level for sum of 1-7 points (less than 50%), average level for sum of 8-11 points (50%-less than 85%), and good level for sum of 12-13 points (85% and above).

- Compliance of mothers to the 6 items related to their breastfeeding practice. The six items determining quality of compliance of mothers are breastfeeding initiation time after labour, infant rooming in, giving newborn prelacteal feeding, mother on demand/scheduled breastfeeding, pacifier use for child, bottle use in child feeding. Each item was given one point if actively complied and zero if not complied. The level of compliance was assessed as follows; bad compliance for < 3 points, average compliance for

3-4 points, good compliance for 5-6 points.

- Causes of non-compliance to any of the 6 items; causes of delay of breastfeeding initiation, mother receiving post natal breastfeeding education, advisor of prelacteal feeding, and causes of early complementary feeding.

Statistical analysis:

The SPSS 13.0 statistical software package was used for data entry and analysis. Cross tabulation using Chi-square and Fissure Exact test were applied to get statistical significance of relations between variables. Logistic regression using adjusted odd ratio was implemented to get the significance in multi factorial affection.

RESULTS

The mean age of mothers was 27.7(\pm 4.97) years. About 60% of the sample had secondary and university education level while only 19.7% were illiterate. The majority of mothers (89%)

were not working. As regard the social level of families of mothers 41.5% of them scored high level, 42.3% scored average level and 16.2% low social level. Concerning the sex of infants 50% of the sample was males and 50% females. The modal age group of infants (31.8%) was <6 months, while the mean age was 5.83(\pm 3.39) months. More than 50% of children were of 2nd or 3rd order (Table 1).

As regards the scoring of overall mothers knowledge about the 6 points related to their practice of the WHO/UNICEF joint statement of successful breastfeeding; 10% reached satisfactory level, 64.6% average level, and 25.4% of the sample attained poor level. (Figure 1)

Regarding the compliance of mothers to the six items, the study reveals that only 29.8% of mothers started breastfeeding within the 1st hour after labour while all the others started later. The delay of more than 24 hours occurred among 30.6% of the

sample. Only 57.2% of mothers practiced rooming in, while prelacteal feeding was given to 58.2% of their infants and 78.7% of them were regulating breastfeeding according to their infants needs. As regard using artificial teats; 22.8% of mothers were using pacifiers and 41% were using bottles for their infants. Scoring of the overall compliance of mothers to the 6 points related to their breastfeeding practice of the WHO/UNICEF joint statement showed that 24.1% of mothers reached satisfactory level, 41.3% had average level while 34.6% scored low level of compliance (Table 2 and Figure 2).

Table 3 shows that 88.2% of mothers hadn't been trained about breastfeeding practices after labour. The commonest cause of delayed breastfeeding initiation as mentioned by mothers was for their need to rest (59.8%) followed by giving newborn pre-lacteal feeding (25.8%). Also the table shows that the advice of pre-lacteal feeding came mainly from doctors (65.2%),

followed by nurses or midwives (17.6%). As regard the causes of starting complementary feeding before the end of the 6th month of child age; the maternal-related factors were the leading causes in 46.3% of the cases (13.7%: mothers believe suitable age, 12.8%: mother perceived breast milk insufficiency, 5.7%: mother work, 14.1%: mother decision without mentioned cause) while health providers were responsible for about 42.7% of the cases (26.4%: doctors advice, 16.3% nurses advice).

Concerning the factors affecting mother compliance to the six items, table 4 reveals that the highest proportion of all age groups of mothers demonstrated average compliance level with no significant difference. The improved social level has a significant adverse effect on mother compliance. The difference was statistically significant ($\chi^2=19.853$, $p<0.01$). The compliance of mothers decreased with the improvement of their education level.

($\chi^2=28.289$, $p<0.01$). Non-working mothers were more compliant to the six items of successful breastfeeding ($\chi^2=17.439$, $p<0.01$). As regards the level of knowledge of mothers, it has a significant positive effect on mother compliance, The difference was statistically significant. ($\chi^2=267.582$, $p<0.01$), (Table 4)

Table (5) reveals that there is a trend of increasing rate of good compliance with the increase of age of infants however there is no definite pattern concerning rate of poor compliance and there is no statistical difference. On the other hand the table reveals a positive relation between child order and mother compliance and the difference was statistically significant (FET=15.618, $p<0.01$). Also it reveals a significant relation between the newborn neonatal condition and the mother compliance. The difference was statistically significant (FET=17.909, $p<0.01$). There is no relation between the sex of the child and the mother compliance.

The study demonstrates that the compliance of mothers is significantly affected by the type of facility in which the mother had her labour. Compliance of mothers who had their labour at home was better than the compliance of mothers who had their labour at health facilities. Also mothers who had labour at governmental hospitals were more compliant than mothers who had labour at private hospitals. The difference was statistically significant (FET=44.278, $p < 0.01$). The same table illustrates a significant relation between type of labour and the mother compliance. The difference was statistically significant ($\chi^2=40.193$, $p < 0.01$), (Table 6).

DISCUSSION

Many researches worldwide concluded improvement of breastfeeding indicators on applying the 10 steps included in WHO/UNICEF joint statement (1989) for successful breastfeeding.^(17,18) Past efforts indicate that improved mothers practices stand out as being the most promising

means of reinforcing the prevalence and duration of breastfeeding.⁽¹⁹⁾

In the current study scoring of the overall compliance of mothers to the 6 items related to their breastfeeding practice of the WHO/UNICEF joint statement showed that about one-fourth of mothers reached satisfactory level (Figure 2). The situation in Taiwan (2006) was somewhat better, thus the average compliance to those 6 items registered 37.3%.⁽²⁰⁾ The better compliance in Taiwan is due to implementing the study in baby friendly hospitals.

Early initiation and establishment of breastfeeding following birth are crucial for increasing and reinforcing the prevalence and duration of breastfeeding.⁽¹⁹⁾ Breastfeeding within an hour of delivery is associated with the establishment of longer and more successful breastfeeding and ensure that the infant will get the highly nutritional and immunological benefits of colostrum.⁽²¹⁾ A systematic review of

breastfeeding initiation, which included 59 studies found that hospital practices that promote early breastfeeding initiation increase breastfeeding duration.⁽²²⁾ In the present study, early breastfeeding within 1st hour reached 29.8% (Table 2) compared to 43% in Egypt (DHS, 2005)⁽¹⁵⁾, 42% in Saudi Arabia⁽²³⁾, 40% in Yemen ⁽²⁴⁾, and 18.3% in Lebanon.⁽²⁵⁾ Decreased early breastfeeding initiation in Alexandria according to the current study compared to Saudi Arabia and Yemen may be due to high percentage of hospital deliveries in addition to high proportion of educated women, both was linked with decreased compliance to the six items. (Tables 1, 4, and 6). Breastfeeding initiation also differs globally according to the variation in implementation of BFHI, thus in a recent study carried in baby friendly hospitals in Switzerland Geneva, compliance for early breastfeeding initiation reached 93%⁽²⁶⁾, compared to 65% in Malawi⁽²⁷⁾ and 29% in Taiwan.⁽²⁰⁾

Rooming-in is one of the ten steps that have been shown to have a positive association with breastfeeding outcomes, a practice which should be encouraged from birth. Mothers who delivered at hospitals allowing rooming-in started breastfeeding within few hours after birth compared with those who delivered at hospitals that did not allow rooming-in.⁽²⁸⁾ In the present study only 57.2% of the sample of infants were roomed with their mothers (Table 2), compared to 14.9% in Taiwan.⁽²⁰⁾ This may be referred to the wrong concept among doctors that the infant will be exposed to infection if he is left in his mother ward.

Although breastfeeding is almost universally practiced among mothers in most parts of the developing world, the predominant pattern is mixed feeding where an infant is given breast milk and other supplements such as water, infant formula, and local and commercially prepared cereals. Usually this leads to decrease of infant suckling and improper

breast milk production and failure of continuation of breastfeeding.⁽²⁹⁾ In the current study more than half of the infants (58.2%) were given prelacteal feeding, (Table 2). This is in line with EDHS, 2005⁽¹⁵⁾ (51.3%) and a local study in rural Egypt (Bilbeis) where 60% of infants were given prelacteal feeding.⁽³⁰⁾ A near figure (65%) was reported in a study in Taiwan.⁽²⁰⁾

Breastfeeding on demand is believed to be the normal way of feeding infants and it is one of the WHO/UNICEF recommendations for successful breastfeeding.⁽²⁹⁾ There is a variation in breastfeeding patterns between different infants, and from day-to-day.⁽²²⁾ In the current study 78.7% of mothers practiced breastfeeding on demand (Table 2) compared to 93.6% in a study in Alexandria⁽¹²⁾, 93% in Switzerland Geneva⁽²⁶⁾, and 75% in western Nigeria.⁽³¹⁾

Infant pacifiers are artificial molded teats used to calm and sooth babies while they are crying. Daily pacifier use is

associated with reduced breastfeeding duration.⁽³²⁾ Many lactation consultants believe that the use of pacifiers can cause nipple confusion (infant's difficulty in achieving the correct oral configuration, and suckling pattern necessary for successful breastfeeding). Many early breast-feeding failures are attributed to nipple confusion.⁽³³⁾ In a study in Giza-Egypt use of a pacifier within the first month was associated with cessation of exclusive breastfeeding before 6 months.⁽³⁴⁾ In the findings of the current study 22.8% of mothers stated that they are using pacifiers (Table 2) compared to 78% in Austria (Graz)⁽³⁵⁾, and 51.4% in Taiwan.⁽²⁰⁾ Less use of pacifiers in the current study compared to Austria and Taiwan may be due to the more emphasis by health providers in advice of mothers to avoid use of pacifier (as noticed in health centers during data collection).

In many of breastfed infants, bottles may be used to provide juice, water, some

herbals or added breast milk substitute. Besides the already recognized negative effects, bottle feeding could negatively affect breastfeeding technique. Bottle prohibition was associated with better exclusive breastfeeding⁽³⁶⁾ In the present study 41% of mothers used bottles in their infants feeding (Table 2). This is most probably due to the predominant use of bottles in providing herbal compounds such as Anise and karaway to calm down their crying infants. In a study in Emirates, non-milk supplements fed to babies included water, tea, juice, anise, and babunj (local herbal drinks) and the preferred method of feeding the supplements was the feeding bottle.⁽³⁷⁾

In agreement with the previous studies^(23, 38-40) the present study reported that the level of compliance of mothers to successful breastfeeding recommendations were adversely affected by their education, working state, and social level. The better compliance in mothers of lower social and

education level may be in part due to their economic inability to adopt other infant feeding methods other than full breastfeeding. On the other hand the educated working mothers and mothers who attained better social level usually have many commitments and duties which don't leave enough time for them for relaxed nursing of their babies. Also mother compliance improved with the increase in the child order, most probably due to the effect of accumulating experience. Better compliance was also noticed with normal home deliveries and delivery of healthy non-asphyxic newborns. (Tables 5 and 6). This is most probably due to better breastfeeding supporting environment in the homes and the better chances for rooming in and early breastfeeding initiation.

The results of the current study regarding the factors affecting mother compliance to successful breastfeeding recommendations are in line with previous

Egyptian studies.^(41-43) Contrary to the previous results no socio demographic factors of mothers showed any relationship to the mother's decision to breastfeed.^(44-46) In Iran in the year 2003⁽⁴⁵⁾ caesarian delivery and hospitalization of the infant during the neonatal period was associated with higher rate of bottle feeding compared with newborns who had been delivered normally, discharged early, and nursed at home.

In contrast to the current study, In Croatia (2003), there were significantly greater proportion of women with higher educational level breast-feed their babies, as compared with less educated women.⁽⁴⁷⁾ This may be due to more successful health education programs about breastfeeding in Croatia. In Malawi, giving birth outside a health facility was a risk factor for unfavorable breastfeeding outcomes.⁽²⁷⁾ This may be due to better breastfeeding supporting practice in health facilities in Malawi.

RECOMMENDATIONS

- More health education programs (through mass media) must be directed for mothers about breastfeeding and the items related to mother practice of the WHO/UNICEF joint statement of the ten steps for successful breastfeeding .
- Training of all mothers (especially primigravida) post delivery on the practice of breastfeeding before leaving health setting.
- More insurance must be done for the rights of working mother to practice breastfeeding through restudying and renovation of women work legislations.
- Doctors and nurses must be exposed for more in-service training about successful breastfeeding.
- Enhancing the role of community support through more spread and extension of non-governmental committees for promoting and supporting breastfeeding.

Table 1: Distribution of study sample of mothers and their infants by some socio- demographic characteristics

Socio-demographic characteristics	(n=390)	%
Mother age(years)		
18-	88	22.6
24-	162	41.5
30-	113	29.0
36-42	27	6.9
Mean=27.71±4.97		
Mother education		
Illiterate	77	19.7
Literacy certificate	06	1.5
Primary school	23	5.9
Preparatory school	50	12.8
Secondary school	127	32.6
University certificate	107	27.5
Mother working state		
Working	43	11.0
Not working	347	89.0
Family social level		
High level	162	41.5
Average level	165	42.3
Low bevel	63	16.2
Age of the infant(months)		
0-	119	30.5
3-	124	31.8
6-	78	20.0
9-12	69	17.7
mean=5.83±3.39		
Sex of the infant		
Male	195	50.0
Female	195	50.0
Child order		
1-	153	39.2
2-	209	53.6
4-	24	6.2
6+	4	1.0

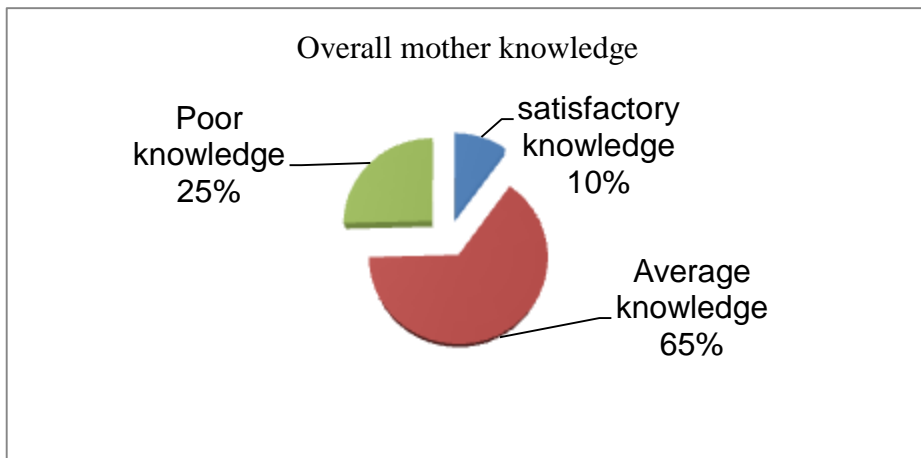


Figure 1: Distribution of study sample of mothers by their level of knowledge

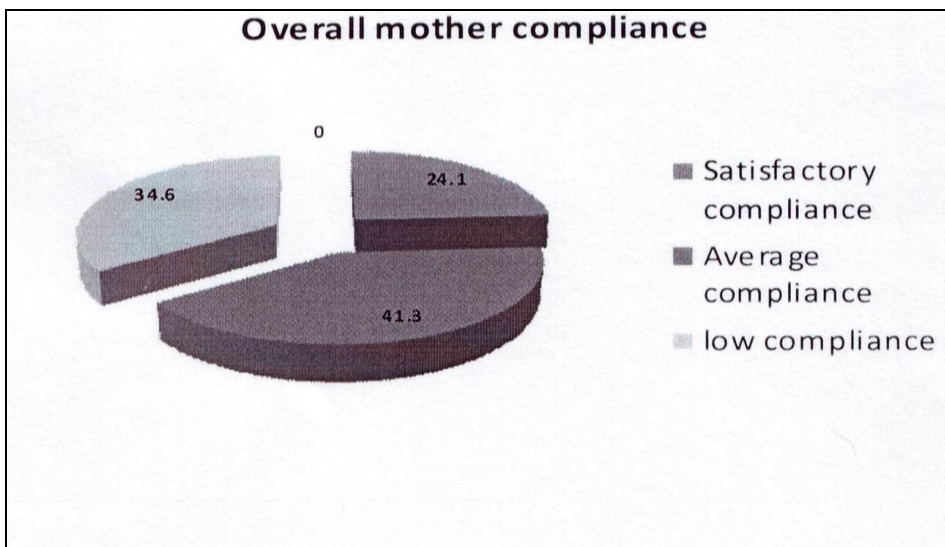


Figure 2: Distribution of study sample of mothers by their level of compliance.

Table 2: Distribution of study sample of mothers by compliance to the 6 points related to their practice of WHO/UNICEF joint statement.

Compliance of mothers	No.	%
Timing of breastfeeding initiation post delivery (n=376)*		
1st one hour	112	29.8
Within 3 hour	71	18.9
Within 6 hour	55	14.6
Within 24 hour	23	6.1
More than 24 hours	115	30.6
Mother infant rooming in (n=390)		
Yes	223	57.2
No	167	42.8
Giving newborn prelacteal feeding (n=390)		
Yes	227	58.2
No	163	41.8
Breastfeeding regulation (n=376)*		
According infant need	296	78.7
Time scheduling	80	21.3
Pacifier using (n=390)		
Yes	89	22.8
No	301	77.2
Bottle use (n=390)		
Yes	160	41.0
No	230	59.0

14 mothers didn't practice breastfeeding*

Table 3: Distribution of study sample of mother's by the causes of non-compliance

causes of non compliance	No.	%
Post natal breast-feeding practice training		
Yes	46	11.8
No	344	88.2
Causes of delay of breastfeeding initiation (n=264)*		
Mother need to rest	158	59.8
Newborn refusal	20	7.6
Giving newborn prelacteal feeding	68	25.8
Admission of newborn to NICU	18	6.8
Prelacteal feeding advisors (n=227)**		
Doctors	148	65.2
Nurse or midwife	40	17.6
Grand mother or other family member	32	14.1
Mother herself	07	3.1
Causes of early introduction of complementary feeding: (No.=227)***		
Doctor prescription	60	26.4
Nurse prescription	37	16.3
Grand mother decision	24	10.6
Working mother	13	5.7
Working mother	01	0.4
Infant illness	29	12.8
Mother perceived breast milk insufficiency	31	13.7
Mothers believed that EBF is up to 4 months	32	14.1
Mother decision(No cause)		

*14 mothers didn't practice breastfeeding, +112 mothers have initiated breastfeeding during 1st hour.

**163 breastfed children have not received prelacteal feeding.

***14 children were not breastfed +48 breastfed children were given complementary feeding after 6 month age+101 breastfed children were still on exclusive breastfeeding.

Table 4: Distribution of mothers according to their compliance level and some of their socio-demographic characteristics and their level of knowledge.

Item	Level of mother compliance						Total	
	Low level		Average level		Satisfactory Level		No.	%
	No.	%	No.	%	No.	%		
Age of mothers	10	11.4	53	60.2	25	28.4	88	100
18-								
24-	36	22.2	93	57.4	33	20.4	162	100
30-	25	22.1	61	54.0	27	23.9	113	100
36-42	05	18.5	13	48.2	09	33.3	27	100
Total $\chi^2=7.289, P=0.288$	76	19.5	220	56.4	94	24.1	390	100
Social level High level	41	25.3	99	61.1	22	13.6	162	100
Average level	28	17.0	87	52.7	50	30.3	165	100
Low level	07	11.1	34	54.0	22	34.9	63	100
Total $\chi^2=19.853, P=0.001$	76	19.5	220	56.4	94	24.1	390	100
Education level	09	11.7	41	53.2	27	35.1	77	100
Illiterate								
Literacy certificate	2.0	33.3	2.0	33.3	2.0	33.4	6	100
Primary school	2.0	8.7	12.0	52.2	9.0	39.1	23	100
Preparatory school	10	20.0	28	56.0	12	24.0	50	100
Secondary school	21	16.5	72	56.7	34	26.8	127	100
University School	32	29.0	65	61.7	10	9.3	107	100
Total $\chi^2=28.289, P=0.003$	76	19.5	220	56.4	94	24.1	390	100
Working state	16	37.2	26	60.5	1	2.3	43	100
Working								
Non-working	60	17.3	194	55.9	93	26.8	347	100
Total $\chi^2=17.439, P=0.000$	76	19.5	220	56.4	94	24.1	390	100
Satisfactory level	0	0.0	7	17.9	32	82.1	39	100
Average level	9	3.6	181	71.8	62	24.6	252	100
Poor level	67	67.7	32	32.3	0	0.0	99	100
Total $\chi^2=267.582, P=0.000$	76	19.5	220	56.4	94	24.1	390	100

Table 5: Distribution of mothers according to their compliance level and some of child characteristics.

Item	Level of mother compliance						Total	
	Low level		Average level		Satisfactory Level		No.	%
	No.	%	No.	%	No.	%	No.	%
Child age								
0-	20	16.8	69	58.0	30	25.2	119	100
3-	27	21.8	72	58	25	20.2	124	100
6-	17	21.8	41	52.6	20	25.6	78	100
9-12	12	17.4	38	55.1	19	27.5	69	100
Total $\chi^2=2.753$, $P=0.843$	76	19.5	220	56.4	94	24.1	390	100
Child order								
1 st child	39	25.5	89	58.2	25	16.3	153	100
2-3 rd child	33	15.8	119	56.9	57	27.3	209	100
4-5 th child	4	16.7	11	45.8	9	37.5	24	100
6 th child and more	0	0	1	25	3	75	4	100
Total $FET=15.618$, $P=0.009$	76	19.5	220	56.4	94	24.1	390	100
Sex of child								
Male	37	19.0	109	55.9	49	25.1	195	100
Female	39	20.0	111	56.9	45	23.1	195	100
Total $\chi^2=0.241$, $P=0.886$	76	19.5	220	56.4	94	24.110	390	100
Newborn state post delivery.								
Normal	64	17.6	205	56.5	94	25.9	363	100
Asphyxic cured by resuscitation	40	66.7	02	33.3	0	0.0	06	100
Asphyxic, admitted to NICU	08	38.1	13	61.9	0	0.0	21	100
Total $FET=17.909$, $p=0.000$	76	19.5	220	56.4	94	24.1	390	100

Table 6: Distribution of mothers according to their compliance level and its relation to health facility and type of delivery

Item	Level of mother compliance						Total	
	Low level		Average level		Satisfactory Level			
	No.	%	No.	%	No.	%	No.	%
Health facility of delivery								
Home delivery	2	5.0	16	40.0	22	55.0	40	100
Governmental Health centre	0	0.0	05	83.3	1	16.7	06	100
Governmental Hospital	17	12.3	81	58.7	40	29.0	138	100
Private hospital	55	28.1	114	58.2	27	13.7	196	100
Private clinic	02	20	04	40	04	40	10	100
Total FET=44.278, P=0.000	76	19.5	220	56.4	94	24.110	390	100
Type of labour								
Normal labour	29	13.7	106	50.0	77	36.3	212	100
Caesarian section	47	26.4	114	64.0	17	9.6	178	100
Total $\chi^2=40.193$, P=0.000	76	19.5	220	56.4	94	24.1	390	100

REFERENCES

- 1- Leon N, Lutter C, Ross J, Martin L. Quantifying the benefits of breastfeeding: a summary of the evidence. Washington: PAHO (Pan American Health Organization); 2002.
- 2- Renfrew M, Mcfadden A, McCormic F, Herbert G, Thomas J. Promotion of breastfeeding initiation and duration: evidence into practice briefing. London: NICE (National Institute for Health and Clinical Excellence); 2006.
- 3- Barkly L. Simple antenatal preparation improves breastfeeding practice. Public Health, Prevention. 2007 (cited 2007/7/13). Available from: www.medscape.com/viewarticle/550406
- 4- UNICEF. WHO-UNICEF Multi-Country Infant And Young Child Feeding Workshop In Damascus. UNICEF 2007. (cited 2008/ 7/24). Available from: <http://www.medicalnewstoday.com/articles/71003.php>
- 5- WHO. Community-based strategies for breastfeeding promotion and support in developing countries. Geneva: WHO; 2003.
- 6- Della A, Helen L. Breastfeeding initiation and birth setting practices: a review of the literature. Journal of Midwifery & Women's Health. 2007;52(3): 273-80.
- 7- Murray E, Rickett S, Dellaport J. Hospital practices that increase breastfeeding duration: results from a population-based study. Birth. 2007;34(3):202-11.
- 8- WHO. Current status of Baby Friendly Hospital Initiative, country Profile (12/9/00). WHO; 2002.
- 9- Ministry of Health and Population (MOHP), Egypt. IMCI Health facility situation analysis. General Administration of Childhood Illness Program. Egypt: MOHP; 2005.
- 10- UNICEF (Egypt). UNICEF calls on medical professionals in Egypt to promote breastfeeding in hospitals. UNICEF (Egypt). 2007. (cited 2008/7/24). Available from http://www.unicef.org/egypt/media_3937.html
- 11- Lauer J, Betrán A, Victora C, Onís M, Barros A. Breastfeeding patterns and exposure to suboptimal breastfeeding among children in developing countries: review and analysis of nationally representative surveys. BMC Medicine. 2004; 2(26) (cited 2008/7/24). Available from: <http://www.biomedcentral.com/1741-7015/2/26>
- 12- Kamel N, Ibrahim A, Aref S, Ziyu F. Current status of breastfeeding in Alexandria Governorate: a community based study. Eastern Mediterranean Health Journal. 1997; 3(3):511-8.
- 13- Kharboush I. Survey of knowledge, attitude, practices regarding breastfeeding in Behera governorate general hospital. Egypt: UNICEF; 1992. P: 17-92.
- 14- Nossier S, Abu Nazel M. Timing, pattern and determinants of breastfeeding initiation. Bulletin of High Institute of Public Health. 1995;25(2): 310-4.
- 15- El-Zanaty F, way A. Egyptian Demographic and Health Survey 2005. Egypt: Ministry of Health and Population, National Population Council, El-Zanaty and Associates, and Macro; 2006:151-4.
- 16- Fahmy SI, El-Sherbini AF. Determining simple parameters for social classification for health research. Bull HIPH. 1983;13:95-107.
- 17- Braun M, Giugliani E, Soares M, Giugliani C, Oliveira A, Danelon C. Evaluation of the impact of the baby-

- friendly hospital initiative on rates of breastfeeding. *American Journal of Public Health*. 2003; 93(8):1277-9.
- 18- Hofvander Y. Breastfeeding and the Baby Friendly Hospitals Initiative (BFHI): Organization, response and outcome in Sweden and other countries. *Acta Paediatrica*. 2005; 94: 1012-6.
- 19- Okolo S, Ogbonna C. Knowledge, attitude and practice of health workers in Keffi local government hospitals regarding Baby-Friendly Hospital Initiative (BFHI) practices. *European Journal of Clinical Nutrition*. 2002; 56(5):438-41.
- 20- Chiena L, TaibKuei C , Chi ChiuY. The number of baby friendly hospital practices experienced by mothers is positively associated with breastfeeding: a questionnaire survey. *International Journal of Nursing Studies*. 2007;44(7)1138-46.
- 21- Holman D , Grimes M . Patterns for the initiation of breastfeeding in humans. Bellingham: Western Washington University (Center for Studies in Demography and Ecology);2003.
- 22- Moore E, Anderson G, Bergman N. Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database of Systematic Reviews* 2003. (cited 2008/7/26). Available from: <http://www.cochrane.org/reviews/en/ab003519.html>
- 23- Al-Shoshan A. Factors affecting mother's choices and decisions related to breast-feeding practices and weaning habits. *Pakistan Journal of Nutrition*. 2007; 6 (4): 318-22.
- 24- Ghaleb T. Lack of breastfeeding in Yemen puts babies at risk. *Yemen Observer*.2007. (cited 2008/8/07). Available from: <http://www.yobserver.com/sports-health-and-lifestyle/10012767.html>
- 25- Batal M, Boulghourjian C, Abdullah A, Afifi R. Breast-feeding and feeding practices of infants in a developing country: A national survey in Lebanon. *Public Health Nutrition*. 2006; 9(3):313-9.
- 26- Rosenberg K, Stull , AdlerM, Kasehagen L, Kovach A. Impact of hospital policies on breastfeeding outcomes. *Breastfeeding Medicine*. 2008;3(2):110-6.
- 27- Kamudoni P, Maleta K, Shi Z, Ottesen G. Infant feeding practices in the first 6 months and associated factors in a rural and semi urban community in Mangochi district, Malawi. *J Hum Lact*. 2007;23(4): 325-32.
- 28- Gokgay G, Uzel N, Kayatiirk F, Neyzi O. Ten steps for successful breast-feeding: assessment of hospital performance, its determinants and planning for improvement. *Child Care, Health and Development*.1997; 23(2):187-200.
- 29- Renfrew M, Pindoria S, WadeA. Support for breastfeeding mothers: a systematic review. *Pediatric and Perinatal Epidemiology*. 2003;17 (4): 407-17.
- 30- Hossain M, Radwan M, Arafa S, Habib M , DuPont H. Prelacteal infant feeding practices in Rural Egypt. *Journal of Tropical Pediatrics*. 1992; 38(6):317-22.
- 31- Ogbonna C, Okolo SN, Ezeogu A. Factors influencing exclusive breast-feeding in Jos, Plateau State, Nigeria. *West*. 2000; 19(2):107-10.
- 32- Hodne K, Frohna J. Pacifier use is associated with decreased duration of breastfeeding. *University of Michigan*.2003.
- 33- Schwartz R, Guthrie K. Infant pacifiers: an overview. *Clinical Pediatrics*. 2008;47(4):327-31.
- 34- Hakim I, Al-Ashmawy I. Breast-feeding patterns in a rural village in Giza, Egypt.

- American Journal of Public Health.1992;82(5): 731-2.
- 35- Pansy J, Zotter H, Sauseng W, Schneuber S, Lang U, Kerb R. Pacifier use: what makes mothers change their mind. *Acta Paediatrica*.2008; 97(7):968-71.
- 36- Limpvanuspong B, Patrachai S, Suthutvoravut S, Prasertsawat P. Impact of bottle feeding prohibition on exclusively breastfeeding. *J Med Assoc Thai*. 2007;90(10):1977-80.
- 37- Al-Mazroui M, Oyejide C, Bener A. Breastfeeding and supplemental feeding for neonates in Al-Ain, United Arab Emirates. *Journal of Tropical Pediatrics*.1997;42:304-6.
- 38- Ogbeide DO, Siddiqui S, Al-Khalifa IM, Karim A. Breast-feeding in a Saudi Arabian community. profile of parents and influencing factors. *Saudi Med J*. 2004;25(5):580-4.
- 39- Khassawneh M, KhaderY, Amarin Z, Alkafajei A. Knowledge, attitude and practice of breastfeeding in the north of Jordan: a cross-sectional study. *International Breastfeeding Journal*.2006.(cited 2008/8/7). Available from: <http://www.internationalbreastfeedingjournal.com/content/1/1/17>
- 40- Pascale K, Laure N, Enyong O. Factors associated with breast-feeding as well as the nutritional status of infants (0-12) months: an epidemiological study in Yaounde, Cameroon. *Pakistan Journal of Nutrition*. 2007;6(3):259-63.
- 41- Abd El-Fattah MN, Eldin TM. Determinants of breastfeeding in Egypt. (cited 2007/8/8).Available from: <http://www.popline.org/docs/117470>
- 42- Hossain M, Reves R, Radwan M, Arafa S, Habib M, Dupont H. Breast-feeding in Egypt. *The Journal of the Royal Society for the Promotion of Health*.1994;114(6): 290-6.
- 43- El-Gilany A. Breastfeeding indicators in Dakahlia Governorate. *Eastern Mediterranean Health Journal*.2003;9(5):961-73.
- 44- Al-Kibsi H. Breastfeeding could reduce child mortality in Yemen. *Yemen Observer*.2007. (cited 2008/8/7). Available from: <http://www.yobserver.com/reports/10011750.html>
- 45- Shiva F, Nasiri M. A Study of feeding patterns in young infants. *Journal of Tropical Pediatrics*.2003;49(2):89-92.
- 46- Al-Fadli1 H, Jasem L, Masoud G. Factors influencing the mother's decision to breast-Feed in Ahmadi Region, Kuwait. *Kuwait Medical Journal*. 2004; 36 (2): 108-12.
- 47- Berovi N. Impact of socio demographic features of mothers on breastfeeding in Croatia: questionnaire study. *Croat Med J*.2003; 44(5):596-600.