# Results

This study was carried out upon 90 mother – infant pairs who were classified into two main groups. The first group (group 1) including 30 LBW infants who were cared for by KMC maneuver. Their birth weight ranged from 1500 to 2050 grams with a mean birth weight of 1790 grams (± 156). They included 11 males and 19 females. The second group (group 11) included 60 LBW infants cared for by the traditional incubator care. This group was subdivided according to type of feeding into two subgroups. The first subgroup (group 11a) included 30 LBW infants who had been fed by maternal breastfeeding predominantly. Their birth weight ranged from 1500 to 2220 grams with a mean birth weight of 1736 grams (± 204). They included 16 males and 14 females. The second subgroup (group 11b) included 30 LBW infants who had been fed by artificial feeding. Their birth weight ranged from 1500 to 2200 grams with a mean birth weight of 1740 grams (± 190). They included 14 males and 16 females. The mothers of all cases (90) were subjected to assessment for depressive symptoms by using the Beck Depression Inventory at 6 weeks postpartum **(Abd El-Fattah; 1996)**. We assessed the knowledge, attitude and practice (KAP study) of (57) physicians and nurses towards KMC in NICUs of the targeted hospitals included in the study before and

after the implementation of KMC maneuver by using a previously prepared questionnaire.

**Our results will be shown in the following tables and figures:**

| | |
|---|---|
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| **Table (2):** | Percent distribution of socio-demographic variables among all studied groups |
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| **Table(13):** | Comparison of mean ± SD of scores of knowledge, attitude and practice of medical staff work in NICU of Zagazig University Hospital towards KMC before and after implementation of KMC. |
| **Table(14):** | Comparison of mean ± SD of scores of knowledge, attitude and practice of medical staff work in NICUs of the targeted hospitals (Cairo and Zagazig University Hospitals) towards KMC before and after implementation of KMC. |

## Table (1):

**Comparison of mean ± SD of birth weight & gestational age among all studied groups**

| Variables | Group 1 N = 30 | Group 11a N = 30 | Group 11b N = 30 | F | P | Total N = 90 |
|---|---|---|---|---|---|---|
| | Mean ± SD Range | Mean ± SD Range | Mean ± SD Range | | | Mean ± SD Range |
| Birth weight. (kg) | 1.79 ± 0.16 1.5 – 2.05 | 1.74 ± 0.20 1.5 – 2.22 | 1.74 ± 0.19 1.5 – 2.20 | 0.78 | >0.05 | 1.11 ± 0.18 1.5-2.22 |
| Gestational Age (wks) | 37.7 ± 1.5 35-40 | 37.4 ± 2.2 35-40 | 36.9 ± 1.6 33-40 | 1.20 | >0.05 | 37.4 ± 1.8 33–40 |

*P > 0.05: non-significant *P < 0.05: significant *P< 0.01: highly significant

The table shows non statistically significant difference of mean ± SD of birth weight & gestational age among all studied groups

## Table (2):

**Percent distribution of socio-demographic variables among all studied groups**

| Variables | | Group 1 N = 30 | | Group 11a N = 30 | | Group 11b N = 30 | | $X^2$ | P | Total N = 90 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | No | % | No | % | No | % | | | No | % |
| Sex | Male | 11 | 37% | 16 | 53% | 14 | 47% | 0.36 | >0.05 | 41 | 46% |
| | Female | 19 | 63% | 14 | 47% | 16 | 53% | | | 49 | 54% |
| Maternal education | Illiterate | 4 | 13% | 5 | 17% | 7 | 23% | 2.02 | >0.05 | 16 | 18% |
| | Prim. | 9 | 30% | 8 | 27% | 9 | 30% | | | 26 | 29% |
| | Sec. | 13 | 44% | 13 | 44% | 9 | 30% | | | 35 | 39% |
| | High | 4 | 13% | 4 | 13% | 5 | 17% | | | 13 | 14% |
| Father education | Illiterate | 3 | 10% | 5 | 17% | 5 | 17% | 1.05 | >0.05 | 13 | 14% |
| | Prim. | 6 | 20% | 6 | 20% | 5 | 17% | | | 17 | 19% |
| | Sec. | 16 | 53% | 14 | 46% | 16 | 53% | | | 46 | 51% |
| | High | 5 | 17% | 5 | 17% | 4 | 13% | | | 14 | 16% |
| Socio-economic level | Low | 26 | 87% | 26 | 87% | 27 | 90% | 0.21 | >0.05 | 79 | 88% |
| | Med | 4 | 13% | 4 | 13% | 3 | 10% | | | 11 | 12% |
| Parity | Multi | 11 | 37% | 21 | 70% | 27 | 90% | 3.15 | <0.05 | 59 | 66% |
| | Primi | 19 | 63% | 9 | 30% | 3 | 10% | | | 31 | 34% |

*P > 0.05: non-significant *P < 0.05: significant *P< 0.01: highly significant

The table shows the socio-demographic descriptive data of all studied groups. There was no statistically significant difference among the groups except in parity which shows a significant statistical difference (P < 0.05) among all groups included in the study.

## Table (3):

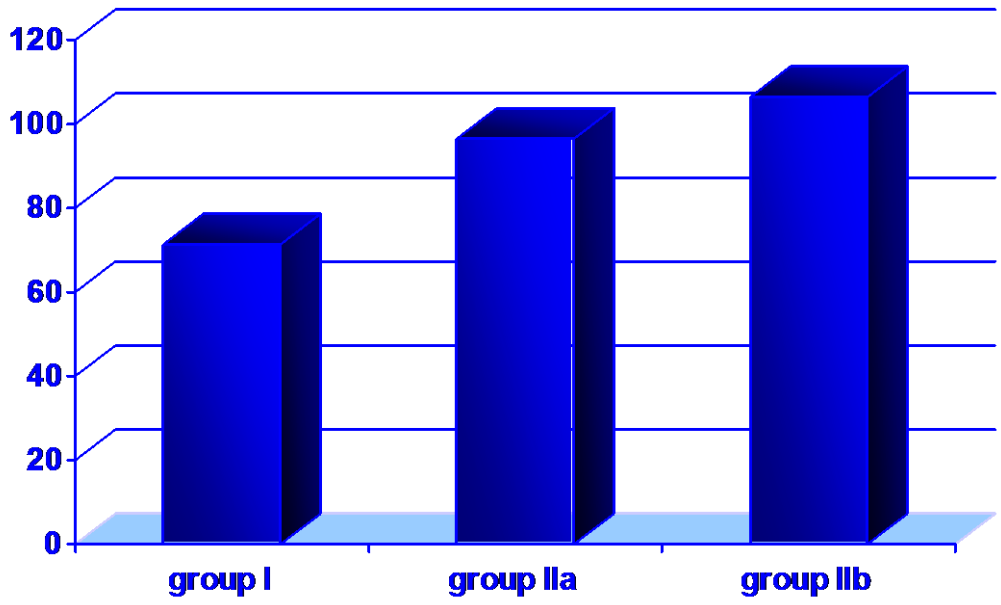
**Comparison of mean ± SD of age of the end point, by days, (age of doubling the birth weight) in all studied groups**

| | Group 1<br>N = 25 | Group 11a<br>N = 25 | Group 11b<br>N = 23 | F | P |
|---|---|---|---|---|---|
| **Mean ± SD** | 71.36 ± 6.99 | 96.50±10.90 | 106.40±11.90 | | |
| **Range** | 55 – 85 | 81 – 126 | 80 – 129 | 51.52 | < 0.01 |
| **Median** | 73 | 94 | 107 | | |

*P > 0.05: non-significant *P < 0.05: significant *P< 0.01: highly significant

## Figure (2):

**Comparison of mean ± SD of age of the end point, by days, (age of doubling the birth weight) in all studied groups**



## Table (4):

**Least Significant Difference (LSD) of age of the end point, by days, (age of doubling the birth weight) among all studied groups**

| | **Group 1 (71.36 ± 6.99)** | **Group 11a (96.50±10.90)** |
|---|---|---|
| **Group 11a (96.50±10.90)** | P < 0.05 **Sig.** | --- |
| **Group 11b (106.40±11.90)** | P < 0.01 **HS** | P > 0.05 NS |

**LSD at 0.05 = 27.7 days**

**LSD at 0.01 = 29.4 days**

The table shows the LSD of age of the end point among all studied groups with no significant statistical difference between group 11a and group 11b. The difference was significant when group 1 (mean age of end point = 71.36 days) was compared with group 11a (mean age of end point = 96.5 days) and was highly significant when group 1 was compared to group 11b (mean age of end point = 106.4 days).

## Table (5):

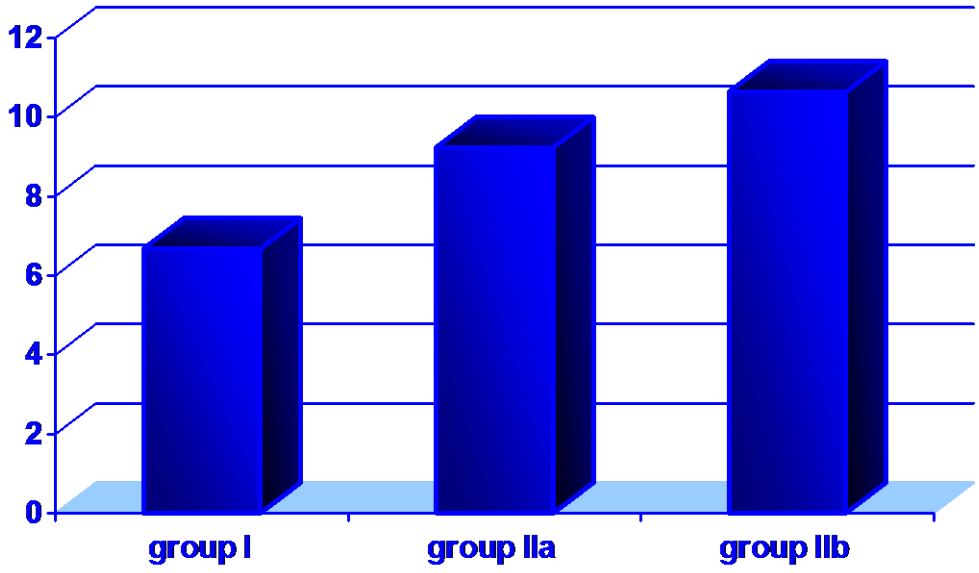
**Comparison of mean ± SD of length of hospital stay (days) among all studied groups**

| | Group 1<br>N = 30 | Group 11a<br>N = 30 | Group 11b<br>N = 30 | F | P |
|---|---|---|---|---|---|
| **Mean ± SD** | 6.67 ± 5.82 | 9.23 ± 5.93 | 10.63 ± 7.18 | | |
| **(Range)** | 3 – 23 | 3 – 21 | 3 – 29 | 5.039 | < 0.05 |
| **Median** | 3 | 7 | 8 | | |

*P > 0.05: non-significant *P < 0.05: significant *P< 0.01: highly significant

## Figure (3):

**Comparison of mean ± SD of length of hospital stay (days) among all studied groups**



## Table (6):

**Least Significant Difference (LSD) of length of hospital stay (days) among all studied groups**

| | **Group 1 (6.67 ± 5.82)** | **Group 11a (9.23±5.93)** |
|---|---|---|
| **Group 11a (9.23±5.93)** | P < 0.05 **Sig.** | --- |
| **Group 11b (10.63±7.18)** | P < 0.01 **HS** | P > 0.05 NS |

**LSD at 0.05 = 3.6 days**

**LSD at 0.01 = 5 days**

The table shows the LSD of length of stay in hospital among all studied groups with no significant statistical difference between group 11a and group 11b. The difference was significant when group 1 (mean length of stay in hospital = 6.67 days) was compared with group 11a (mean length of stay in hospital = 9.23 days) and was highly significant when group 1 was compared with group 11b (mean length of stay in hospital = 10.63 days).

## Table (7):

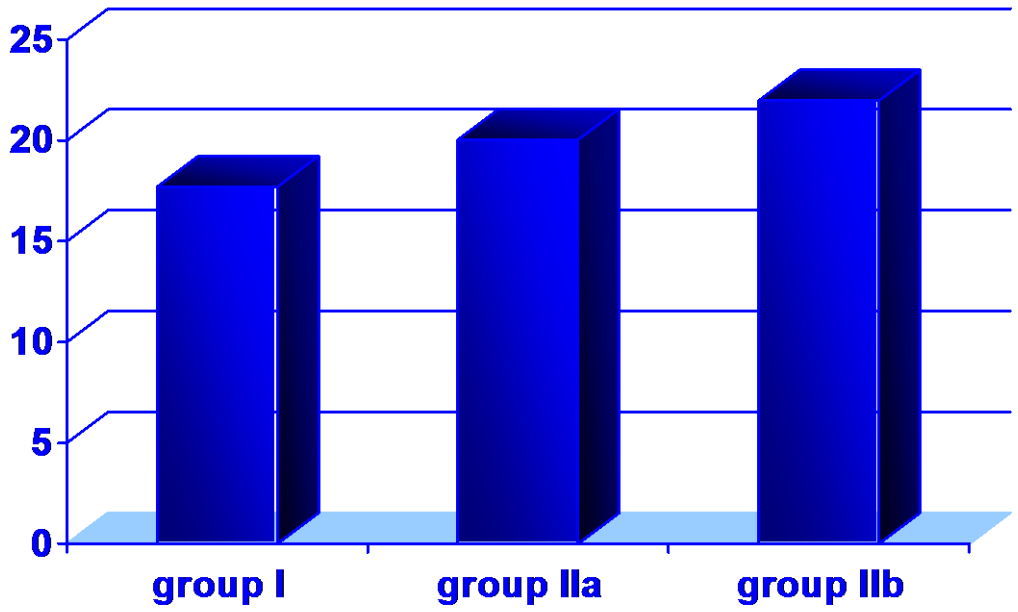
**Comparison of mean ± SD of maternal depression scores among all studied groups**

| | Group 1 N = 30 | Group 11a N = 30 | Group 11b N = 30 | F | P |
|---|---|---|---|---|---|
| **Mean ± SD** | 17.70 ± 3.14 | 20.03 ± 5.50 | 21.97 ± 6.74 | | |
| **(Range)** | 15 – 29 | 16 – 40 | 15 – 40 | 4.80 | < 0.05 |
| **Median** | 17 | 19 | 19 | | |

*P > 0.05: non-significant *P < 0.05: significant *P< 0.01: highly significant

## Figure (4):

**Comparison of mean of maternal depression scores among all studied groups**



## Table (8):

**Least Significant Difference (LSD) of maternal depression scores among all studied groups**

| | **Group 1 (17.70±3.14)** | **Group 11a (20.03±5.50)** |
|---|---|---|
| **Group 11a (20.03±5.50)** | P > 0.05 NS. | --- |
| **Group 11b (21.97±6.74)** | P < 0.05 **Sig.** | P > 0.05 NS |

**LSD at 0.05 = 4.27**

The table shows the LSD of maternal depression scores among all studied groups with no significant statistical difference between group 1 and group 11a, and between group 11a and group 11b. Only the significant statistical difference was present when group 1 (mean of maternal depression scores = 17.70) was compared with group 11b (mean of maternal depression scores = 20.03).

## Table (9):

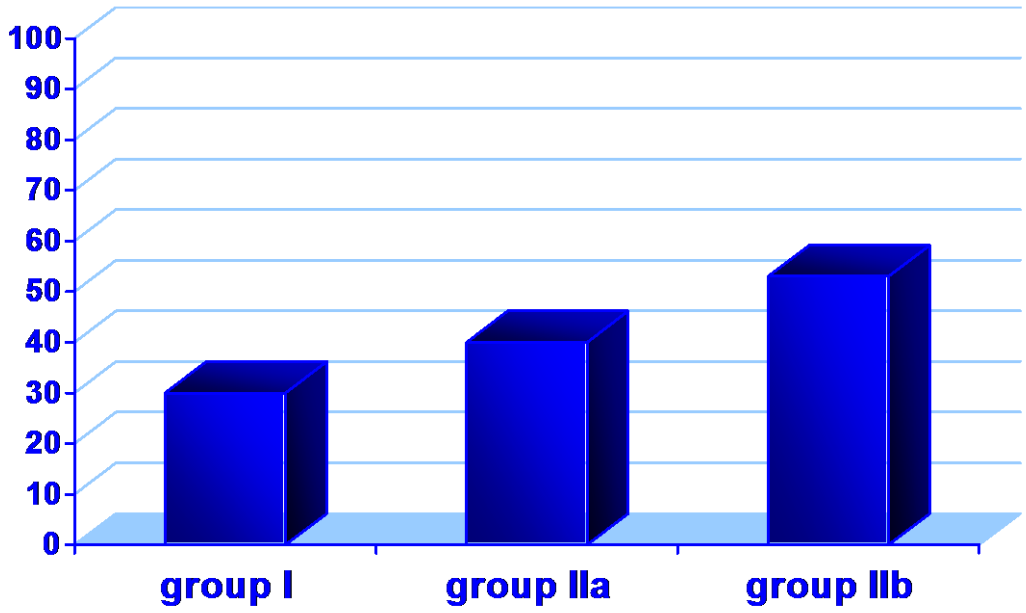
### Comparison of morbidity rates among all studied groups

| Variables | Group 1 N = 30 | | Group 11a N = 30 | | Group 11b N = 30 | | $X^2$ | P | Total N = 90 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No | % | No | % | No | % | | | No | % |
| **Morbidity** | 10 | 30% | 12 | 40% | 16 | 53% | 14.27 | 0.147 | 38 | 42% |
| **No morbidity** | 19 | 70% | 17 | 60% | 12 | 47% | | | 48 | 58% |
| **Dropped** | 1 | | 1 | | 2 | | | | 4 | |

*P > 0.05: non-significant *P < 0.05: significant *P< 0.01: highly significant

## Figure (5):

### Comparison of morbidity rates among all studied groups



## Table (10):

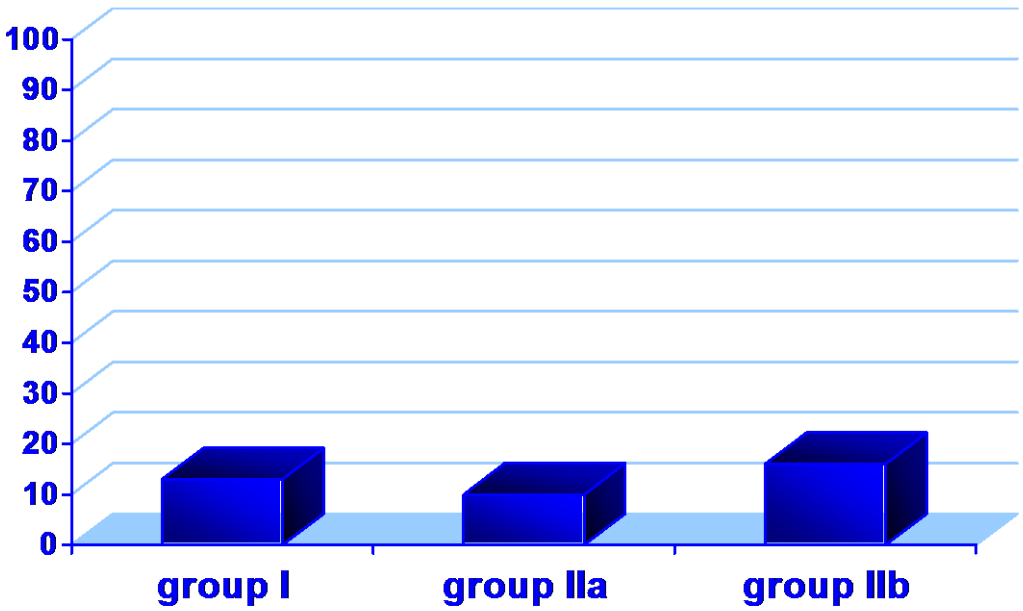
### Comparison of mortality rates among all studied groups

| Variables | Group 1 N = 30 | | Group 11a N = 30 | | Group 11b N = 30 | | $X^2$ | P | Total N = 90 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No | % | No | % | No | % | | | No | % |
| **mortality** | 4 | 13% | 3 | 10% | 5 | 16% | 1.61 | 0.966 | 12 | 13% |
| **No mortality** | 25 | 87% | 26 | 90% | 23 | 84% | | | 74 | 87% |
| **Dropped** | 1 | | 1 | | 2 | | | | 4 | |

*P > 0.05: non-significant *P < 0.05: significant *P< 0.01: highly significant

## Figure (6):

Comparison of mortality rates among all studied groups



## Table (11):

**Correlation of maternal depression scores with other variables included in the study in all studied groups.**

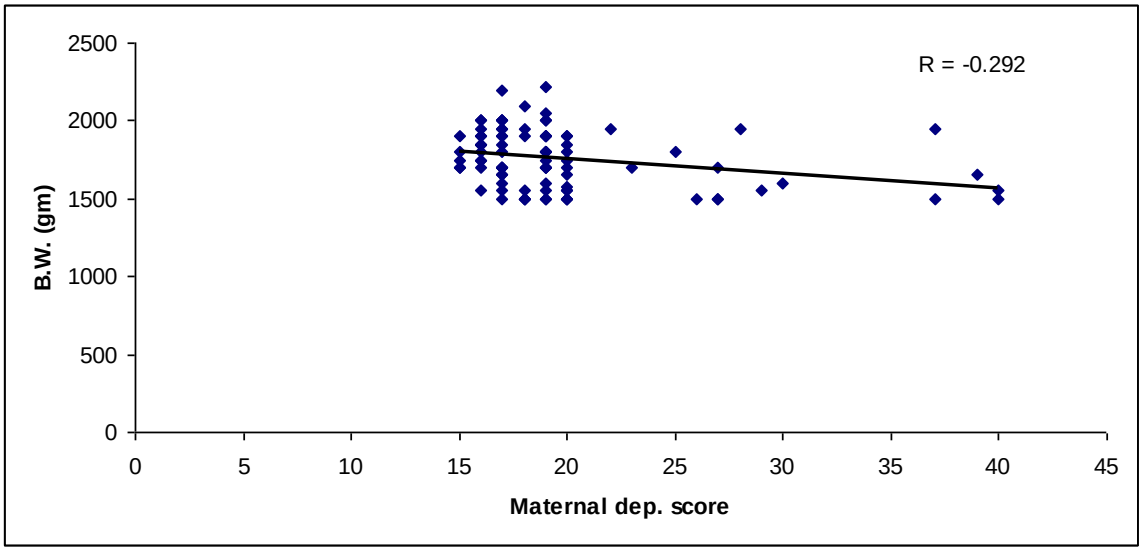
| Variables | r | P |
|---|---|---|
| Birth weight | -0.292 | 0.005 |
| Gestational age | -0.211 | 0.046 |
| Maternal age | 0.267 | 0.011 |
| Father age | 0.280 | 0.008 |
| Father-mother age difference | 0.186 | 0.080 |
| Length of hospital stay | 0.277 | 0.008 |
| Age of end point | 0.243 | 0.034 |
| Morbidity age | 0.345 | 0.069 |
| Mortality age | -0.119 | 0.699 |

*P > 0.05: non-significant *P < 0.05: significant *P< 0.001: highly significant

The table shows that there is significant +ve correlation between maternal depression scores and father age, mother age, length of hospital stay and age of end point (P<0.05) in all studied groups. Also, there is a significant –ve correlation between maternal depression scores and birth weight, gestational age (P<0.05) in all studied groups included in the study. Otherwise, there is no significant correlation between maternal depression scores and other parameters included in the study in all groups.

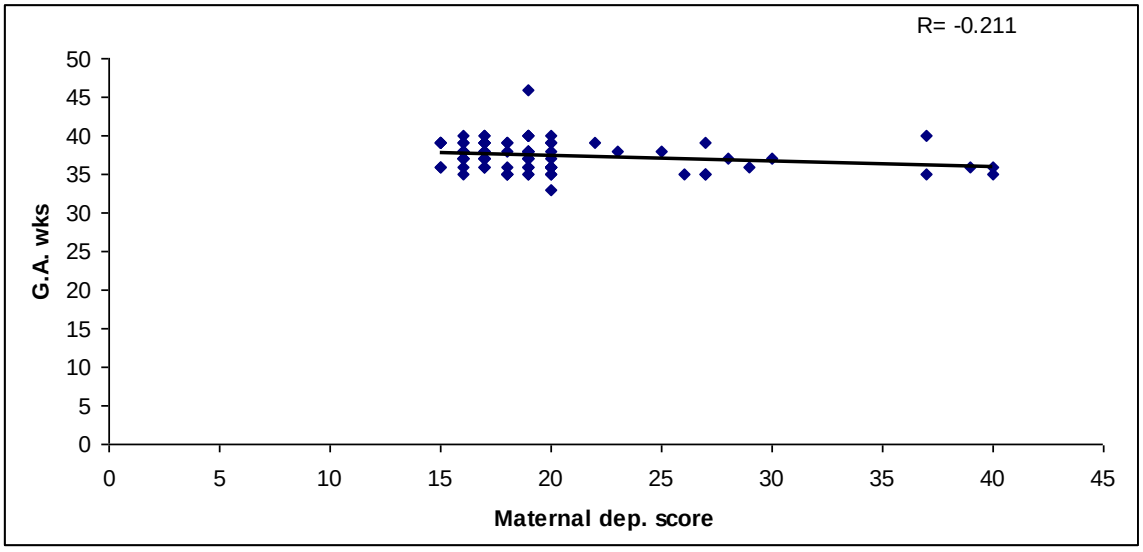
## Figure (7):

**Correlation of maternal depression scores with birth weight in all studied groups**



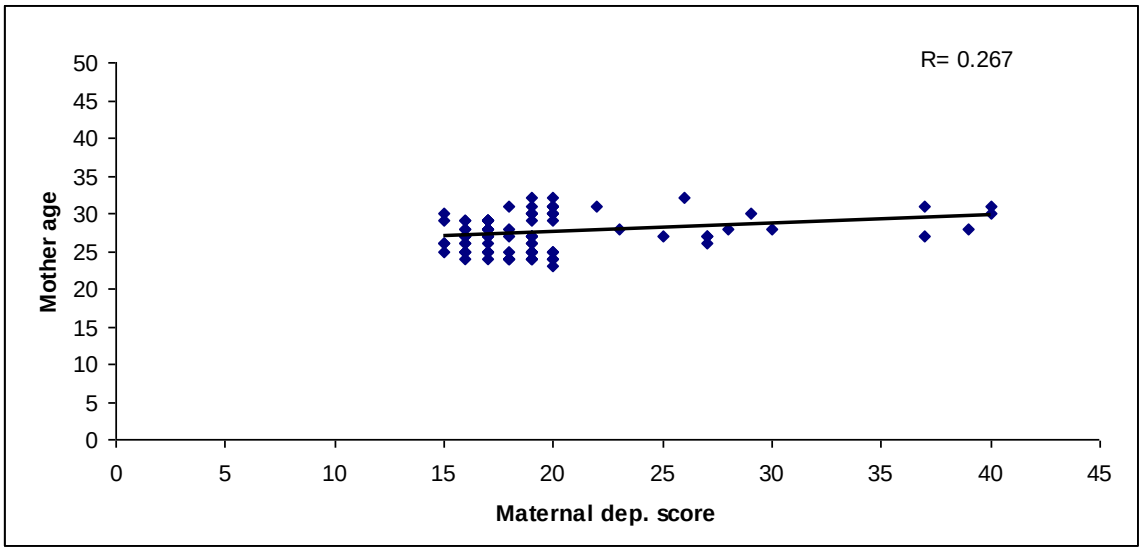

## Figure (8):

**Correlation of maternal depression scores with gestational age in all studied groups**



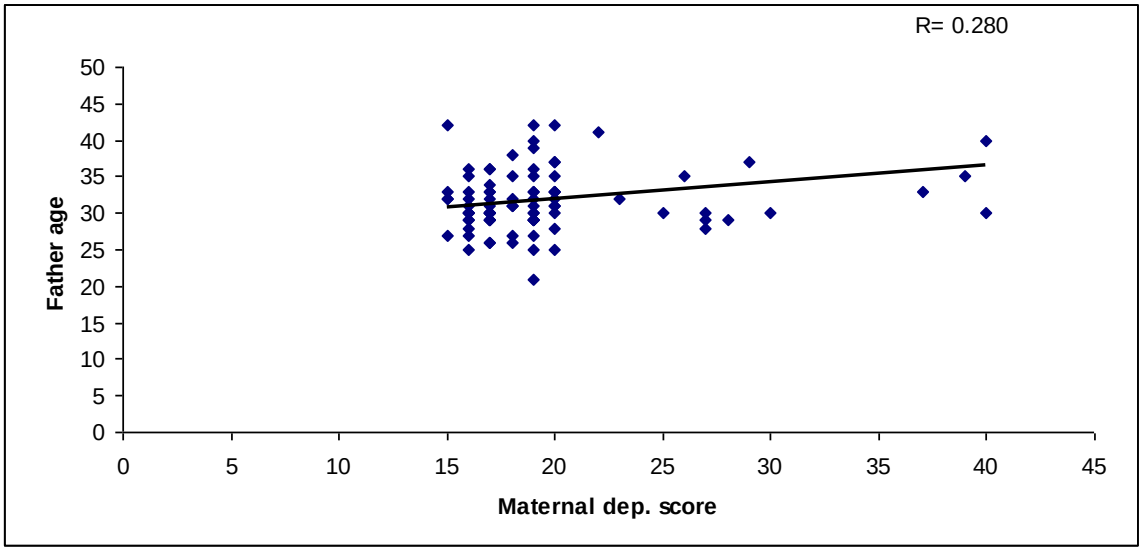
## Figure (9):

**Correlation of maternal depression scores with maternal age in all studied groups**



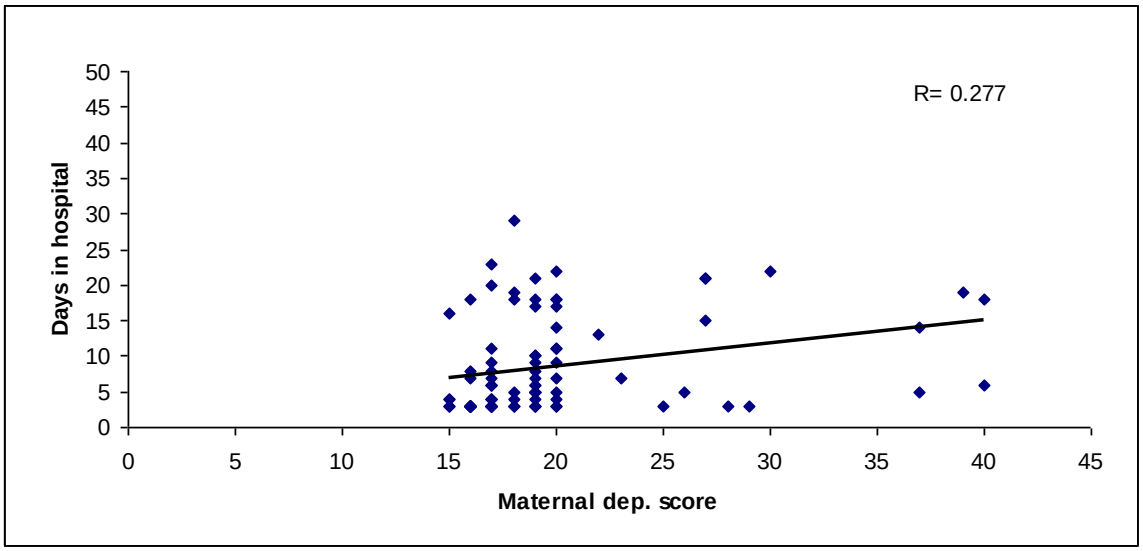

## Figure (10):

**Correlation of maternal depression scores with father age in all studied groups**



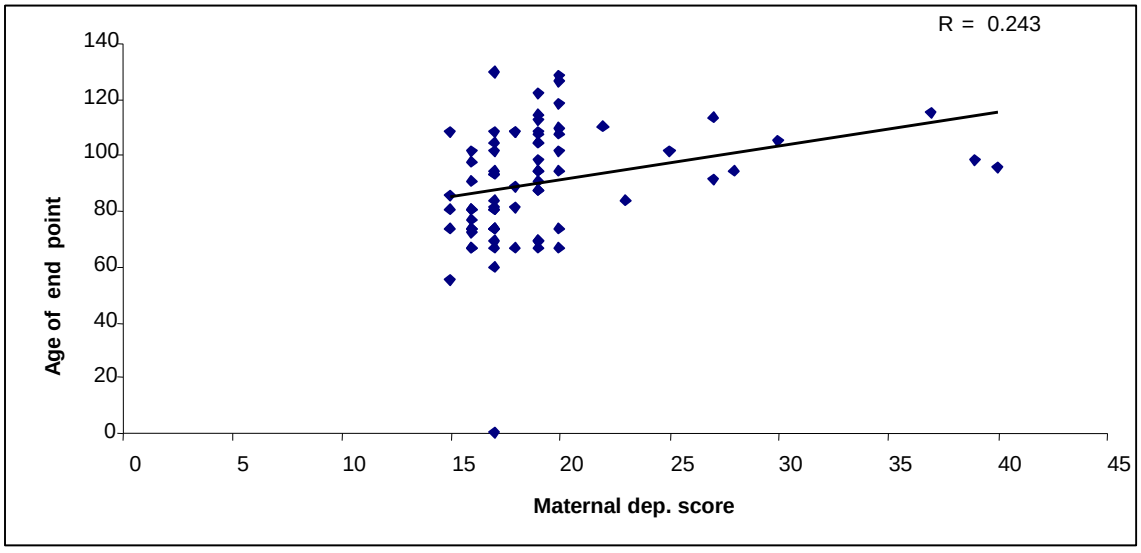
## Figure (11):

**Correlation of maternal depression scores with length of hospital stay in all studied groups**




## Figure (12):

**Correlation of maternal depression scores with age of the end point (doubling the birth weight) in all studied groups**



## Table (12):

**Comparison of mean ± SD of scores of knowledge, attitude and practice of medical staff work in NICU of Cairo University Hospital towards KMC before and after implementation of KMC.**

| | Total No. of Questions | Score | | | | | | P |
|---|---|---|---|---|---|---|---|---|
| | | Before implementation of the study N = 21 | | | After implementation of the study N = 21 | | | |
| | | "Yes" observations | | Mean±SD | "Yes" observations | | Mean±SD | |
| **Knowledge** | 14 | No | 81/294 | 5.79±1.67 | No | 130/294 | 9.29±1.86 | < 0.05 |
| | | % | 27.6 | | % | 44.2 | | |
| **Attitude** | 14 | No | 115/294 | 8.21±1.81 | No | 167/294 | 11.93±1.85 | < 0.05 |
| | | % | 39.1 | | % | 56.8 | | |
| **Practice** | 17 | No | 100/357 | 7.14±1.85 | No | 116/357 | 8.12±1.93 | > 0.05 |
| | | % | 28.0 | | % | 32.5 | | |

*P > 0.05: non-significant *P < 0.05: significant *P< 0.001: highly significant

The table shows a statistically significant difference of mean ± SD of scores of knowledge and attitude towards KMC of medical staff work in NICU of Cairo University Hospital {total number = 21 (7 physicians & 14 nurses)} before and after implementation of KMC ($p < 0.05$), but there is no statistically significant difference as regard the practice ($p>0.05$).

## Table (13):

**Comparison of mean ± SD of scores of knowledge, attitude and practice of medical staff work in NICU of Zagazig University Hospital towards KMC before and after implementation of KMC.**

| | Total No. of Questions | Score | | | | | | P |
|---|---|---|---|---|---|---|---|---|
| | | Before implementation of the study N = 36 | | | After implementation of the study N = 36 | | | |
| | | "Yes" observations | | Mean±SD | "Yes" observations | | Mean±SD | |
| **Knowledge** | 14 | No | 131/504 | 9.36±1.64 | No | 206/504 | 14.70±1.84 | < 0.05 |
| | | % | 26.0 | | % | 40.9 | | |
| **Attitude** | 14 | No | 201/504 | 14.36±1.83 | No | 224/504 | 16.00±1.86 | > 0.05 |
| | | % | 39.9 | | % | 44.4 | | |
| **Practice** | 17 | No | 174/612 | 10.24±1.86 | No | 180/612 | 10.56±1.88 | > 0.05 |
| | | % | 28.4 | | % | 29.4 | | |

*P > 0.05: non-significant *P < 0.05: significant *P< 0.001: highly significant

The table shows no statistically significant difference of mean ± SD of scores of attitude and practice towards KMC of medical staff work in NICU of Zagazig University Hospital {total number = 36 (11physicians & 25 nurses)} before and after implementation of KMC (p > 0.05), but there is a statistically significant difference as regard knowledge (p<0.05).

## Table (14):

**Comparison of mean ± SD of scores of knowledge, attitude and practice of medical staff work in NICUs of the targeted hospitals (Cairo and Zagazig University Hospitals) towards KMC before and after implementation of KMC.**

| | Total No. of Questions | Score | | | | | | P |
|---|---|---|---|---|---|---|---|---|
| | | Before implementation of the study N = 57 | | | After implementation of the study N = 57 | | | |
| | | "Yes" observations | | Mean±SD | "Yes" observations | | Mean±SD | |
| **Knowledge** | 14 | No | 212/798 | 15.14±3.32 | No | 356/798 | 25.43±5.87 | < 0.05 |
| | | % | 26.6 | | % | 44.6 | | |
| **Attitude** | 14 | No | 322/798 | 23.00±5.21 | No | 388/798 | 27.7±5.98 | > 0.05 |
| | | % | 40.4 | | % | 48.6 | | |
| **Practice** | 17 | No | 274/969 | 16.12±3.40 | No | 306/969 | 18.0±3.51 | > 0.05 |
| | | % | 28.3 | | % | 31.6 | | |

*P > 0.05: non-significant *P < 0.05: significant *P< 0.001: highly significant

The table shows a statistically significant difference of mean ± SD of scores of knowledge of KMC of medical staff work in NICUs of Cairo and Zagazig University Hospitals (total number = 57) before and after implementation of KMC ($p < 0.05$), but there is no any statistically significant difference as regard attitude and practice ($p>0.05$).