

Effectiveness of lactation counseling on maintenance of breastfeeding after cesarean section

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المستخلص:

الهدف: تحديد فاعلية المشورة في الإرضاع على مداومة الإرضاع من الثدي بعد العملية القيصرية للمجموعة التجريبية.

المنهجية: أجريت دراسة شبه تجريبية على عينة غير احتمالية (غرضية) من (٦٠) امرأة لديها عملية قيصرية وقسمت العينة إلى مجموعتين (٣٠) منهن اعتبرت كعينة تجريبية من مستشفى فاطمة الزهراء التعليمي للولادة والأطفال، ونفذت المشورة في الإرضاع عليهن والمجموعة الأخرى (٣٠) كعينة ضابطة من مستشفى بغداد التعليمي في مدينة بغداد. نفذت الدراسة للمدة من ٢٤ نيسان إلى ٢ آب ٢٠١١. استعملت الاستبانة كأداة لجمع البيانات لتحقيق هدف الدراسة وتتكون من ثلاث أجزاء تتضمن الخصائص الديموغرافية، الإنجابية ومداومة الإرضاع من الثدي للعينة. تم إجراء الدراسة الاستطلاعية لاختبار ثبات الاستبانة وجرى صدق المحتوى من خلال ١١ خبير وأستخدم الإحصاء الوصفي والاستدلالي في تحليل البيانات.

النتائج: أظهرت النتائج إن معظم الأمهات أعمارهن ضمن سن الإنجاب المثالي يتراوح من (٢٠-٢٤) سنة ومعظمهن ذوات مستوى تعليمي واطى و ربات بيوت و يعيشون في مناطق حضرية مع مستوى اجتماعي اقتصادي متوسط، و(٥٣,٣%) (٥٠%) على التوالي منهن بكريات. تبين الدراسة إن (١٠٠%) من المجموعة التجريبية استمروا بالإرضاع من الثدي بينما (٧٦,٧%) من المجموعة الضابطة استمروا بالإرضاع من الثدي وأسباب عدم الاستمرار بالإرضاع من الثدي هي عدم كفاية الحليب والوليد يرفض الرضاعة، (٧٣,٣%) من المجموعة التجريبية أرضعن رضاعة خالصة بينما (٢٦%) من المجموعة الضابطة أرضعن رضاعة خالصة.

التوصيات: أوصت الدراسة بإعادة تفعيل دور المستشفيات الصديقة للأطفال في تعزيز الإرضاع من الثدي بواسطة تنفيذ الخطوات العشرة لإنجاح الإرضاع من الثدي ومشورة النساء في الإرضاع خلال الحمل وبعد الولادة وبخاصة التي لديها عملية قيصرية ومالها من دور مهم في مداومة الرضاعة من الثدي لمدة ستة أشهر بعد الولادة.

Abstract

Objective(s): To determine the effectiveness of lactation counseling on maintenance of breastfeeding after cesarean section for study group.

Methodology: A quasi-experimental study was conducted on non probability sample (purposive) of (60) women who had cesarean section and sample divided in to two groups (30) of them as a study group from Fatima Al-Zahra'a Maternity and Pediatric Teaching Hospital & implement lactation counseling on it and another group (30) as control group from Baghdad Teaching Hospital in Baghdad City. Study implemented for the period of April 24th 2011 to August 2nd 2011. A questionnaire was used as a tool of data collection to fulfill with objective of the study and consisted of three parts, including demographic, reproductive characteristics and maintenance of breastfeeding of the sample. A pilot study was carried out to test the reliability of the questionnaire and content validity was carried out through the 11 experts. Descriptive and inferential statistical analyses were used to analyze the data.

Results: The results of the study revealed that most mothers their ages within ideal fertility age which ranged between (20-24) years, and most of them had low educational level, and were housewives, and live in urban area, with moderate socioeconomic status, and (53.3%), (50%) respectively of them were primigravida. The study shows that (100%) of the study group had continued breastfeeding, while (76.7%) of the control group had continued breastfeeding and the reasons for discontinuation of breastfeeding for control group are not enough milk and newborn refuse lactation, (73.3%) of the study group had exclusive breastfeeding, while (26%) of the control group had exclusive breastfeeding.

Recommendations: The study recommended to reactivate the role of Baby-Friendly Hospitals Initiative in promoting of breastfeeding by implementation of ten steps successful of breastfeeding, and breastfeeding counseling for women during pregnancy and after birth especially who have cesarean section which has important role on maintenance of breastfeeding up to 6 months after birth.

Keywords: Effectiveness, Lactation Counseling, Maintenance, Breastfeeding, Cesarean Section

Introduction:

Breastfeeding is a natural process that seems to have been adversely affected by “modernization” of society. A day widely accepted that breast milk is the best for the baby, it is also a well-known fact that exclusive breastfeeding rates in early infancy are still too low ⁽¹⁾.

World Health Organization (WHO) and United Nations Children’s Fund (UNICEF) recommend that all mothers should breastfeed their children exclusively for the first 6 months and thereafter they should continue to breastfeed for as long as the mother and child wish, and both appropriate and sufficient weaning food should be added after six months of life ⁽²⁾. One of the factors affecting breastfeeding initiation and duration is birth by cesarean section. A study in Mexico shows that cesarean section is a risk factor for not initiating breastfeeding, and breastfeeding for less than one month, but it is unrelated to

Methodology:

A quasi-experimental study was conducted on non probability sample (purposive) of (60) women who had cesarean section divided in to two groups (30) of them as a study group from Fatima Al-Zahra'a Maternity and Pediatric Teaching Hospital & implement lactation counseling on it and another group (30) as control group from Baghdad Teaching Hospital in Baghdad City & didn't implement lactation counseling on it. Data were collected for the period of April 24th 2011 to August 2nd 2011. Mothers were eligible to participate in the study if they met the following selection criteria: Women have first & second baby only; Normal healthy pregnancy; Women have cesarean section for first time or second time (either elective or emergency); Able to performed consent and Undergone general anesthesia. And baby

the duration of breastfeeding among women who breastfeed their babies for one month or more ⁽³⁾.

Some studies carried out in the last decade show that face- to- face counseling by trained health workers is effective not only for reducing the early introduction of liquids or solids, but also increasing the duration of breastfeeding ⁽⁴⁾. So counseling is the process by which a health worker can listening and learning skills and building confidence to support mothers and babies to implement good feeding practices and help them overcome difficulties ⁽⁵⁾.

The objectives of present study were to determine the effectiveness of lactation counseling on maintenance of breastfeeding after cesarean section for study group.

included in the study if he met the following selection criteria: Healthy newborn; Normal weight and the baby (Rooming in) with his mother. In addition, participants were excluded from the study if their mothers: Have three previous cesarean section & more; have complication in cesarean section; have complicated pregnancy such as preeclampsia / eclampsia and gestational diabetes, etc; have chronic disease such as diabetes, hypertension, and heart diseases and Previous infertility women. Participants were excluded from the study if their baby: Multiple gestation births twins, triple, etc; Newborn with low birth weight; Premature baby (baby born before 37 gestational weeks) and Infants with any congenital malformation, or genetic diseases that might affect the study results.

A questionnaire was used as a tool of data collection to fulfill with objective of the study which consisted of three parts; including demographic characteristics, reproductive characteristics and maintenance of breast-feeding of the sample? A pilot study was carried out to test the reliability of the questionnaire and content validity was carried out through the 11 experts. Study group women received individual education on the following topics at the specified periods: early initiation of breastfeeding, breastfeeding physiology, how breastfeeding work, differences between fore & hind milk, important of colostrum, benefit of breastfeeding, types of infant feeding, breastfeeding techniques (positioning & attachment, include latch on), signs of adequacy breast milk, stool patterns of breastfeeding infant and management of lactation problems (engorgement, sore nipples & breast infection). The women were encouraged to ask questions during the educational session. During the follow up (postpartum discharge) for four weeks by

phone call contact interview to detect effectiveness of lactation counseling and made the maintenance questionnaire for three times phone contact with women and lactation counseling questionnaire implemented. Data are analyzed through the use of SPSS (Statistical Process for Social Sciences) and Excel (Statistical package). Through the application of descriptive statistical data analysis include (Frequencies, Percentage, Mean, Standard Deviation and Mean score) and inferential statistical data analysis include Chi-Square test for testing the different among several observed frequencies and their expected. The criteria of probability levels were used to determine the significance of the statistical test as following: Highly Significance ($P < 0.01$), Significant ($P < 0.05$) and Non-Significant ($P \geq 0.05$). All questions rated according to the following criteria: Yes= 2, No= 1. So the cut-off-point= 1.5.

Results:

Table 1. Distribution of Socio-demographic characteristic for study and control groups

Variables	Study group (n=30)		Control group (n=30)		χ ²	df	P-value ≥ 0.05	C.S.
	No.	%	No.	%				
Age (years)								
15 - 19	6	20	8	26.7	1.952	4	0.745	NS
20 - 24	13	43.3	11	36.7				
25 - 29	5	16.7	5	16.7				
30 - 34	5	16.7	3	10				
35 - 39	1	3.3	3	10				
$\bar{x} \pm SD$	23.93 ± 5.50		23.7 ± 6.46					
Educational level								
Primary school graduate & less	22	73.3	20	66.7	3.816	2	0.148	NS
Intermediate & secondary school graduate	4	13.3	9	30				
Institute & college graduate & more	4	13.3	1	3.3				
Occupation								
Employed	3	10	2	6.7	0.218	1	0.640	NS
Non employed	27	90	28	93.3				
Place of residence								
urban	29	96.7	29	96.7	0	1	1.000	NS
Rural	1	3.3	1	3.3				
Type of family								
Nuclear	6	20	3	10	1.176	1	0.278	NS
Extended	24	80	27	90				
Socioeconomic status								
Low	15	50	12	40	0.606	1	0.436	NS
Moderate	15	50	18	60				

χ²= Chi- Square, df= Degree of Freedom, C.S.= Comparative Significant, NS= Non-Significant

Table (1) shows that the highest percentages (43.3%) (36.7%) respectively for study and control groups at age group (20-24) years with mean age (23.93 ± 5.50 years) (23.7 ± 6.46 years), (73.3%) (66.7%) were primary school graduate & less, (90%) (93.3%) were housewives, (96.7%) for study and control groups were from urban area, (80%) (90%)

were living in the extended families and (60%) for control group was in moderate socioeconomic status, while (50%) for study group was in moderate and low socioeconomic status. There were no statistical significant differences between study and control groups in socio-demographic characteristics.

Table 2. Distribution of Reproductive Characteristic for Study and Control Groups

Variables	Study group (n=30)		Control group (n=30)		χ^2	df	P-value ≥ 0.05	C.S.
	No.	%	No.	%				
No. of gravida								
1	16	53.3	15	50	4.222	4	0.197	NS
2	13	43.3	8	26.7				
3	1	3.3	4	13.3				
4	0	0	2	6.7				
5	0	0	1	3.3				
No. of parity								
1	18	60	16	53.3	0.268	1	0.602	NS
2	12	40	14	46.7				
No. of Alive children								
1	18	60	16	53.3	0.268	1	0.602	NS
2	12	40	14	46.7				
Age at the marriage								
15 - 19	14	46.7	18	60	1.233	3	0.745	NS
20 - 24	7	23.3	5	16.7				
25 - 29	6	20	4	13.3				
30 - 34	3	10	3	10				
$\bar{x} \pm SD$	22 \pm 5.44		20.6 \pm 5.30					
*Place of previous delivery								
Hospital	11	91.7	14	100	1.36	1	0.243	NS
Home (Midwife)	1	8.3	0	0				
*Type of previous delivery								
NVD	5	41.7	3	21.3	1.388	1	0.238	NS
C/S	7	58.3	11	78.7				
Gender of the baby								
Male	19	63.3	17	56.7	0.278	1	0.598	NS
Female	11	36.7	13	43.3				
Weight at birth								
Normal (2500-4000)gm	30	100	29	96.7	1.017	1	0.313	NS
More than (4000) gm	0	0	1	3.3				
$\bar{x} \pm SD$	2911.6 \pm 316.9		3046.6 \pm 451					
Types of C/S								
Elective	15	50	17	56.7	0.266	1	0.605	NS
Emergency	15	50	13	43.3				

* No. of study group have previous delivery (12); No. of control group have previous delivery (14); C.S. = Comparative Significance; C/S= cesarean section; df= Degree of Freedom; NS= Non-Significant, χ^2 = Chi- Square; NVD= Normal Vaginal Delivery

Table (2) shows that highest percentages (53.3%) (50%) respectively for study and control group were primigravida and (60%) (53.3%) respectively were primipara, (60%) (53.3%) respectively had first

alive child, (46.7%) (60%) respectively at married age group (15-19) years with mean age at marriage (22 \pm 5.44 years) (20.6 \pm 5.30 years), (91.7%) (100%) delivered in hospital and (58.3%) (78.7%) had cesarean section

previously, (63.3%) (56.7%) their newborns were male, (100%) (96.7%) their newborn were within normal weight (2500-4000) gm, (50%) (56.7%) had elective cesarean section, while (50%) (43.3%) respectively for study and control groups had emergency cesarean section. There were no statistical significant differences between study and control groups in reproductive variables.

Table 3A. Maintenance of Breastfeeding Regarding Continuation of Breastfeeding for Study and Control Groups during Three Sequence Follow up after Childbirth

Items	Answer	First follow up (2nd week)						Second follow up (3rd week)						Third follow up (4th week)					
		Study group n=30			Control group n=30			Study group n=30			Control group n=30			Study group n=30			Control group n=30		
Continuation of breastfeeding		No.	%	MS	No.	%	MS	No.	%	MS	No.	%	MS	No.	%	MS	No.	%	MS
Do you continue on breastfeeding	Yes	30	100	2.00	25	83.3	1.83	30	100	2.00	22	73.3	1.73	30	100	2.00	23	76.7	1.77
	No	0	0		5	16.7		0	0		8	26.7		0	0		7	23.3	
		$\chi^2= 5.454, P= 0.0195, C.S.= S$						$\chi^2= 9.23, P= 0.002, C.S.= HS$						$\chi^2= 7.924, P= 0.004, C.S.= HS$					

χ^2 = Chi- Square, P= Probability level at $P \geq 0.05$, C.S.= Comparative Significant, S= Significant, HS= High Significant, MS= Mean Score

Table (3A) revealed that there were statistical significant differences with high mean score among study and control groups on three follow up of mother and continuation of breastfeeding.

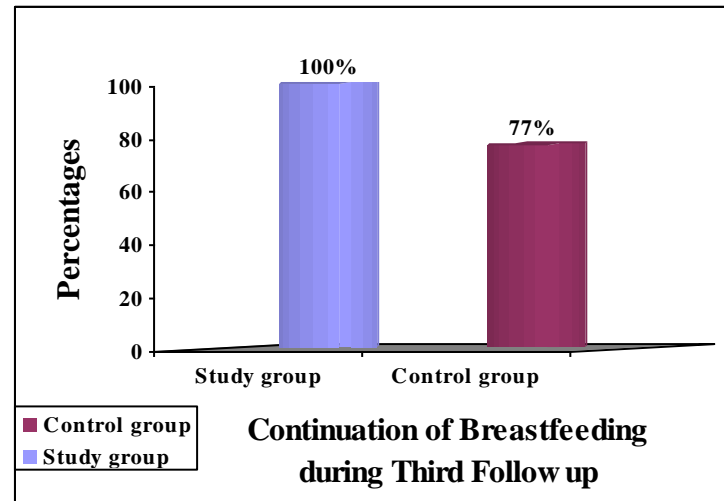


Figure 1. Maintenance of Breastfeeding among Study and Control Groups after One Month of Childbirth

Lactation counseling, Maintenance of breastfeeding and cesarean section

Table 3B. Maintenance of Breastfeeding Regarding Lactation Status for Study and Control Groups during Three Sequence Follow up after Childbirth

List	Items	Answer	First follow up (2nd week)						Second follow up (3rd week)						Third follow up (4th week)					
			Study group n=30			Control group n=25			Study group n=30			Control group n=22			Study group n=30			Control group n=23		
			No.	%	MS	No.	%	MS	No.	%	MS	No.	%	MS	No.	%	MS	No.	%	MS
1.	Lactation status																			
1.1.	Exclusively (day & night)	Yes	19	63.3	1.63	7	28	1.28	22	73.3	1.73	5	22.7	1.23	22	73.3	1.73	6	26	1.26
		No	11	36.7		18	72		8	26.7		17	77.3		8	26.7				
			$\chi^2= 7.353, P= 0.007, C.S.= HS$						$\chi^2= 11.365, P= 0.000, C.S.= HS$						$\chi^2= 11.093, P= 0.000, C.S.= HS$					
1.2.	Partially	Yes	11	36.7	1.37	18	72	1.72	8	26.7	1.27	17	77.3	1.77	8	26.7	1.27	17	74	1.74
		No	19	63.3		7	28		22	73.3		5	22.7		22	73.3		6	26	
			$\chi^2= 7.353, P= 0.007, C.S.= HS$						$\chi^2= 11.365, P= 0.000, C.S.= HS$						$\chi^2= 11.093, P= 0.000, C.S.= HS$					
2.	The lactation from both breast																			
2.1.	Change of breast during the lactation in each feeding	Yes	23	76.7	1.77	17	68	1.68	23	76.7	1.77	13	59	1.59	23	76.7	1.77	14	61	1.61
		No	7	23.3		8	32		7	23.3		9	41		7	23.3		9	39	
			$\chi^2= 0.367, P= 0.325, C.S.= NS$						$\chi^2= 1.471, P= 0.081, C.S.= NS$						$\chi^2= 1.455, P= 0.118, C.S.= NS$					
2.2.	Using both breasts in one feeding	Yes	5	16.7	1.17	6	24	1.24	6	20	1.20	7	32	1.32	6	20	1.20	7	30.3	1.30
		No	25	83.3		19	76		24	80		15	68		24	80		16	69.7	
			$\chi^2= 0.457, P= 0.340, C.S.= NS$						$\chi^2= 0.945, P= 0.142, C.S.= NS$						$\chi^2= 0.409, P= 0.195, C.S.= NS$					
2.3.	The baby prefer one breast in feeding	Yes	2	6.7	1.07	2	8	1.08	1	3.3	1.03	2	9	1.09	1	3.3	1.03	2	8.7	1.09
		No	28	93.3		23	92		29	96.7		20	91		29	96.7		21	91.3	
			$\chi^2= 0, P= 0.483, C.S.= NS$						$\chi^2= 2.201, P= 0.158, C.S.= NS$						$\chi^2= 1.58, P= 0.204, C.S.= NS$					
3.	How do you practice breastfeeding																			
3.1.	On demand	Yes	30	100	2.0	25	100	2.0	30	100	2.0	22	100	2.0	30	100	2.0	23	100	2.0
		No	0	0		0	0		0	0		0	0		0	0		0		
			-						-						-					

Table 3B. (Continued)

List	Items	Answer	First follow up (2nd week)						Second follow up (3rd week)						Third follow up (4th week)					
			Study group n=30			Control group n=25			Study group n=30			Control group n=22			Study group n=30			Control group n=23		
			No																	
4.	What are type of positions do you practice during lactation																			
4.1.	Sitting position	Yes	30	100	2.00	25	100	2.0	30	100	2.0	22	100	2.0	30	100	2.00	23	100	2.00
		No	0	0		0	0		0	0		0	0		0	0		0		
			-						-						-					
4.2.	Side lying position	Yes	8	26.7	1.27	4	16	1.1	7	23.3	1.2	2	9	1.0	7	23.3	1.23	3	13	1.13
		No	22	73.3		21	84		6	23		76.7	3		20	91		9	23	
			$\chi^2= 0.435, P= 0.244, C.S.= NS$						$\chi^2= 2.182, P= 0.083, C.S.= NS$						$\chi^2= 0.509, P= 0.178, C.S.= NS$					
5.	Do you complain from any problems during breastfeeding	Yes	3	10	1.10	7	28	1.2	4	13.3	1.1	7	32	1.3	0	0	1.00	1	4.3	1.04
		No	27	90		18	72		8	26		86.7	3		15	68		2	30	
			$\chi^2= 1.96, P= 0.065, C.S.= NS$						$\chi^2= 1.867, P= 0.052, C.S.= NS$						$\chi^2= 1.077, P= 0.135, C.S.= NS$					
5.1.	Nipple sore	Yes	1	3.3	1.03	6	24	1.2	1	3.3	1.0	5	22.5	1.2	0	0	1.00	0	0	1.00
		No	29	96.7		19	76		4	29		96.7	3		17	77.3		3	30	
			$\chi^2= 6.005, P= 0.017, C.S.= S$						$\chi^2= 3.024, P= 0.016, C.S.= S$						-					
5.2.	Engorgement	Yes	2	6.7	1.07	3	12	1.1	3	10	1.1	3	13.7	1.1	0	0	1.00	0	0	1.00
		No	28	93.3		22	88		2	27		90	0		19	86.3		4	30	
			$\chi^2= 0.913, P= 0.337, C.S.= NS$						$\chi^2= 0, P= 0.238, C.S.= NS$						-					
5.3.	Nipple pain	Yes	0	0	1.00	0	0	1.0	0	0	1.0	0	0	1.0	0	0	1.00	1	4.3	1.04
		No	30	100		25	100		0	30		100	0		22	100		0	30	
			-						-						$\chi^2= 1.077, P= 0.135, C.S.= NS$					

Number of continuation of Breastfeeding for control group in the first follow up =25, second follow up =22 and third follow up=23, χ^2 = Chi- Square, P= Probability level at $P \geq 0.05$, C.S.= Comparative Significant, S= Significant, HS= High Significant, MS= Mean Score

Lactation counseling, Maintenance of breastfeeding and cesarean section

The table (3B) revealed that there were statistical significant differences with high mean score between first follow up of mother in study sample for study and control groups in items (1.1) (exclusive breastfeeding) and (1.2) partial breastfeeding regarding lactation status and item (5.1) (nipple sore) as a problem during breastfeeding.

Concerning the second follow up (3rd week): There were statistical significant differences with high mean score in items (1.1) (exclusive breastfeeding) and (1.2) partial breastfeeding regarding lactation status and item (5.1) (nipple sore) as a problem during breastfeeding.

Concerning third follow up (4th week): There were statistical significant differences with high mean score in items (1.1) (exclusive breastfeeding) and (1.2) partial breastfeeding regarding lactation status.

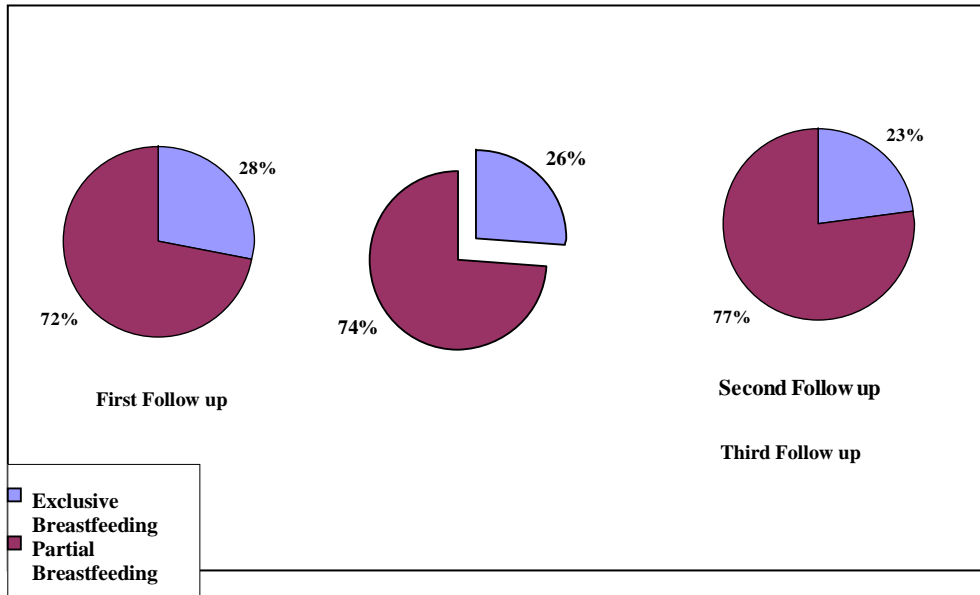


Figure 2. Exclusive Breastfeeding among Control Group during Three Follow up after Childbirth

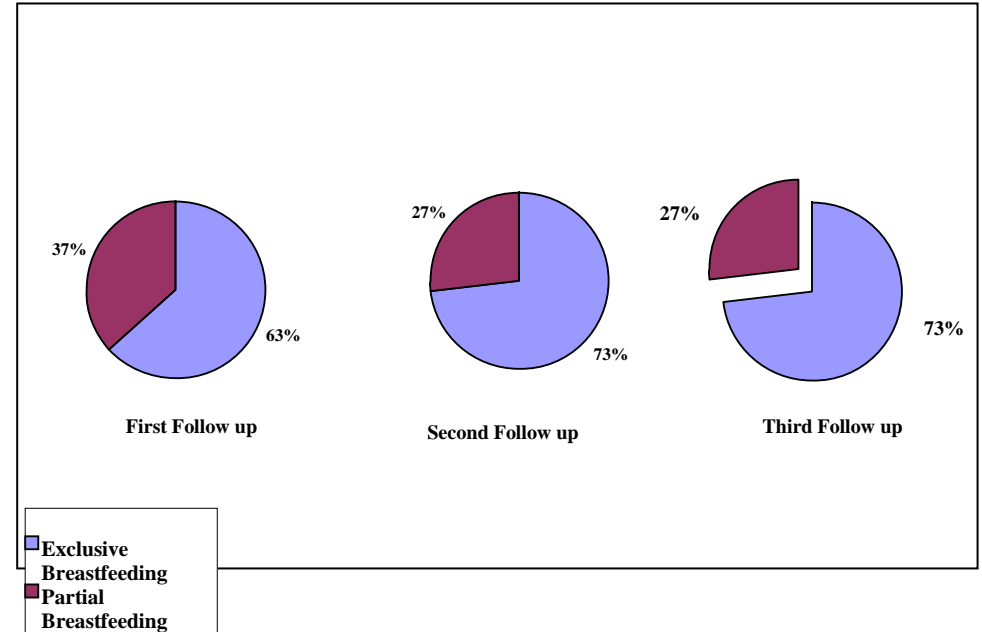


Figure 3. Exclusive Breastfeeding among Study Group during Three Follow up after Childbirth

Table 3C. Reasons for Discontinuation of Breastfeeding for Control Group during Three Sequence Follow up after Childbirth

No.	Items	First follow up (2nd week)		Second follow up (3rd week)		Third follow up (4th week)	
		No.	%	No.	%	No.	%
1.	*Reasons for discontinuation of breastfeeding	Control group n=5		Control group n=8		Control group n=7	
		No.	%	No.	%	No.	%
1.1.	No enough milk	2	40	3	37.5	2	28.7
1.1.1.	Don't sleep between feeding	2	40	1	12.5	1	14.3
1.1.2.	Excretion of stool less than two time daily	0	0	0	0	1	14.3
1.1.3.	No increase in baby weight	1	20	0	0	0	0
1.2.	Pain in the breast	1	20	1	12.5	1	14.3
1.3.	The newborn baby refuse lactation	1	20	3	37.5	4	57
1.4.	Problems in the nipple	1	20	1	12.5	0	0
1.5.	The child sick	1	20	2	25	1	14.3

* More than one answer, n= Number of participate, No.=Number, %= Percentages

The table (3C) shows that the highest percentage (40%) did not have enough milk during first follow up as a reason for discontinuation of breastfeeding.

Concerning the second follow up (3rd week): The highest percentage (37.5%) did not have enough milk in addition, (37.5%) the newborn baby refused lactation as a reason for discontinuation of breastfeeding.

Concerning the third follow up (4th week): The highest percentage (28.7%) did not have enough milk in addition, (57%) the newborn baby refused lactation as a reason for discontinuation of breastfeeding.

Discussion:

Table (1) shows that the mean age for both groups were (23.93 ± 5.50 years) (23.7 ± 6.46 years). These findings are consistent with Froozani et al., who conducted a quasi-experimental study with 120 pairs of mothers and infants in the Islamic Republic of Iran. Mothers (mean age = 23.0 ± 5.5 years) who received breastfeeding education regarding physiology of the mammary gland, breastfeeding techniques, and the importance of exclusive breastfeeding were more likely to exclusively breastfeed their infants and less likely to discontinue breastfeeding at four months (mean age = 23.4 ± 6.4 years) compared to those who did not receive this education ⁽⁶⁾.

The level of education plays important role in influencing a woman to breastfeed the child. It has been found that mothers with a higher education level tend to breastfeed their child for a longer period of time than do their less educated counterparts ⁽⁷⁾. Previous studies have indicated that women who continue employment after the birth of their child are more likely to discontinue breastfeeding early, or never initiate breastfeeding. Also it was reported that maternal employment does influence infant feeding practices. Consequently, this relationship may have repercussions on future health of the infant ⁽⁸⁾.

Women from lower-income families are less likely to breastfeed for a number of reasons,

including less family support for breastfeeding, less ability to seek help with breastfeeding problems, less flexibility with working arrangements, and concerns about breastfeeding in public⁽⁹⁾.

Table (2) shows that highest percentages (60%) (53.3%) respectively were primipara. The study conducted by Piper & Parks who reported that mothers with higher parity were more likely to breastfeed for a longer period of time. Interestingly, they found that each increase in parity by one birth resulted in a 1.7 times greater likelihood of sustaining breastfeeding beyond 6 months postpartum⁽¹⁰⁾. A study conducted by Taylor et al., reported that if a woman breastfeed the first child, she is likely to have breastfed the subsequent children, regardless of how many children she has. Conversely, if a woman does not breastfeed the first child, she is less likely to breastfeed in the future. In 1990, a study of 157 women identified the breastfeeding decision that women make with their first child as the best predictor of later breastfeeding behavior⁽¹¹⁾.

The present study reveals that highest percentages (46.7%) (60%) respectively at married age group (15-19) years with mean age at marriage (22 ± 5.44 years) (20.6 ± 5.30 years). The main reasons given for the mother to start weaning early was insufficient milk, which may be due to the early age of marriage (those who were younger than⁽¹⁹⁾ years old) and early childbirth. Studies indicated that adolescents breastfeeding less often than adults and they hold positive and negative attitudes toward breastfeeding that influence decision-making and breastfeeding⁽¹²⁾.

The present study reveals that (91.7%) (100%) give their birth at hospital, (58.3%) (78.7%) respectively were have cesarean section previously. Mothers who delivered at home were more likely to introduce complementary foods earlier than those delivered in health facility. Mothers who deliver in a health facility in most receive breastfeeding counseling, especially with the revitalization of Baby Friendly Hospital Initiative (BFHI)⁽¹³⁾. Besides the place of delivery, the type of delivery was also related to exclusive breastfeeding status. Vaginal deliveries increased

the odds of exclusive breastfeeding at 6 months. Pain and discomfort associated with cesarean section may prevent the mother from breastfeeding. So there was no relationship between the type of delivery and breastfeeding duration⁽¹⁴⁾. Mothers who delivered by caesarean section were at 1.9 times more risk of stopping breastfeeding and showed shorter duration of lactation than those who delivered vaginally. This could be for several reasons related to the mother's and infant's health after delivery which influences the decision to breastfeed and maintain lactation. In addition, the mother's feeling that she has failed to deliver normally by the vaginal route and her fear of harming her infant through insufficient milk intake make her support the use of artificial feeding. Previous studies have reported that caesarean section delivery was a risk factor for not initiating breastfeeding, and that infants delivered by caesarean section started suckling later and were given bottles more often during the first days of life. This, in addition to lack of antenatal and postnatal education to guide the mother into initiating lactation and maintaining it through regular and extensive breastfeeding, certainly influences the infant's feeding pattern⁽¹⁵⁾.

Boys were more likely to be introduced to complementary feeding early compared with girls. Anecdotal evidence indicates that boys are introduced to complementary foods early because breast milk alone does not meet their feeding demands⁽¹⁴⁾ (P 12).

Also the present study reveals that (100%) (96.7%) respectively were within the normal weight (2500-4000) gm. Mothers have low birth weight babies tend to be breastfed for shorter periods. The study conducted in Brazil and Honduras found a greater duration of exclusive breastfeeding among children born weighing 3100 gm or more. This finding is consistent with the hypothesis that babies with lower birth weight, due to their weaker suckling, would fail to stimulate the establishment of an appropriate production of breast milk⁽¹⁵⁾.

The present study reveals that there are statistical significant differences with high mean score among study and control groups on three follow up of mother and continuation of breastfeeding as shown in table (3A). Mothers who delivered by caesarean section were at 1.9 times more risk of stopping breast feeding and showed shorter duration of lactation than those who delivered vaginally. This could be for several reasons related to the mother's and infant's health after delivery which influences the decision to breastfeed and maintain lactation. In addition, the mother's feeling that she has failed to deliver normally by the vaginal route and her fear of harming her infant through insufficient milk intake make her support the use of artificial feeding. Previous studies have reported that caesarean section delivery was a risk factor for not initiating breastfeeding, and that infants delivered by caesarean section started suckling later and were given bottles more often during the first days of life. This, in addition to lack of antenatal and postnatal education to guide the mother into initiating lactation and maintaining it through regular and extensive breastfeeding, certainly influences the infant's feeding pattern⁽¹⁶⁾.

Mothers who received breastfeeding counseling and support from the time of their babies' birth had significantly greater rates of breastfeeding initiation, exclusivity, and duration of total breastfeeding than those who did not⁽¹⁷⁾.

The increase of exclusive breastfeeding in the study group was from (63.3%) to (73.3%) between second & third weeks, and constant the same percentage during fourth week as shown in table (3B). In Ghana, Aidam et al., conducted a randomized trial on the effect of lactation counseling on exclusive breastfeeding. Find out the 100% increase in exclusive breastfeeding rates can be attributed to the lactation counseling provided. Additional prenatal exclusive breastfeeding support may not be needed within a context of strong routine prenatal exclusive breastfeeding education⁽¹⁸⁾. Reported on how breastfeeding education has changed the knowledge of mothers about various

aspects of breastfeeding and how it increased the duration of exclusive breastfeeding in infants⁽⁶⁾ (P 11). Also the present study also reveals that there is a sore nipple the main complain occur in sample during first and second follow up as shown in table (3B). Sore nipples are a common complaint among breastfeeding women and one reason why some women decide to stop breastfeeding. The incidence ranges from 11 to 96%. Nipple damage may occur due to trauma to the nipple from incorrect attachment to the breast⁽¹⁹⁾.

The present study also reveals that the main reasons for discontinuation of breastfeeding for control group is not enough milk in addition ,the newborn refused lactation as shown in table (3C). In Iraq, Abdul Ameer et al., reported that in they sample, over a third believed that breast milk was not enough to satisfy their infants, mostly because of the malnourishment of the mother herself. The findings of 2 Iraqi studies, one from Mosul (north) and the other from Basra (south), showed this was the reason for discontinuation of breastfeeding in 40.8% and 25.7% of mothers respectively⁽²⁰⁾. Perceived breast milk insufficiency was the most common reason for discontinuing 'exclusive breastfeeding' or 'any breastfeeding' For example, in Tibet, perceived breast milk deficiency was the main reason for weaning both in urban and rural areas, and found out knowledge was lacking about the correct time to introduce supplements. Nearly 35% believed that breast milk was not enough for their infants⁽²¹⁾.

Recommendations:

First. Reactivate the role of Baby-Friendly Hospital Initiative in promoting breastfeeding by the implementation of ten steps successful of breastfeeding, second. Health agencies should ensure that health workers providing breastfeeding support & receive education appropriate to their role in breastfeeding in order to develop the knowledge, skill and attitude to implement breastfeeding policy & to support lactating mothers. And third. Breastfeeding

counseling for women during pregnancy and after childbirth especially who have cesarean

section which has important role on maintenance of breastfeeding up to 6 months.

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