Results

The study aimed to assess the effectiveness of monitoring tool in improving the practices in a predesignated Baby Friendly Hospitals over a period of four months in obstetric wards, NICU and antenatal care units in Damanhour teaching hospital.

We conducted the monitoring at the dates of August D1-D7 , D23-D30 , September D15-D23 , October D1-D7 , October D23-D30 , November D1-D7 within each monitoring cycles ten mother and infant pairs were monitored in the obstetric and NICU units.

Over the period of the study, we measured changes in practices over the period of monitoring. At the end of the last monitoring activity we assessed four other hospitals to exclude the effect of external bias.

Our finding showed that there was improvement over the time of the study in the implementation of the Ten Steps with varying degree in comparison with four other predignated Baby Friendly Hospitals where monitoring tool was not implemented.

Results

The results are presented in the following tables and charts:

Table (1) Describes the monitoring of maternal deliveries distributed along the monitoring period according to the type of delivery (vaginal with or without medication, cesarean section with general and spinal anesthesia and episiotomies). There is a statistically significant decrease in the mean number of episiotomies (p=0.000). This is also demonstrated in the following charts :

Fig (1a) Shows the improvement in the mean number of vaginal deliveries without medication in DTH along the monitoring period.

Fig (2b) Shows the decrease in the mean number of cesarean section with spinal anesthesia in DTH a long monitoring.

Table (2) Compares the percent distribution of sampled pregnant mothers exposed to health education sessions who delivered in governmental and private sections .

Table (3) Compares the exposure of pregnant women to health education in the beginning of monitoring and the end of this activity in DTH during the period of monitoring.

Fig.(2): Shows improvement of exposure of pregnant women to health education in antenatal care unite along the monitoring period.

Table(4): Compares the monitoring of the practice of Skin-to-Skin during the first hour along the monitoring period by mean ± SD. There is a significant improvement in STS without clothes from 4 ± 2 in the beginning of the monitoring to 16 ± 2 at the end of this activity. Moreover, there is a statistically significant decrease in cases without STS from 14±6 to 2±1 (P = 0.000).

Fig.(3): Shows the improvement in deliveries with STS and decrease in deliveries without STS along the monitoring period.

Table(5): Shows the monitoring of routine procedures during the first Skin-to-Skin contact including suction and cutting of umbilical cord distributed along the monitoring period. There is statistically significant increase in mean number of suctioned babies that was done directly on the mother (STS) from 4 ± 3 to 17 ± 3 (P=0.000). Moreover, the mean number of cutting of umbilical cord directly on the mother improved significantly from 2 ± 2 to 15 ± 1 (P=0.000).

Fig.(4a): Shows monitoring changes of suction during Skin-to-Skin contact.

Fig.(4b): Shows the monitoring changes of cutting of umbilical cord during the first Skin-to-Skin contact.

Table (6) : Compares the sampled neonates in obstetric word and NICU in the beginning of monitoring and the end of this activity and compared with control sites . The number of vaginal deliveries without medication is significantly increased from 36.7% to 48.3% after the use of monitoring tool but in control sites it's only 27.5%. The number of cesarean section with spinal anesthesia is increased from 26.7% in the beginning the intervention to 33.3% at the end of this activity but it's 21.1% in control sites.

Table(7): Compares the early and exclusive breastfeeding practices during the first hour in the beginning of monitoring and the end of this activity. The number of babies who first breastfed in less than one hour increases significantly from 40% to 63.3% while it's only 15% in control sites (P=0.000). Skin-to-Skin up to breastfeeding increases significantly from 40% to 73.3% while it's only 10% in control sites (P=0.000).

Also, milk expression more than 6 times increases from 38.3% to 60.0% but it's only 22.5% in control sites (P=0.000).

Fig.(5): Shows the monitoring changes of milk expression along the monitoring period.

Table (8) : Compares the sampled neonates in obstetric ward and NICU in DTH in the beginning of monitoring and the end of this activity according to distribution of supplementation and compared with control sites. The supplementation given is 58.3% in the beginning of the monitoring and decreases to 11.7% at the end of this activity while in control sites it's only 22.5%.

Fig.(6): Shows the monitoring changes of supplementation given along the monitoring period.

Table (9) : Compares the babies locations in the beginning of monitoring and the end of this activity . Rooming-in increases from 31.7% to 35.0%.Mothers who stay with their infants in NICU during the day increases from 15.0% to 33.3% but it's 0.0% in control sites (P = 0.000).

Fig.(7a): Shows the monitoring changes of baby's location in labor ward along the monitoring period.

Fig.(7b): Shows the monitoring changes of baby's location in NICU along the monitoring period.

Table(10): Compares the frequency of feeding in neonates of obstetric ward and NICU in the beginning of monitoring and the end of this activity. There is increase in frequency of feeding by night from 3 ± 1 to 4 ± 1 after application of the monitoring tool while it's 4 ± 1 in control sites.

Fig.(8a): Shows the mean frequency of breastfeeding by day along the duration of intervention.

Fig.(8b): Shows the mean frequency of breastfeeding by night along the duration of intervention.

Fig. (8c) : Shows the monitoring changes of frequency of Breastfeeding

Table(11) : Compares the bottle use of neonates in obstetric ward and NICU in the beginning of monitoring and the end of this activity in DTH. There is a statistically significant decrease in bottle use with human milk from25.9% to1.7% while it's 10% in control sites (P = 0.000) and IMF by bottle from 65.9% to 20.0% while it's 65.7% in control sites (P=0.001).

Fig.(9a): Shows the monitoring changes of mode of feeding of human milk along the monitoring period.

Fig.(9b): Shows the monitoring changes of mode of feeding of infant milk formula along the monitoring period.

Table(12): Shows the distribution of difficulties faced by mothers in the beginning of monitoring and the end of this activity in DTH. The breast engorgement is the main problem in the intervention and control sites 35% and 31.2% respectively.

Fig.(10): Shows the monitoring changes of cases that came back with breastfeeding difficulties.

Table(13): Compares the infant feeding practices in obstetric ward and NICU in the beginning of monitoring and the end of this activity in DTH. Babies who breastfed exclusively increase significantly from 40.0% to 78.3% where it's only 12.5% in control sites. Babies with formula feeding decreases significantly from 23.4% to 0.0% while it's 41.3% in control sites (P=0.000).

Fig.(11): Shows the monitoring changes of breastfeeding at discharge.

Table(14): Shows the mean age and anthropometric measurements for studied neonates in obstetric wards and NICU at time of admission and discharge in the beginning of monitoring and the end of this activity. There is a significant increase in the mean score of action taken towards breast problems from 2 ± 1 to 3 ± 1 but in control sites the main score is 0 ± 1 (P = 0.000).

Fig.(12a): Shows the mean score of action taken to manage breastfeeding problems.

Fig.(12b): Shows the mean weight at delivery and discharge along the duration of intervention.

Fig.(12c): Shows the mean age of baby at discharge by days in NICU along the duration of intervention.

Fig.(12d): Shows the mean weight of discharge along the duration of intervention.

Fig.(12e): Shows the mean age of baby at discharge by hours in obstetric ward along the duration of intervention.

Table(15): Shows the profile of monitored neonates in obstetric ward and NICU along the period of monitoring.

Table(16):Compares the practices of early and exclusive breastfeeding in the immediate postpartum period in DTH along the period of monitoring.

Table(17): Shows the distribution of supplementation by health staff in obstetric ward versus NICU in DTH along the monitoring period.

Table(18): Shows the distribution of difficulties faced by mothers during monitoring period in NICU versus obstetric ward in DTH along the monitoring period.

Table(19): Compares the bottle use in neonates in NICU versus obstetric ward in DTH. There is statistically significant decrease in bottle use with human milk by 14% in obstetric ward versus 0.0% in NICU (P=0.000) .The bottle use with IMF is 100% in obstetric ward versus 40.4% in NICU (P=0.000).Rooming-in in obstetric ward is 66% while it is only 10% in NICU. 41.4% of mothers stay with their infants in NICU during the day (P=0.000).

Table(20): Compares the infant feeding practices at discharge in NICU versus obstetric ward in DTH along the monitoring period.

Table(21) : Shows the mean age and anthropometric measurements for studied neonates at time of admission and discharge in NICU versus obstetric ward in DTH.

Table (1) : Comparison of types of maternal deliveries (Vaginal with or without medication, Cesarean section with general and spinal anesthesia and episiotomies) by mean ± SD of sampled cases over the seven days of the monitoring activity.

Variables \ Month	Mean ±SD					P value
	Aug.	Sep.	Oct.	Nov.	Total	
Vaginal delivery with medication	7.3±3.4	6.14±1.6	5.6±1.3	5±1.5	6.13±2.3	**0.11**
Vaginal delivery without medication	7.3±2.1	7.14±2.2	7.82±1.6	8.5±1.4	7.7±1.8	**0.47**
Cesarean section with spinal anesthesia	4.7±3.5	7.3±3.3	4.5±2.5	3.9±1.8	4.9±3	**0.12**
Cesarean section with general anesthesia	3.07±1.2	4.14±3	5±1.7	4.9±1.3	4.2±2.5	**0.16**
Deliveries with episiotomies	8 ± 4	4 ± 1	3 ± 2	2 ± 1		**0.000**

Figure (1a) : Monitoring changes in vaginal delivery practices medicated versus unmediated and episiotomy, over the period of monitoring conducted every 3 weeks.

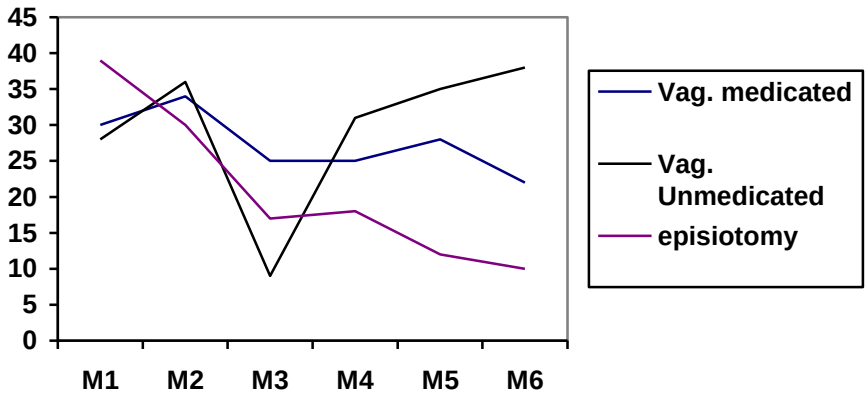
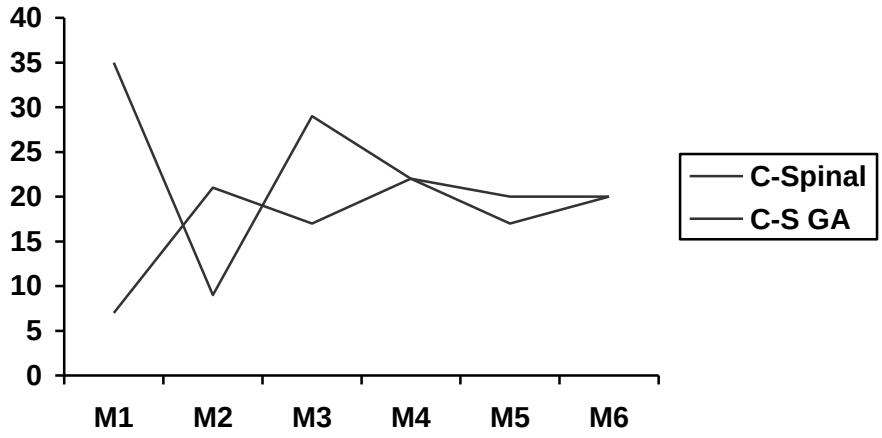


Figure (1b) : Monitoring changes in cesarean delivery practices spinal versus general anesthesia, over the period of monitoring conducted every 3 weeks fro mothers in labor, maternity and NICU wards.



STEP (3) :

Table (2) : Distribution of exposure of pregnant women according to health education sessions by health staff in MCH, hospital, private sectors.

	Health service delivery						P value
	MCH.		Hospital		Private		
	No.	%	No.	%	No.	%	
Parity							
- Primi	26	54.2	5	55.6	1	33.3	**0.77**
- Multi	22	45.8	4	44.4	2	66.7	
Health education							**0.77**
- Yes	45	93.8	8	88.9	3	100.0	
Health education in last visit							**0.27**
- Yes	36	75.0	7	77.8	1	33.3	
Health education about breastfeeding							**0.37**
- Yes	44	91.7	8	88.9	2	66.7	

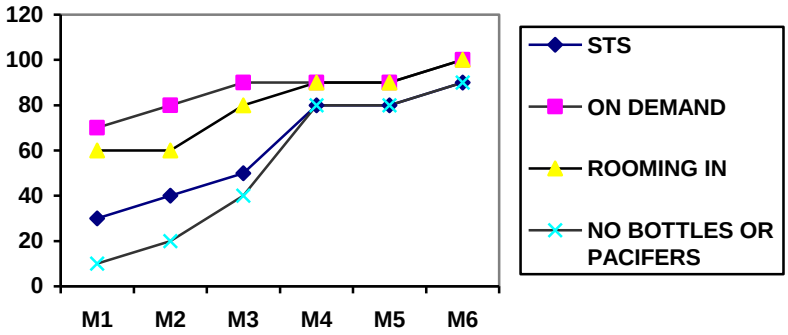
Table (3) : Comparison of health education of pregnant mothers in the beginning of monitoring and the end of this activity in Damanhour teaching hospital during the period of the study.

Variables	GROUP				P value
	Initial monitoring		Final monitoring		
	n=30	%	n=30	%	
Health education - Yes	26	86.7	30	100.0	**0.03**
Health education in last visit	19	63.3	25	83.3	**0.98**
Health education about breastfeeding	24	80.0	30	100.0	**0.01**
Health education about:					
- On demand feeding	2	8.3	0	0.0	
- On demand and rooming in	7	29.2	1	3.3	
- STS, on demand and rooming in	8	33.4	4	13.3	
- STS, on demand and no bottle or pacifiers	2	8.3	2	6.7	**0.002**
- STS, rooming in and no bottle or pacifiers	0	0.0	2	6.7	
- On demand, rooming in and no bottle or pacifiers	3	12.5	4	13.3	
- All of the above topics	2	8.3	17	56.7	

Table (3) *Continued*: Comparison of the method used for health education of pregnant mothers in the beginning of monitoring and the end of this activity in Damanhour teaching hospital during the period of the study.

Variables	GROUP				P value
	Initial monitoring		Final monitoring		
	n=30	%	n=30	%	
Health education with:					
- Poster	8	29.6	2	6.7	
- Poster and Flip chart	9	3.3	8	26.7	
- Poster, Video and Flip chart	5	18.5	13	43.3	**0.013**
- Poster, Flip chart and others	1	3.7	3	10.0	
- Non of the above	7	44.9	4	13.3	

Fig (2) : Monitoring changes of health education of pregnant mothers in antenatal care unit:



STEP (4)

Table (4) : Monitoring of the practice of skin to skin in the immediate postpartum period distributed along the study period by Mean ± SD of sample cases over the seven days of the monitoring.

STS practices	Mean ±SD				P value
	Aug.	Sep.	Oct.	Nov.	
Deliveries with STS.					
- Mother and baby in contact	5 ± 2	11 ± 2	8 ± 2	5 ± 1	**0.000**
- STS. directly on the mother	4 ± 2	8 ± 2	12 ± 2	16 ± 2	
- No STS.	14 ± 6	7 ± 2	3 ± 2	2 ± 1	

Fig (3) : Monitoring changes of STS practices :

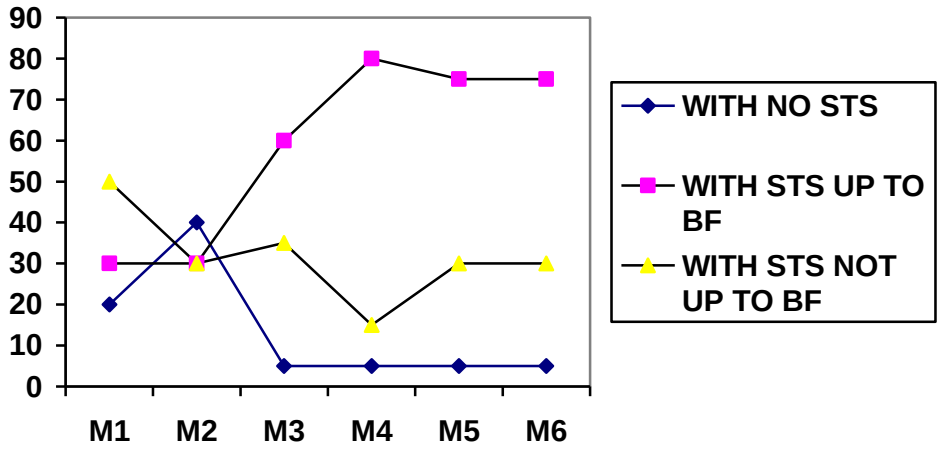


Table (5) : Monitoring of routine procedures to be done during the first skin to skin contact including suction and cutting of umbilical cord distributed along the study period by Mean ± SD of sample cases.

STS practices	Mean ±SD				P value
	Aug.	Sep.	Oct.	Nov.	
Suction					
- Directly on the mother	4 ± 3	10 ± 2	11 ± 3	17 ± 3	**0.000**
- Away from the mother	16 ± 5	15 ± 4	12 ± 3	5 ± 1	
Cutting of umbilical cord					
- Directly on the mother	2 ± 2	10 ± 3	11 ± 3	15 ± 1	**0.000**
- Away from the mother	20 ± 6	15 ± 3	12 ± 4	7 ± 2	

Fig (4a) : Monitoring changes of suction during the first skin to skin contact :

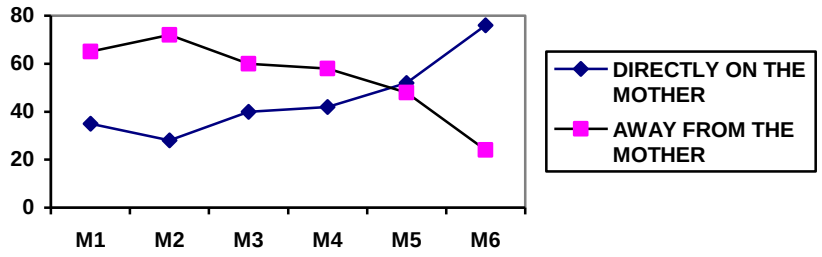
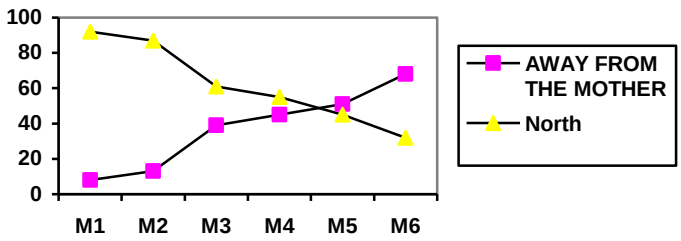


Fig (4b) : Monitoring changes of cutting of umblical cord during the first skin to skin contact :



Mother - Friendly

Table (6) : Comparison of sampled neonates in obstetric ward and NICU in Damanhour teaching hospital in the beginning of monitoring , the end of this activity during the period of the study and with control sites .

Variables	GROUP						P value
	Initial monitoring		Final monitoring		Control		
	n=60	%	n=60	%	n=80	%	
Type of delivery							
-Vag. with medication	18	30.0	10	16.7	29	63.2	
-Vag. without medication	22	36.7	29	48.3	22	27.5	**0.003**
- C.S with general anesthesia	4	6.6	1	1.7	12	15.0	
- C.S with spinal anesthesia	16	26.7	20	33.3	17	21.1	
Sex of the baby							
- Male	30	50.0	30	50.0	42	52.5	**0.72**
- Female	30	50.0	30	50.0	38	47.5	
Status of the baby							
- Full term	41	68.3	47	78.3	75	93.8	**0.000**
- Premature/ LBW.	19	31.7	13	21.7	5	6.2	

STEP (4)

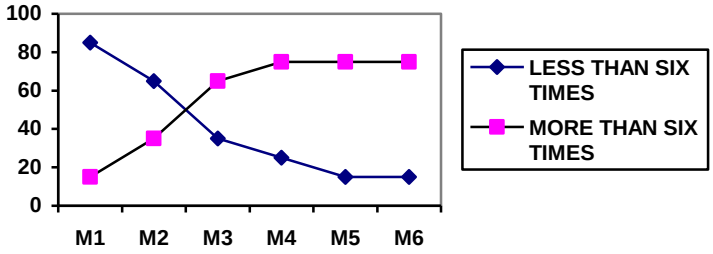
Table (7) : Comparison of practices in the immediate postpartum period related to early and exclusive breastfeeding in the beginning of monitoring ,the end of this activity during the period of the study and with control sites .

Variables	GROUP						P value
	Initial monitoring		Final monitoring		Control		
	n=60	%	n=60	%	n=80	%	
Time of first breastfeed							
- Less than 1 hour	24	40.0	38	63.3	12	15.0	**0.000**
- More than 1 hour	21	35.0	20	33.3	39	48.8	
- Not yet	15	25.0	2	3.4	29	36.2	
Skin to Skin							
- No	13	21.7	1	1.7	54	67.5	**0.000**
- Up to breastfeed	24	40.0	44	73.3	8	10.0	
- Not up to breastfeed	23	38.3	15	25.0	18	22.5	

STEP (5)

Variables	GROUP						P value
	Initial monitoring		Final monitoring		Control		
	n=60	%	n=60	%	n=80	%	
Milk expression							
- Less than 6 times	37	61.7	24	40.0	62	77.5	**0.000**
- More than 6 times	23	38.3	36	60.0	18	22.5	

Fig (5) : Monitoring changes of milk expression

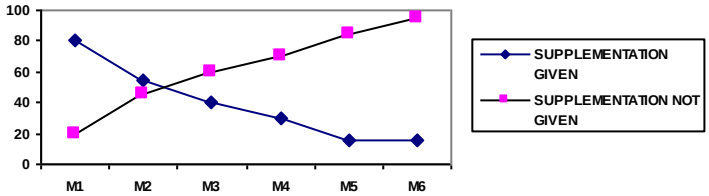


STEP (6)

Table (8) : Comparison of sampled neonates in obstetric ward and NICU in Damanhour teaching hospital in the beginning of monitoring ,the end of this activity during the period of the study according to distribution of supplementation and with control sites .

Variables	GROUP						P value
	Initial monitoring		Final monitoring		Control		
	n=60	%	n=60	%	n=80	%	
Supplement given							
- Yes	35	58.3	8	11.7	18	22.5	**0.000**
Type of supplement							
- Water	11	31.4	0	0.0	14	22.2	**0.34**
- Formula	19	54.3	8	100.0	46	73.0	
- Other	5	14.3	0	0.0	3	4.8	
Causes of supplement intake							
- Premature baby	17	47.2	4	50.0	1	6.5	**0.000**
- Baby with sever hypoglycemia	1	2.8	1	12.5	5	25.5	
- Baby with inborn error of metabolism	1	2.8	0	0.0	0	0.0	
- Baby with acute water loss	3	8.3	1	12.5	1	3.2	
- Sever maternal illness	5	13.9	1	12.5	5	32.6	
- Mother in medication	6	16.7	1	12.5	5	29.0	
- Others	1	5.5	0	0.0	1	3.2	
- Premature baby with sever hypoglycemia	1	2.8	0	0.0	0	0.0	

Fig (6) : Monitoring changes of supplementation given :



STEP (7) :

Table (9) : Comparison of Baby's location in neonates of obstetric ward and NICU in the beginning of monitoring and the end of this activity application of the monitoring tool in Damanhour teaching hospital during the period of the study and with control sites.

Variables	GROUP						P value
	Initial monitoring		Final monitoring		Control		
	n=60	%	n=60	%	n=80	%	
Baby's location							
- Rooming in	19	31.7	21	35.0	39	48.8	**0.000**
- Nursery	12	20.0	9	15.0	15	18.8	
- NICU with no mother	20	33.3	10	16.7	26	32.4	
- NICU with mother during day	9	15.0	20	33.3	0	0.0	

Fig (7a) : Monitoring changes of baby' s location in labor ward :

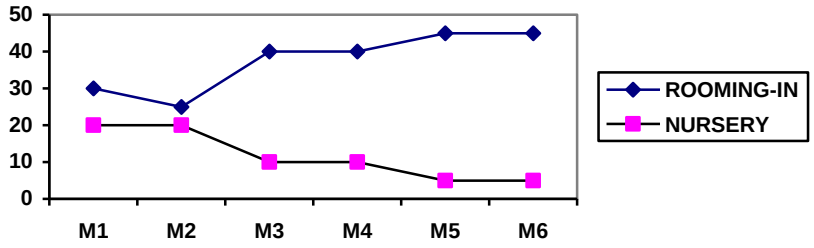
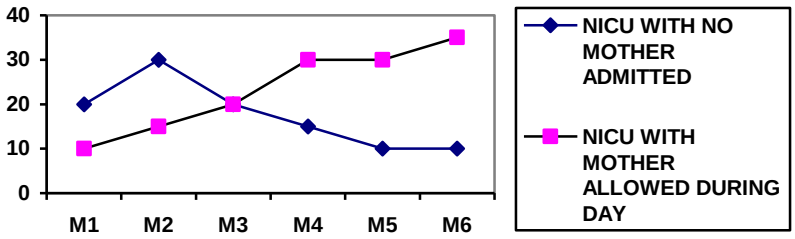


Fig (7b) : Monitoring changes of baby's location in NICU :



STEP (8)

Table (10) : Comparison of Frequency of feeding in neonates of obstetric ward and NICU in the beginning of monitoring and the end of this activity application of the monitoring tool in Damanhour teaching hospital during the period of the study by mean ± SD and compared with control sites.

Variables	GROUP						P value
	Initial monitoring		Final monitoring		Control		
	Mean	SD	Mean	SD	Mean	SD	
Frequency of feeding							
- Day	**5**	**1**	**5**	**1**	**4**	**1**	**0.000**
- Night	**3**	**1**	**4**	**1**	**4**	**1**	**0.008**

Fig. (8a) Mean Frequency of BF by day along the duration of intervention

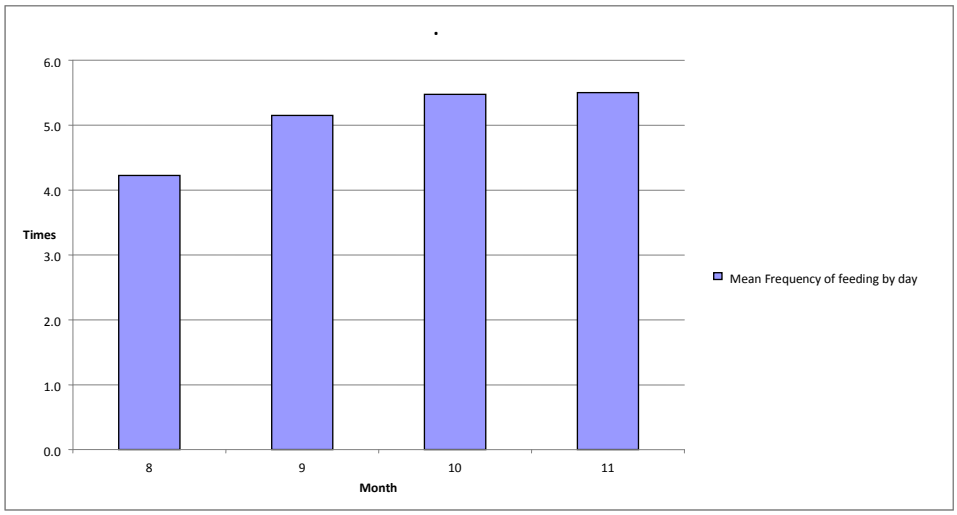


Fig. (8b) : Mean Frequency of BF by night along the duration of intervention

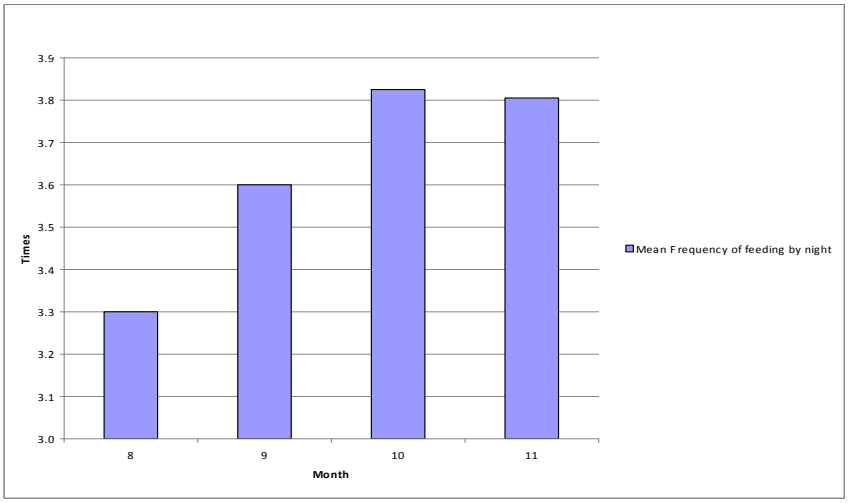
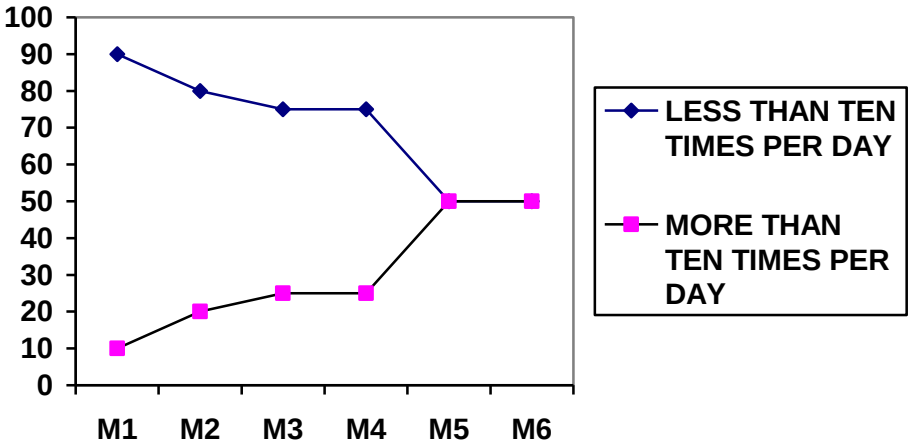


Fig (8c) Monitoring of changes of frequency of breastfeeding :



STEP (9) :

Table (11) : Comparison of bottle use in neonates of obstetric ward and NICU in the beginning of monitoring and the end of this activity application of the monitoring tool in Damanhour teaching hospital during the period of the study and with control sites .

Variables	GROUP						P value
	Initial monitoring		Final monitoring		Control		
	n=60	%	n=60	%	n=80	%	
Baby fed (HM)							
- Breast only	25	43.1	43	71.7	19	23.8	
- Breastfeed and healthy means*	13	22.4	14	23.3	12	13.8	**0.000**
- Breastfeed and bottle	5	8.6	2	3.3	41	51.2	
- Bottle	15	25.9	1	1.7	8	10	
Baby fed (IMF)							
- Bottle	25	65.9	4	20.0	52	65.7	**0.001**
- Feeding with healthy means*	15	34.1	16	80.0	23	24.3	

* Healthy means are feeding by cup, syringe, spoon and dropper

Fig (9a): Monitoring changes of mode of feeding of human milk :

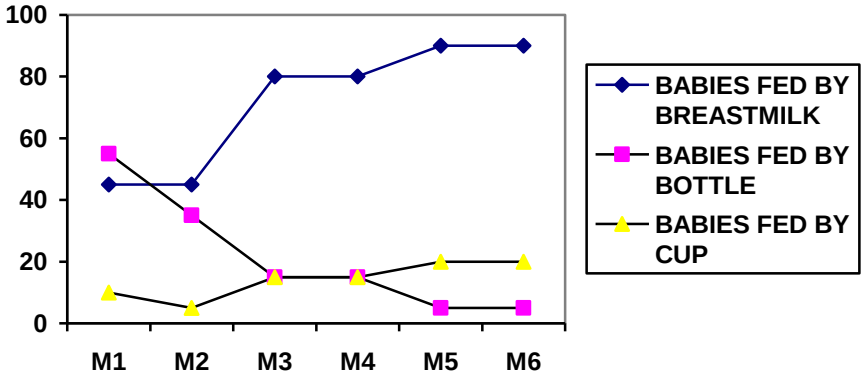
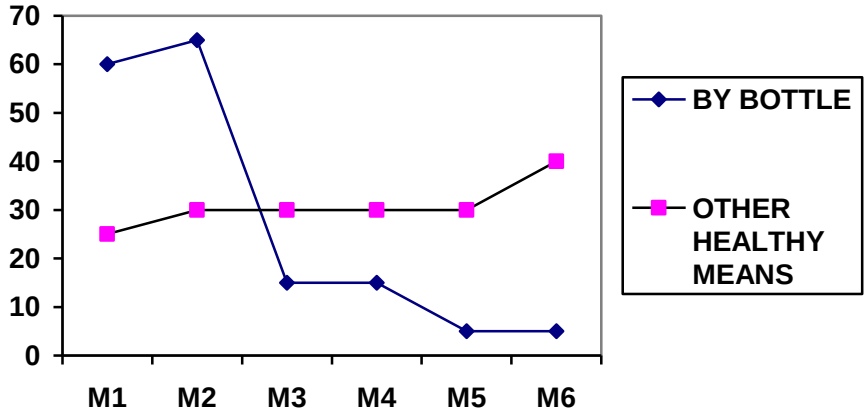


Fig (9b) : Monitoring changes of mode of feeding of infant milk formula :

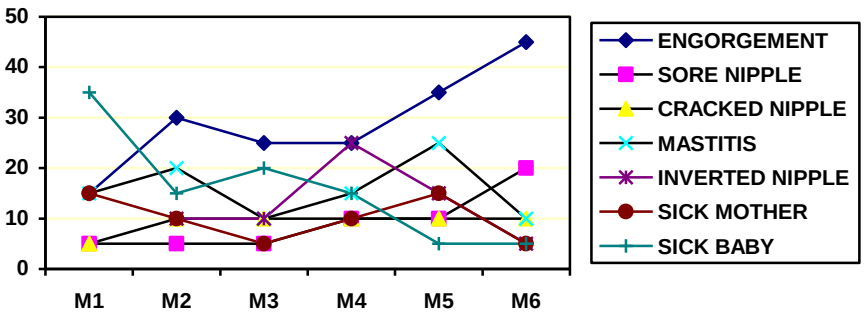


STEP (10)

Table (12) : Distribution of difficulties faced by mothers in the beginning of monitoring and the end of this activity in Damanhour teaching hospital during the period of the study and with control sites .

Variables	GROUP						P value
	Initial monitoring		Final monitoring		Control		
	n=60	%	n=60	%	n=80	%	
Problems related to infant feeding							
- Engorgement	14	23.3	21	35.0	25	31.2	
- Sore nipple	3	5.0	8	13.3	7	8.8	
- Cracked nipple	5	8.4	6	10.0	3	3.8	**0.03**
- Mastitis or breast abscess or blocked duct	9	15.0	10	16.7	8	10.0	
- Invert – Flat – Small nipple	9	15.0	4	6.7	15	18.5	

Fig (10) : Monitoring of cases that came back with breastfeeding difficulties :



OUTCOME

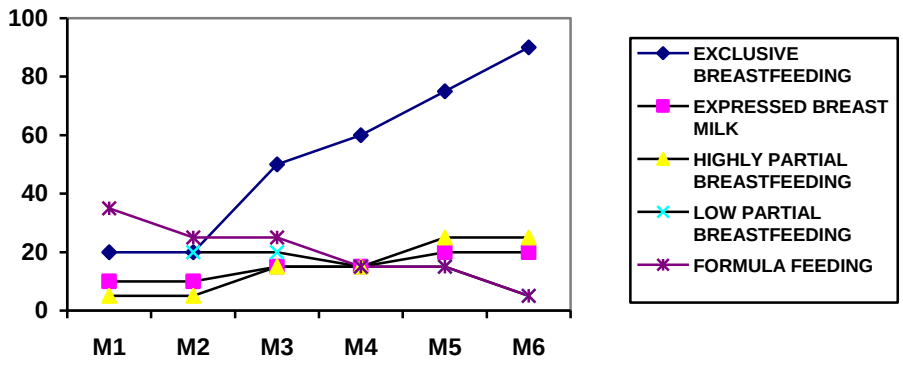
Table (13) : Comparison of infant feeding practices of obstetric ward and NICU in the beginning of monitoring, the end of this activity in Damanhour teaching hospital during the period of the study and with control sites.

Variables	GROUP						P value
	Initial monitoring		Final monitoring		Control		
	n=60	%	n=60	%	n=80	%	
Breastfeeding at discharge							
- Exclusive breastfeeding	24	40.0	47	78.3	10	12.5	**0.000**
- Expressed breast milk feeding	5	8.3	1	1.7	10	12.5	
- Highly partial breastfeeding**	11	18.3	12	20.0	7	8.7	
- Low partial breastfeeding***	6	10	0	0.0	20	25.0	
- Formula feeding	14	23.4	0	00	33	41.3	

** Highly partial breastfeeding means breastfeeding more than six times per day.

*** Low partial breastfeeding means breastfeeding less than six times per day.

Fig (11) : Monitoring of breastfeeding at discharge :



OUTCOME

Table (14) : Mean age and Anthropometric measurements for studied neonates of obstetric ward and NICU at time of admission and discharge in the beginning of monitoring and the end of this activity in Damanhour teaching hospital during the period of the study and with control sites.

Variables	Mean ± SD			P value
	Initial monitoring	Final monitoring	Control	
Weight of delivery in kg.	2.5 ± 0.8	2.7 ± 0.8	2.9 ± 0.4	0.000
Weight of discharge in kg.	2.57 ± 0.71	2.78 ± 0.7	2.94 ± 0.36	0.022
Length of the baby in cm.	52 ± 2	51 ± 6	51 ± 1	0.04
Age of baby at discharge by days	6 ± 9	5 ± 4	6 ± 3	0.01
Score of action taken towards breast problems	2 ± 1	3 ± 1	0 ± 1	0.000

Variables	GROUP						P value
	Initial monitoring		Final monitoring		Control		
	n=60	%	n=60	%	n=80	%	
- Sick mother	6	10.0	6	10.0	17	21.5	0.001
- Sick baby	14	23.3	5	8.3	5	6.2	0.000

Fig. (12a) : Mean Score of action taken to manage BF problems

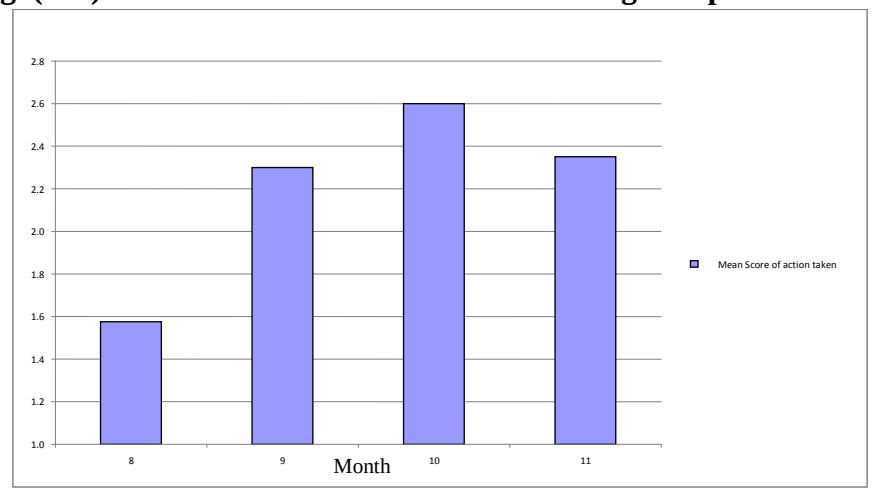


Fig. (12b) : Mean weight at delivery and discharge along the duration of intervention

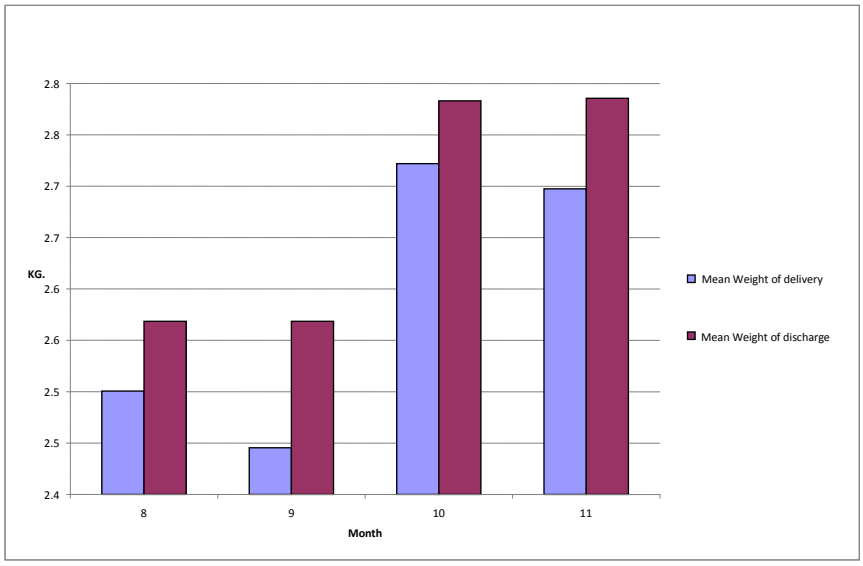


Fig. (12c) : Mean Age of baby at discharge by days in NICU along the duration of intervention

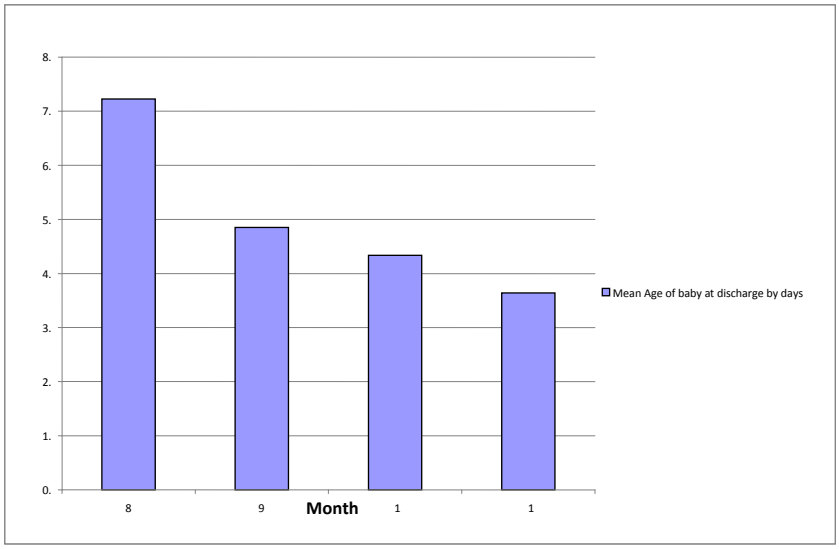


Fig. (12d) : Mean Weight of discharge along the duration of intervention

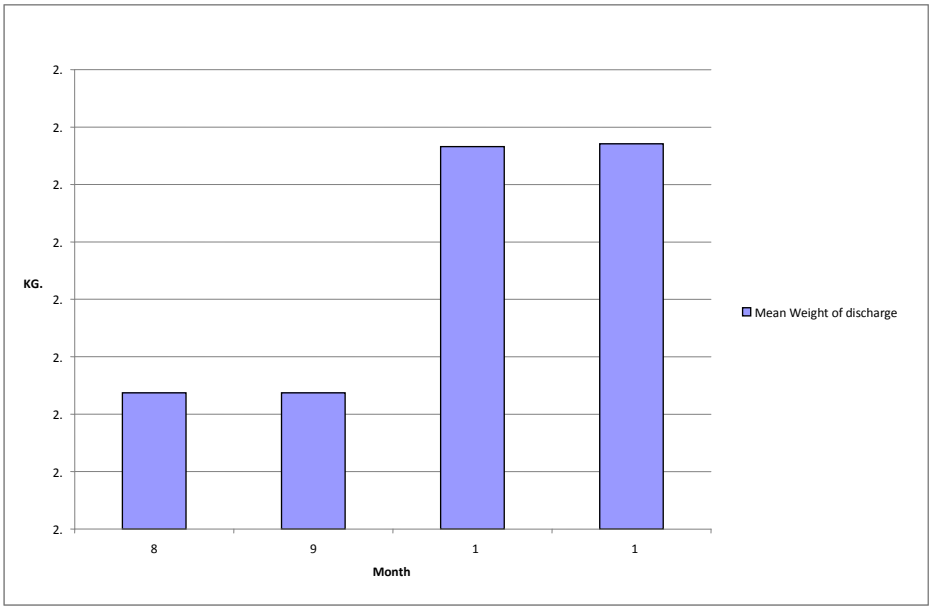


Fig. (12e) : Mean Age of baby at discharge by hours in obstetric ward along the duration of intervention

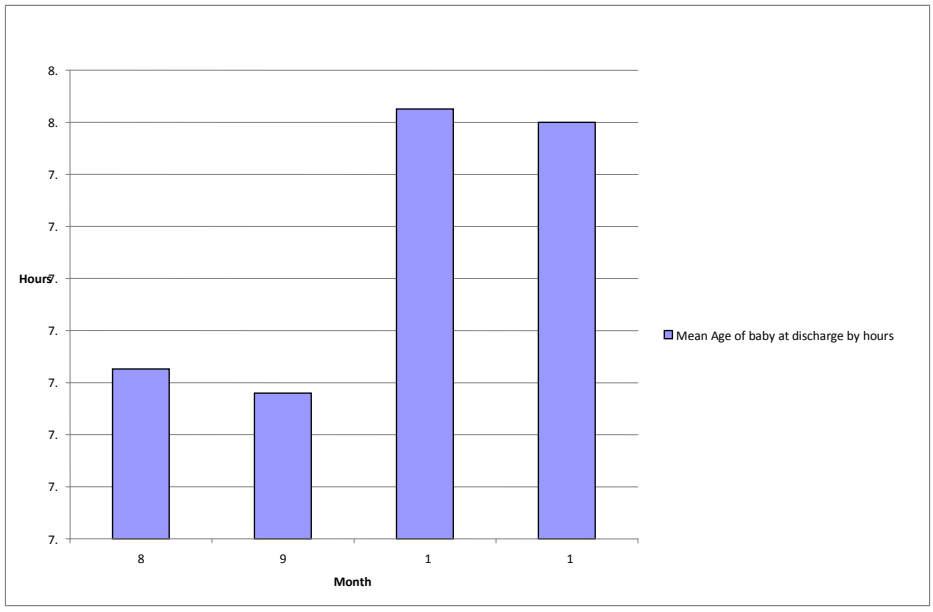


Table (15) : Profile of monitor neonates in obstetric ward and NICU. in Damanhour teaching hospital during the period of the study.

Variables	GROUP				P value
	obstetric ward		NICU		
	n=50	%	n=70	%	
Type of delivery					
-Vag. with medication	10	20.0	18	25.7	
-Vag. without medication	24	48.0	27	38.5	**0.53**
- C.S with general anesthesia	3	6.0	2	2.9	
- C.S with spinal anesthesia	13	26.0	23	32.9	
Sex of the baby					
- Male	26	52.0	34	48.6	**0.71**
- Female	24	48.0	36	51.4	
Status of the baby					
- Full term	50	100.0	38	54.3	**0.000**
- Premature/ LBW.	0	0.0	32	45.7	

Table (16) : Comparison of practices in the immediate postpartum period related to early and exclusive breastfeeding in NICU versus obstetric ward in Damanhour teaching hospital during the period of the study.

Variables	GROUP				P value
	obstetric ward		NICU		
	n=50	%	n=70	%	
Time of first breastfeed					
- Less than 1 hour	27	54.0	35	50	**0.54**
- More than 1 hour	18	36.0	23	32.9	
- Not yet	5	10.0	12	17.1	
Skin to Skin					
- No	5	10.0	9	12.9	**0.38**
- Up to breastfeed	32	64.0	36	51.4	
- Not up to breastfeed	13	26.0	25	35.7	
Milk expression					
- Less than 6 times	23	46.0	38	54.3	**0.37**
- More than 6 times	27	54.0	32	45.7	

Table (17) : Distribution of supplementation in obstetric versus NICU in Damanhour teaching hospital during the period of the study.

Variables	GROUP				P value
	obstetric ward		NICU		
	n=50	%	n=70	%	
Supplement given					
- Yes	8	16.0	36	51.4	**0.000**
Type of supplement					
- Water	2	25.0	9	25.7	**0.502**
- Formula	6	75.0	21	60	
- Other	0	0.0	6	14.3	
Causes of supplement intake					
- Premature baby	0	0.0	21	58.3	**0.001**
- Baby with sever hypoglycemia	0	0.0	2	5.6	
- Baby with inborn error of metabolism	0	0.0	1	2.8	
- Baby with acute water loss	0	0.0	4	11.1	
- Sever maternal illness	3	37.5	3	8.3	
- Mother in medication	5	62.5	2	5.6	
- Others	0	0.0	2	5.5	
- Premature baby with sever hypoglycemia	0	0.0	1	2.8	

Table (18) : Distribution of difficulties faced by mothers during monitoring period in NICU versus obstetric ward in Damanhour teaching hospital during the period of the study.

Variables	GROUP				P value
	obstetric ward		NICU		
	n=50	%	n=70	%	
Problems related to infant feeding					
- Engorgement	18	36.0	17	24.3	**0.001**
- Sore nipple	8	16.0	3	4.3	
- Cracked nipple	5	10.0	6	8.6	
- Mastitis or breast abscess or blocked duct	6	12.0	13	18.6	
- Invert – Flat – Small nipple	6	12.0	7	10.0	
- Sick mother	7	14.0	5	7.1	
- Sick baby	0	0.0	19	27.1	

Table (19) : Comparison of bottle use in neonates in NICU versus obstetric ward in Damanhour teaching hospital during the period of the study.

Variables	GROUP				P value
	obstetric ward		NICU		
	n=50	%	n=70	%	
Baby fed (HM)					
- Breast only	38	76.0	30	44.1	**0.000**
- Breastfeed and healthy means*	0	0.0	27	45.9	
- Breastfeed and bottle	7	14.0	0	0	
Baby fed (IMF)					
- Bottle	12	100.0	21	40.4	**0.000**
- Feeding with healthy means*	0	0.0	30	59.6	
Baby's location					
- Rooming in	33	66.0	7	10.0	**0.000**
- Nursery	17	34.0	4	5.7	
- NICU with no mother	0	0.0	30	42.9	
- NICU with mother during day	0	0.0	29	41.4	

* Healthy means are feeding by cup, syringe, spoon and dropper

Table (20) : Comparison of infant feeding practices at discharge in NICU versus obstetric ward in Damanhour teaching hospital during the period of the study.

Variables	GROUP				P value
	obstetric ward		NICU		
	n=50	%	n=70	%	
Breastfeeding at discharge					
- Exclusive breastfeeding	33	66.0	38	54.3	**0.69**
- Expressed breast milk feeding	2	4.0	4	5.7	
- Highly partial breastfeeding**	7	14.0	16	22.9	
- Low partial breastfeeding***	6	12.0	8	11.4	

** Highly partial breastfeeding means breastfeeding more than six times per day.

*** Low partial breastfeeding means breastfeeding less than six times per day.

Table (21) : Mean age and Anthropometric measurements for studied neonates at time of admission and discharge in NICU versus obstetric ward in Damanhour teaching hospital during the period of the study.

Variables	Mean ± SD		Pvalue
	Obstetric ward	NICU.	
Gestation age	**39.24 ± 1.41**	**35.29 ± 3.16**	**0.000**
Frequency of feeding			
- Day	**4.8 ± 1.18**	**5.16 ± 0.96**	**0.07**
- Night	**3.34 ± 0.96**	**3.66 ± 0.78**	**0.048**
Weight of delivery	**3.025 ± 0.37**	**2.3 ± 0.87**	**0.000**
Weight of discharge	**3 ± 0.39**	**2.4 ± 0.79**	**0.000**
Length of the baby	**51.02 ± 6.78**	**52.21 ± 2.31**	**0.17**
Age of baby at discharge by days	**1.18 ± 0.89**	**7.81 ± 7.68**	**0.000**
Age of baby at discharge by hours	**7.56 ± 4.16**	**7.43 ± 3.08**	**0.84**
Score of action taken towards breast problems	**2.46 ± 0.97**	**1.96 ± 0.98**	**0.01**