



ISSN NO. 2320-5407

Journal Homepage: - [www.journalijar.com](http://www.journalijar.com)

## INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/2632  
DOI URL: <http://dx.doi.org/10.21474/IJAR01/2632>



INTERNATIONAL JOURNAL OF  
ADVANCED RESEARCH (IJAR)  
ISSN 2320-5407  
Journal homepage: <http://www.journalijar.com>  
Journal DOI:10.21474/IJAR01

### RESEARCH ARTICLE

#### DURATION OF BREASTFEEDING AND FACTORS THAT AFFECT IT IN ALMADINAH 2016

**Abdulrahman Alsaedi, Abdulelah Almushtak, Ahmad Almohamadi, Abdullatif Aljabri, Muath Alhazmi  
Saud Alharbi, Samar Albahlol, GhadaKhair and Haifa Alrumeh.**

#### *Manuscript Info*

#### *Manuscript History*

Received: 30 October 2016  
Final Accepted: 29 November 2016  
Published: December 2016

#### *Abstract*

Breastfeeding has a number of benefits to both mother and baby, which infant formula lacks. Health organizations, including the World Health Organization (WHO), recommend breastfeeding exclusively for six months. This means that no other foods or drinks other than possibly vitamin D are typically given. After the introduction of foods at six months of age, recommendations include continued breastfeeding until at least one to two years of age. Sample of 420 participants was collected in Almadinah City, In Saudi Arabia. The study included 420 participants a Postal survey was sent to mothers randomly from the general population of Almadinah using a questionnaire based on discussed risk factors. 87% of mothers breastfeed their babies while 13% Never did. 31% of mothers breastfeed their babies for 1-6 months, 21% for 6-12 months, 22% for 12-18 months, 27% for 18-24 months. 66% used supplementary milk while 34% never used it. The percentage of breastfeeding in Almadina is higher than expected, higher than global percent by 6%. The average duration of breastfeeding in Almadinah is higher than other city in KSA. There is no relation between age and breastfeeding and its duration and supplementary milk use.

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#### **Introduction and literature review:-**

Breastfeeding or nursing is the feeding of babies and young children with milk from a woman's breast. Health professionals recommend that breastfeeding begin within the first hour of a baby's life and continue as often and as much as the baby wants. During the first few weeks of life babies may nurse roughly every two to three hours. The duration of a feeding is usually ten to fifteen minutes on each breast. Older children feed less often. Mothers may pump milk so that it can be used later when breastfeeding is not possible. Breastfeeding has a number of benefits to both mother and baby, which infant formula lacks {1}

Health organizations, including the World Health Organization (WHO), recommend breastfeeding exclusively for six months. {2}

This means that no other foods or drinks other than possibly vitamin D are typically given. After the introduction of foods at six months of age, recommendations include continued breastfeeding until at least one to two years of age. {3}

Globally about 38% of infants are only breastfed during their first six months of life.[4] In the United States, about 75% of women begin breastfeeding and about 13% only breastfeed until the age of six months.[3]

Breast milk has an optimal balance of fat, sugar, water, and protein that is needed for a baby's growth and development. Breastfeeding triggers biochemical reactions which allows for the enzymes, hormones, growth factors and immunologic substances to effectively defend against infectious diseases for the infant.

The first type, produced during the first days after childbirth, is called colostrum. Colostrum is easy to digest although it is more concentrated than mature milk. It has a laxative effect that helps the infant to pass early stools, aiding in the excretion of excess bilirubin, which helps to prevent jaundice.

In addition, AAP states that while breastfeeding mothers "should avoid the use of alcoholic beverages", an "occasional celebratory single, small alcoholic drink is acceptable, but breastfeeding should be avoided for 2 hours after the drink. {5}

Weaning is the process of replacing breast milk with other foods; the infant is fully weaned after the replacement is complete. Psychological factors affect the weaning process for both mother and infant, as issues of closeness and separation are very prominent {6}

Breast milk contains several anti-infective factors such as bile salt stimulated lipase (protecting against amoebic infections) and lactoferrin (which binds to iron and inhibits the growth of intestinal bacteria). {7}{8}

Infants exclusively breastfed have less chance of developing diabetes mellitus type 1 than those with a shorter duration of breastfeeding. {9}

Infants that are otherwise healthy uniformly benefit from breastfeeding. "No known disadvantages" stem from breastfeeding. However, extra precautions should be taken or breastfeeding be avoided in circumstances including certain infectious diseases, or use of certain medications{10}{11}

Race, ethnicity and socioeconomic status affect choice and duration in the United States. A 2011 study found that on average, US women who breastfed had higher levels of education, were older and were more likely to be white.

Globally about 38% of babies are just breastfed during their first six months of life.[2] In the United States as of 2012, 75% of women started breastfeeding, 43% breastfeed for six months though only 13% exclusively breastfed, and 23% breastfeed for twelve months. {12}

Breastfeeding rates in the United Kingdom were the lowest in the world in 2015 with only 0.5% of mothers still breastfeeding at a year, while in Germany 23% are doing so, 56% in Brazil and 99% in Senegal.{13}

That compares with 23% in Germany, 56% in Brazil and 99% in Senegal.

The researchers said it was a "widespread misconception" that breastfeeding was beneficial only in poor countries.

In the UK, 81% of mothers had tried breastfeeding at some point, but only 34% were breastfeeding at six months and 0.5% at 12 months.

In the US, 79% started, 49% were still going after six months and 27% after a year.

It is the worst record in the world. Breastfeeding is far more common in developing countries, but the UK figures are behind even similar countries in Europe.

Women in the UK are advised to feed their baby exclusively on breast milk for the first six months and then a combination of breast milk and other foods, however, it does not give a recommend end-point. {14}

**Objectives:-**

- To know the duration of breastfeeding in Almadinah 2016.
- To study the risk factors that affect the duration of breastfeeding.
- To know the percentage of use supplementary milk .

**Method and participant:-**

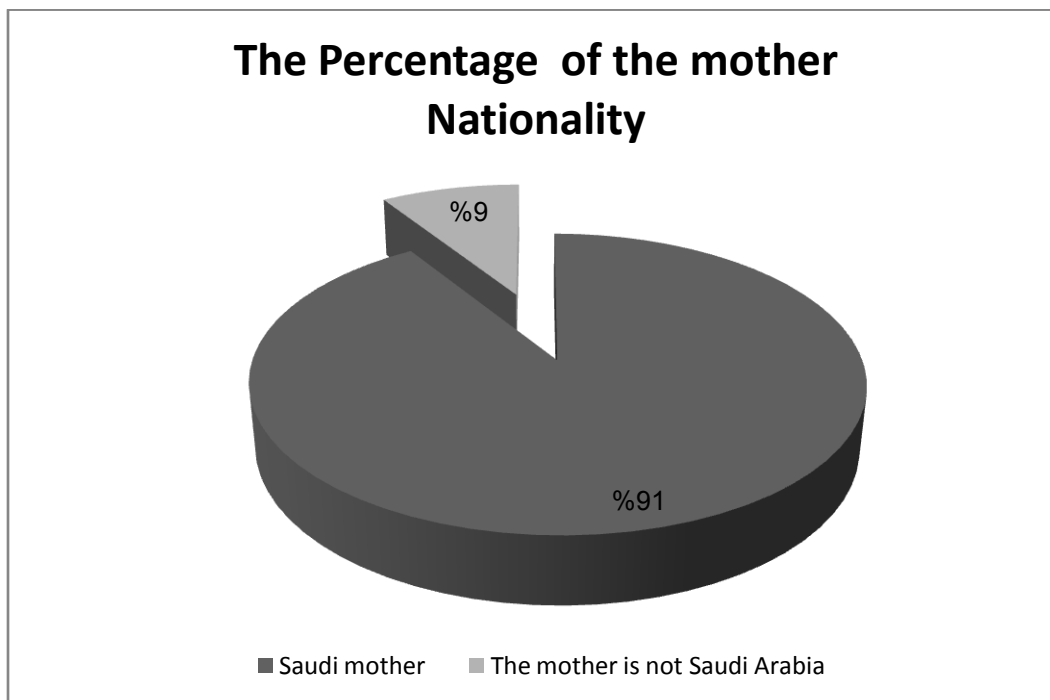
Sample of 420 participants was collected in Almadinah City ,In Saudi Arabia. The study included 420 participants a Postal survey was sent to mothers randomly from the general population of Almadinah using a questionnaire based on discussed risk factors . Data were analyzed using SPSS version 16. Univariate analysis was done and cross tabulation was used to summarize the frequency and percentage of the variables. Chi-square was used as an appropriate statistical test and  $P \leq 0.05$  was used as a statistical significant level. Multiple regression was used to control for confounders and assess the risk factors.

**Results:-**

87% of mothers breastfeed their babies while 13% Never did . 31% of mothers breastfeed their babies for 1-6 months, 21% for 6-12 months, 22% for 12-18 months, 27% for 18-24 months .

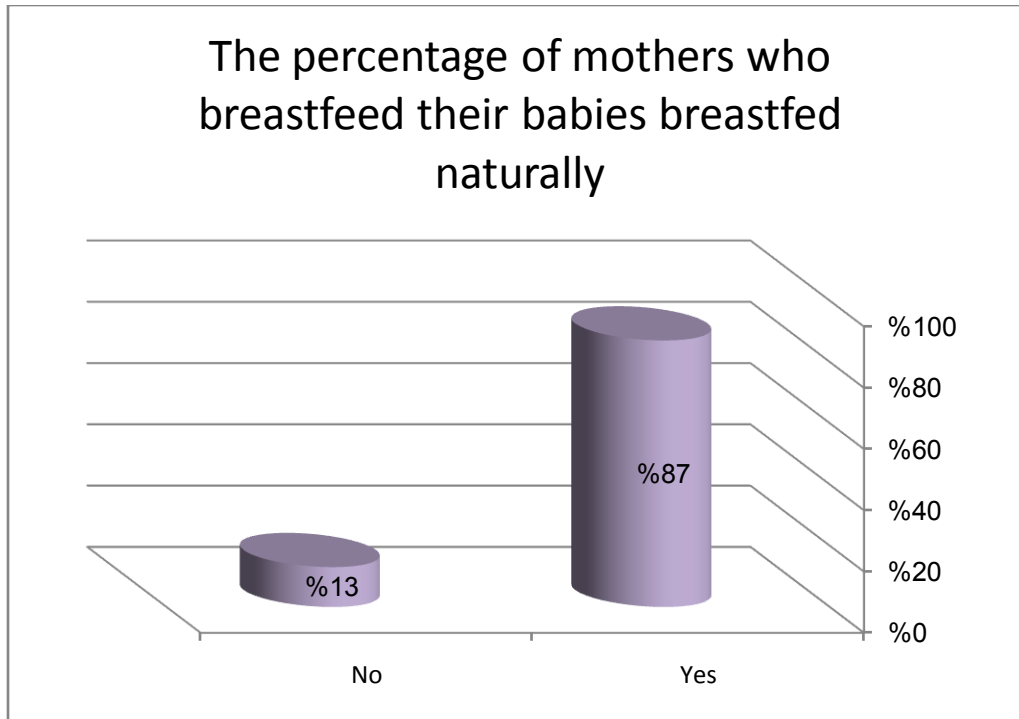
66% used supplementary milk while 34% never used it .

50% of mothers who used supplementary milk between the first month to six months, 31% after 6 months 19% after 1 year .



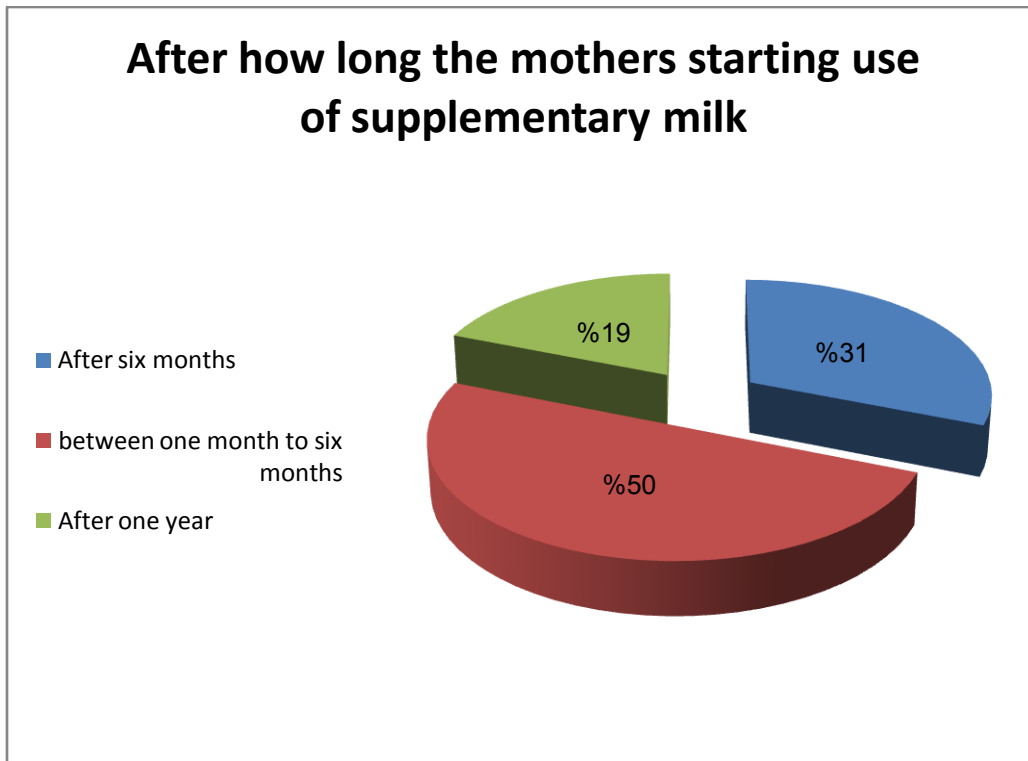
A total of 422 person participated in the survey.

The majority of the respondents 91% are Saudi mothers and 9% non-saudi mothers.



**The majority of mothers:-**  
87% of mothers who have breastfeed their babies.

**The minority of mothers:-**  
13% of mothers did not breastfeed their babies.



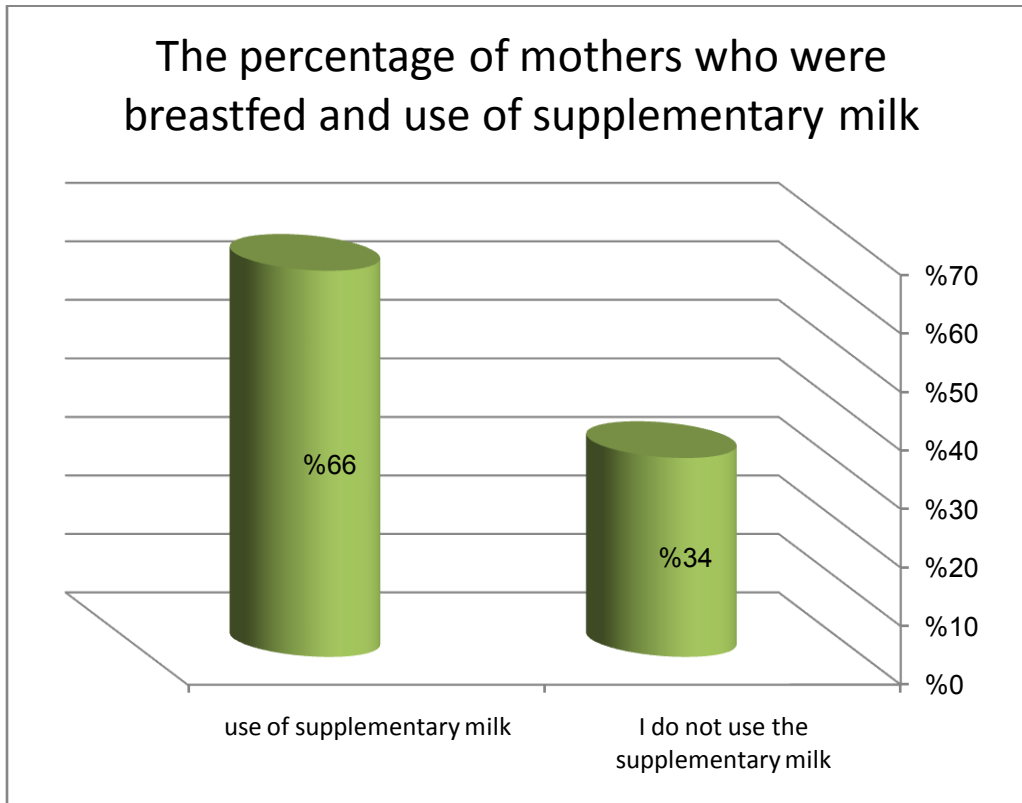
**The majority of mothers:-**  
50% of mothers who used supplementary milk between the first month to six months.

**The mid point of mothers:-**

31% of mothers who used supplementary milk after six months.

**The minority of mothers:-**

19% of mothers who used supplementary milk after one year.

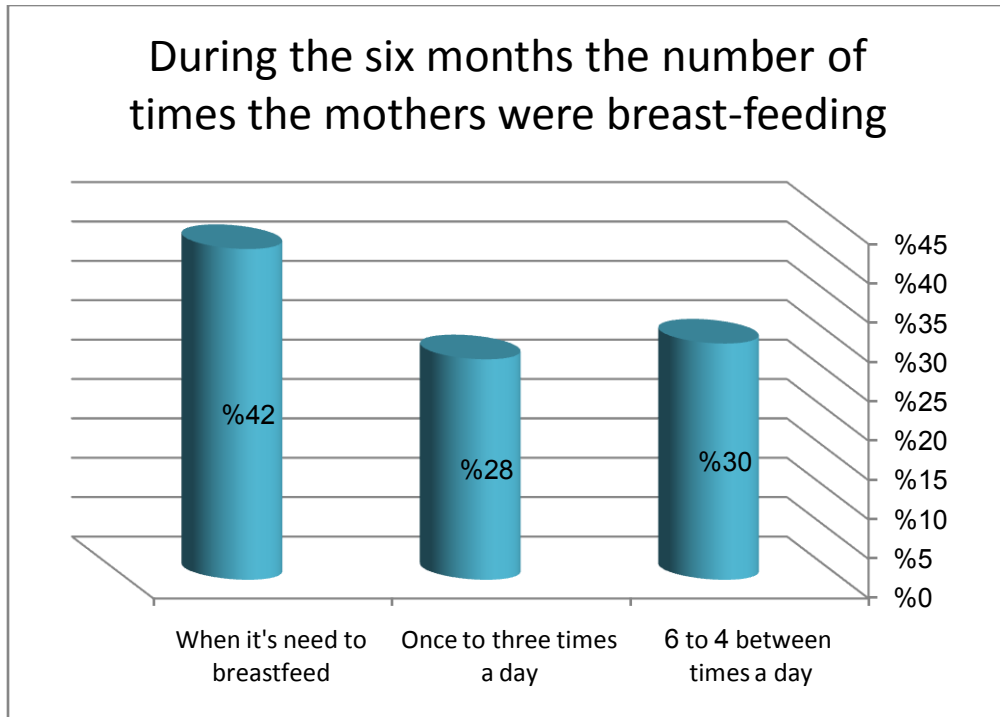


**The majority of mothers:-**

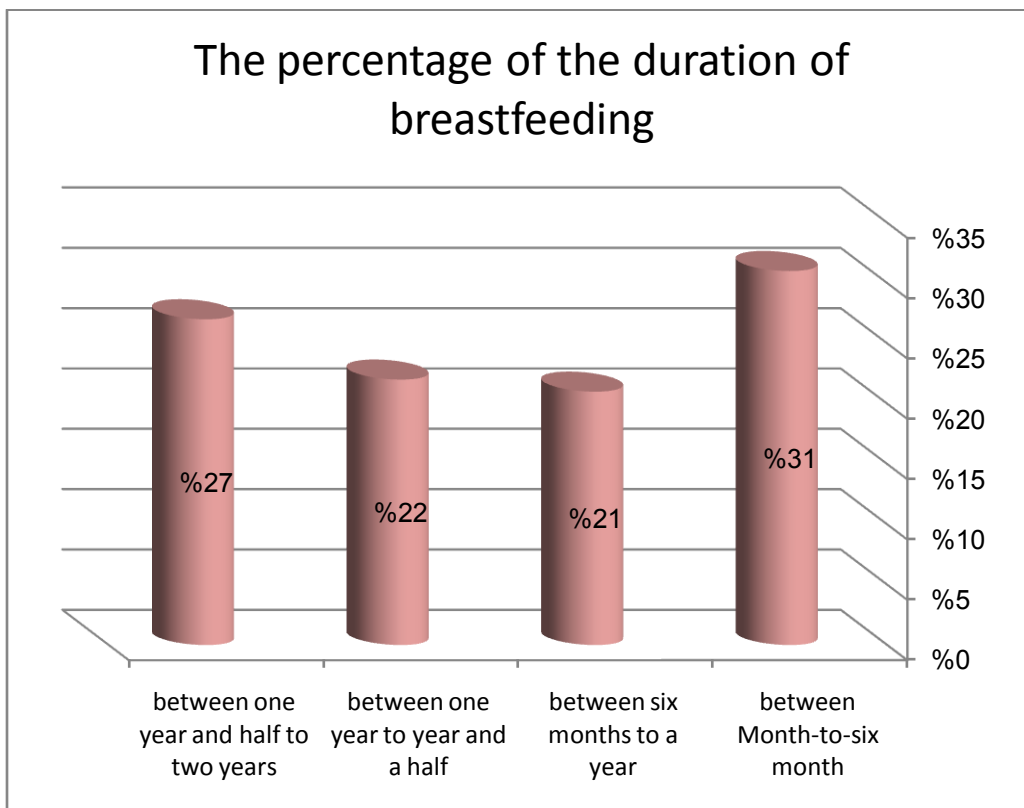
66% of mothers they used supplementary milk.

**The minority of mothers:-**

34% of mothers they did not used supplementary milk.

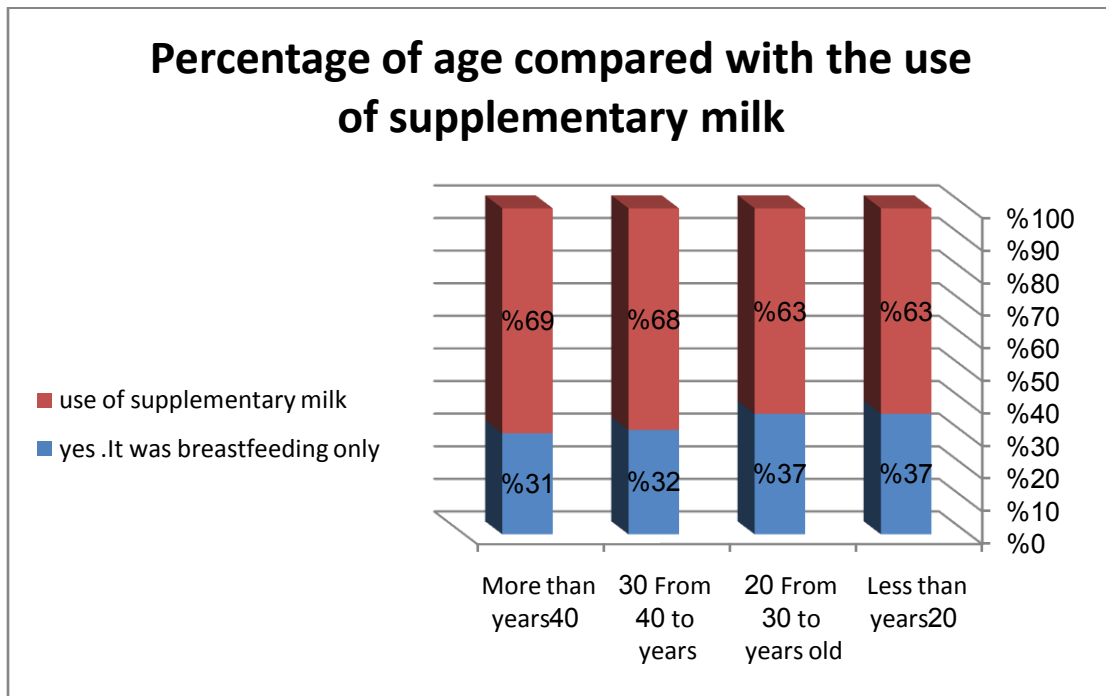


42% of mothers breastfed their children only when they need to breastfeed  
30% of mothers breastfed their children 4-6 times a day  
28 % of mothers breastfed their children 1-3 times a day



31% of the mothers were breast-feeding period for their newborns from 1 month to 6 months

27% of the mothers were breast-feeding period for their newborns from one year and half to two years  
 22% of the mothers were breast-feeding period for their newborns from one year to one year and a half  
 21% of the mothers were breast-feeding period for their newborns from 6 months to one year



63% of mothers aged between 20-30 years were using supplemental milk and 37% did not use supplementary milk  
 68% of mothers aged between 30-40 years were using supplemental milk and 32% did not use supplementary milk  
 69% of mothers aged more than 40 years were using supplemental milk and 31% did not use supplementary milk  
 63% of mothers aged less than 20 years were using supplemental milk and 37% did not use supplementary milk

**After the hypothesis:-**

Alternative hypothesis:that there is a relationship between age and people who are using supplemental milk

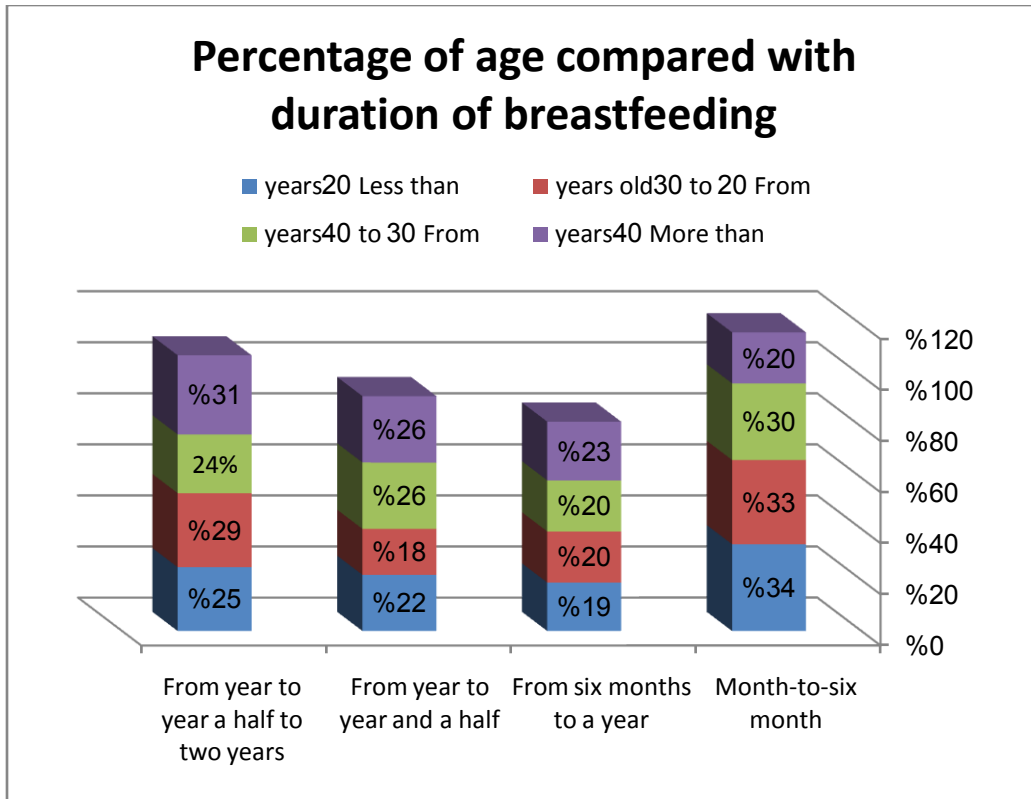
Value of Chi-Square Tests =1.066

Degree of freedom=3

And the p-value was = 0.785

**After statistical testChi-Square for Independence:-**

with Confidence level 95% turned out there is no relation between age and the people who are using supplemental milkThese two variables are independent.



**Mothers less than 20 years:-**

34% were breastfeeding period of one month to 6 months  
 25% were breastfeeding period from one year and a half to two years  
 22% were breastfeeding period from year to year and a half  
 19% were breastfeeding period of 6 months to a year

**Mothers aged 20-30 years:-**

33% were breastfeeding one month to 6 months  
 29% were breastfeeding period than a year and a half to two years  
 18% were breastfeeding period from year to year and a half  
 20% were breastfeeding for 6 months to a year

**Mothers aged 30-40 years:-**

30% were breastfeeding one month to 6 months  
 26% were breastfeeding period from year to year and a half  
 24% were breastfeeding period than a year and a half to two years  
 20% were breastfeeding for 6 months to a year

**Mothers more than 40 years:-**

31% were breastfeeding period than a year and a half to two years  
 26% were breastfeeding period from year to year and a half  
 23% were breastfeeding period of 6 months to a year  
 20% were breastfeeding period of one month to 6 months

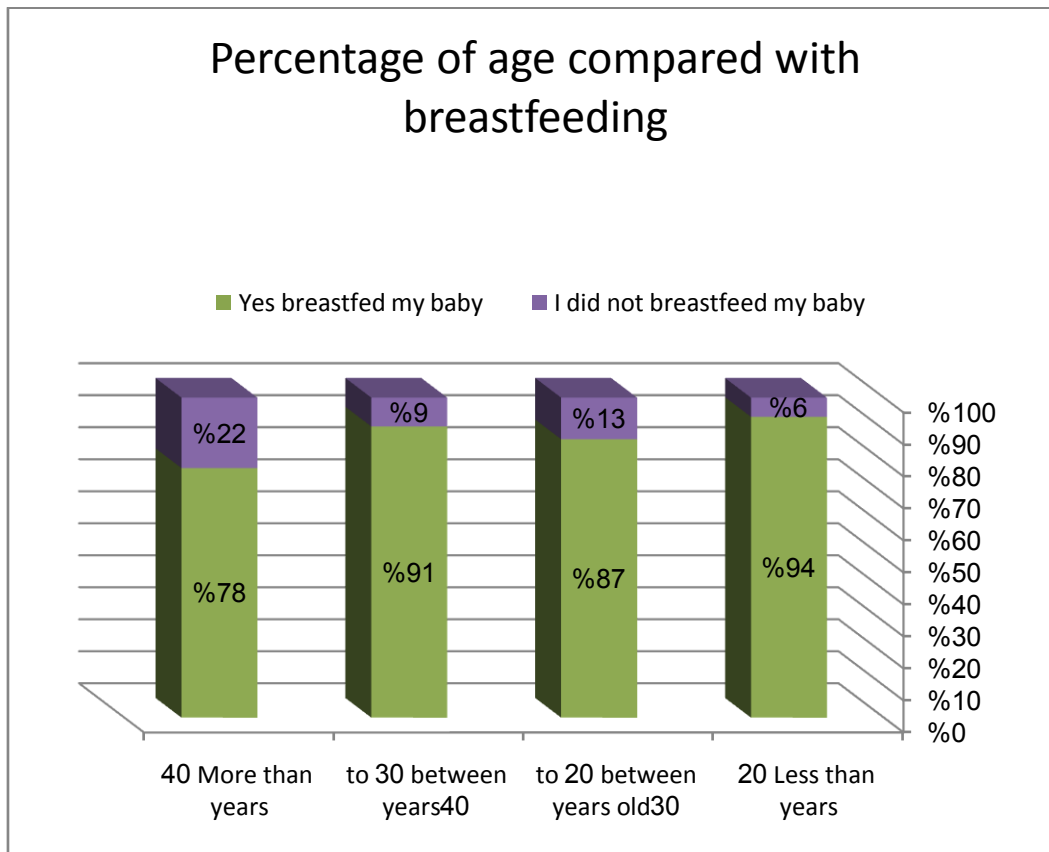
**After the hypothesis:-**

Alternative hypothesis: That there is a relationship between age and duration of breast-feeding  
 The value of Chi-Square Tests =5.928  
 Degree of freedom=9  
 And the p-value was = 0.747



**After statistical test Chi-Square for Independence:-**

with Confidence level 95% turned out there is no relation between age and the duration of breast-feeding These two variables are independent.



**Mothers less than 20 years:-**

94% of mothers less than twenty years breastfed their babies  
 6% of mothers less than twenty years Not breastfeed their babies

**Mothers aged 20-30 years:-**

87% of mothers between 20-30 years breastfed their babies  
 13% of mothers between 20-30 years Not breastfeed their babies

**Mothers aged 30-40 years:-**

91% of mothers between 30-40 years breastfed their babies  
 9% of mothers between 30-40 years Not breastfeed their babies

**Mothers more than 40 years:-**

78% of mothers more 40 years breastfed their babies  
 22% of mothers more 40 years Not breastfeed their babies

**After the hypothesis:-**

Alternative hypothesis: That there is a relationship between age and breastfeeding

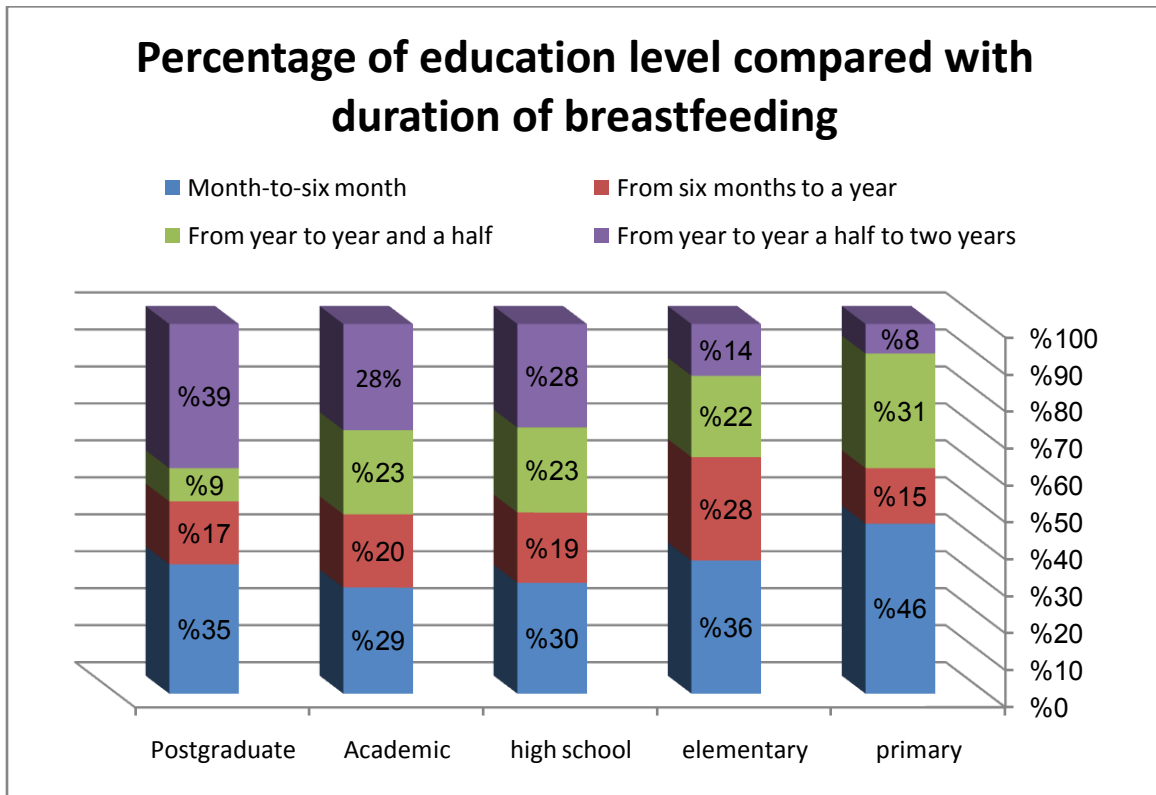
The value of Chi-Square Tests =6.834

Degree of freedom=3

And the p-value was = 0.073

**After statistical test Chi-Square for Independence:-**

with Confidence level 95% turned out there is no relation between age and the breastfeeding. These two variables are independent.



**Mothers elementary level of education:-**

36% were breastfeeding from one month to six months  
 28% were breastfeeding period of six months to one year  
 22% were breastfeeding period from year to year and a half  
 14% were breastfeeding duration from one year to two years

**Mothers primary level of education:-**

46% were breastfeeding from one month to six months  
 31% were breastfeeding period from year to year and a half  
 15% were breastfeeding period of six months to one year  
 8% were breastfeeding duration from one year to two year

**Mothers high school level of education:-**

30% were breastfeeding from one month to six months  
 23% were breastfeeding period from year to year and a half  
 19% were breastfeeding period of six months to one year  
 28% were breastfeeding duration from one year to two years

**Mothers Academic level of education:-**

29% were breastfeeding from one month to six months  
 23% were breastfeeding period from year to year and a half  
 20% were breastfeeding period of six months to one year  
 28% were breastfeeding duration from one year to two years

**Mothers postgraduate level of education:-**

35% were breastfeeding from one month to six months  
 9% were breastfeeding period from year to year and a half  
 17% were breastfeeding period of six months to one year  
 39% were breastfeeding duration from one year to two years

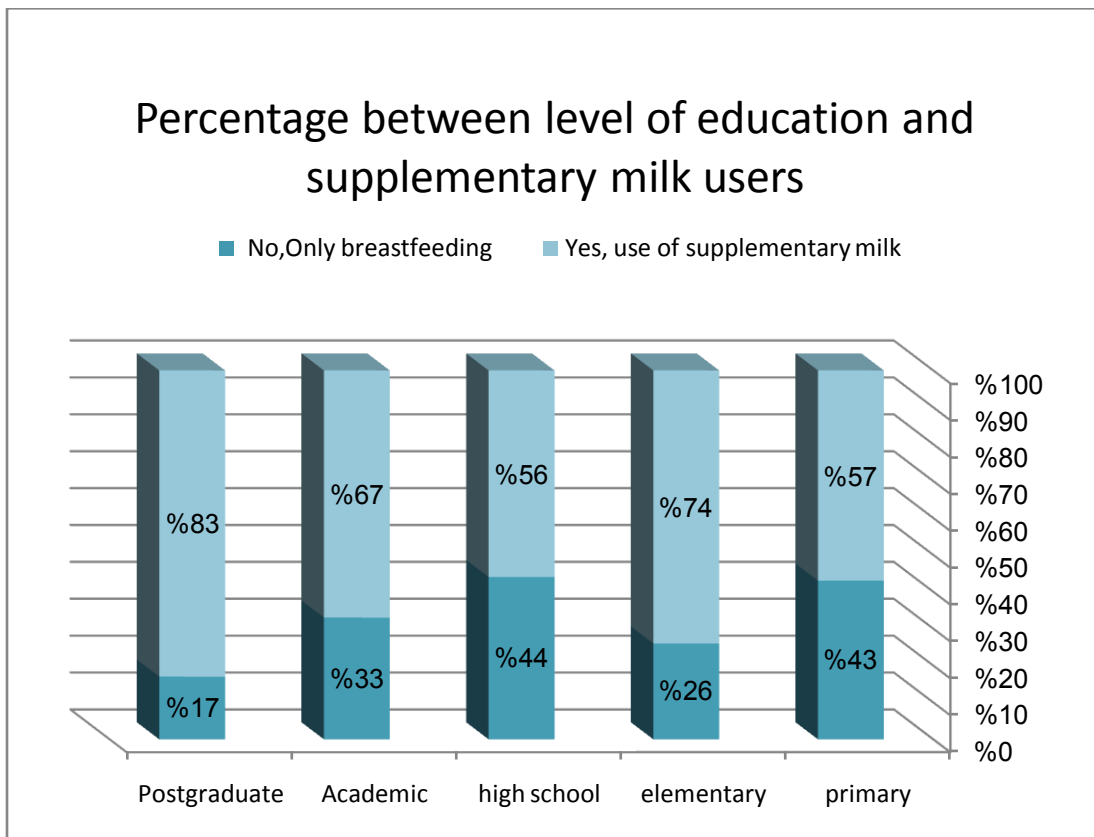
**After the hypothesis:-**

**Alternative hypothesis:-**

That there is a relationship between the level of education and the duration of breast-feeding  
 The value of Chi-Square Tests =11.003  
 Degree of freedom=12  
 And the p-value was = 0.529

**After statistical test Chi-Square for Independence:-**

with Confidence level 95% turned out there is no relation between level of education and the duration of breast-feeding These two variables are independent.



**Mothers elementary level of education:-**

74% used complementary milk  
 26% did not use supplementary milk

**Mothers primary level of education:-**

57% used complementary milk  
 43% did not use supplementary milk

**Mothers high school level of education:-**

56% used complementary milk  
 44% did not use supplementary milk

**Mothers Academic level of education:-**

67% used complementary milk  
 33% did not use supplementary milk

**Mothers postgraduate level of education:-**

83% used complementary milk  
 17% did not use supplementary milk

**After the hypothesis:-**

**Alternative hypothesis:-**

That there is a relationship between the level of education and the use the supplementary milk

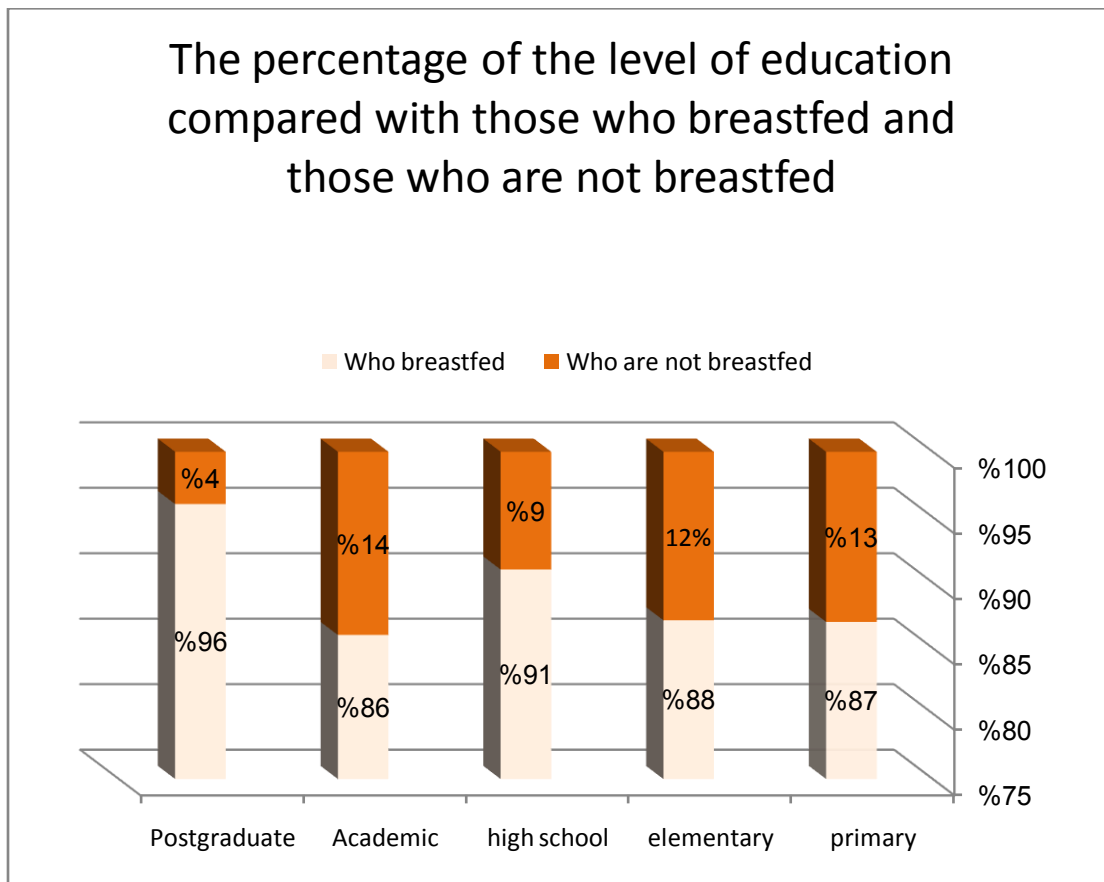
The value of Chi-Square Tests =8.793

Degree of freedom=4

And the p-value was = 0.066

**After statistical test Chi-Square for Independence:-**

with Confidence level 95% turned out there is no relation between level of education and the people who are using supplemental milk These two variables are independent.



**Mothers elementary level of education:-**

88% of mothers breastfed their children  
 12% of mothers did not breastfeed their children

**Mothers primary level of education:-**

87% of mothers breastfed their children  
 13% of mothers did not breastfeed their children

**Mothers high school level of education:-**

91% of mothers breastfed their children  
 9% of mothers did not breastfeed their children

**Mothers Academic level of education:-**

86 % of mothers breastfed their children  
 14 % of mothers did not breastfeed their children

**Mothers postgraduate level of education:-**

86 % of mothers breastfed their children  
 4 % of mothers did not breastfeed their children

**After the hypothesis:-**

**Alternative hypothesis:-**

That there is a relationship between the level of education and the breastfeeding

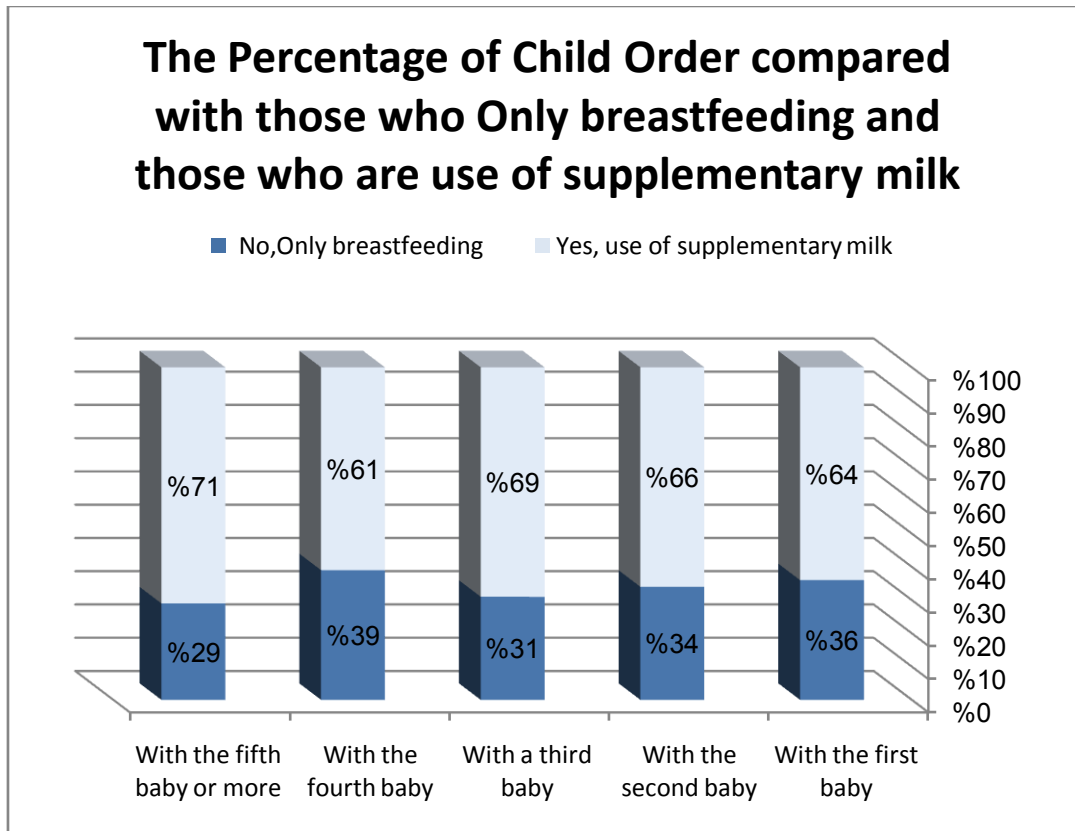
The value of Chi-Square Tests =3.618

Degree of freedom=4

And the p-value was = 0.46

**After statistical test Chi-Square for Independence:-**

with Confidence level 95% turned out there is no relation between level of education and breastfeeding These two variables are independent.



**Mothers who used the supplementary milk with first child:-**

64% used supplementary milk with first child  
 36% did not use supplementary milk with first child

**Mothers who used the supplementary milk with second child:-**

66% used supplementary milk with second child  
 34% did not use supplementary milk with second child

**Mothers who used the supplementary milk with third child:-**

69% used supplementary milk with third child  
 31% did not use supplementary milk with third child

**Mothers who used the supplementary milk with fourth child:-**

61% used supplementary milk with fourth child  
 39% did not use supplementary milk with fourth child

**Mothers who used the supplementary milk with the fifth child or next:-**

71% used supplementary milk with the fifth child or next  
 29% did not use supplementary milk with the fifth child or next

**After the hypothesis:-**

**Alternative hypothesis:-**

That there is a relationship between the Child Order and the use the supplementary milk

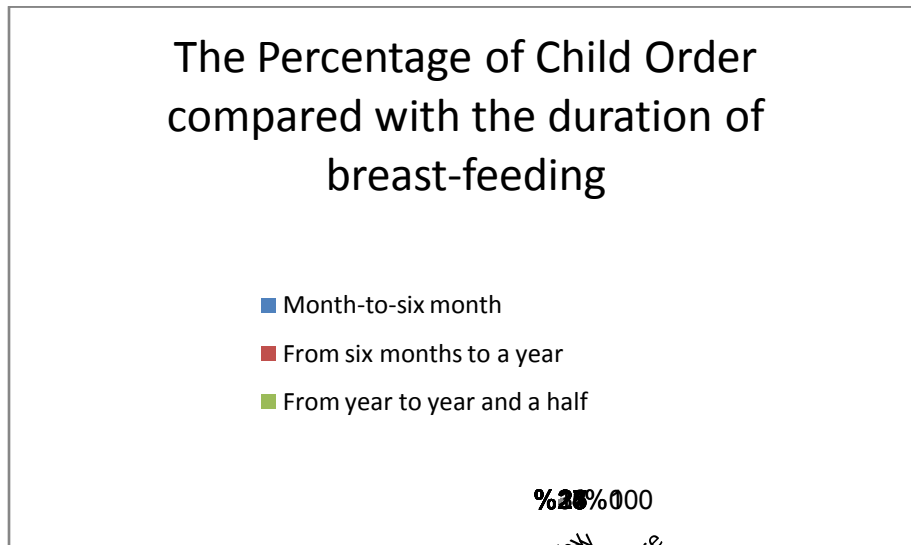
The value of Chi-Square Tests =1.851

Degree of freedom=4

And the p-value was = 0.76

**After statistical test Chi-Square for Independence:-**

with Confidence level 95% turned out there is no relation between Child Order and the people who are using supplemental milk These two variables are independent.



**Duration of breast-feeding for the first child:-**

37% of mothers were breastfeeding a child from one month to six months  
 21% of mothers were breastfeeding a child period of six months to one year  
 15% of mothers were breastfeeding a child period from year to year and a half  
 27% of mothers were breastfeeding a child duration from one year to two years

**Duration of breast-feeding for the second child:-**

35% of mothers were breastfeeding a child from one month to six months  
 16% of mothers were breastfeeding a child period of six months to one year  
 24% of mothers were breastfeeding a child period from year to year and a half

25% of mothers were breastfeeding a child duration from one year to two years

**Duration of breast-feeding for the third child:-**

27% of mothers were breastfeeding a child from one month to six months  
 21% of mothers were breastfeeding a child period of six months to one year  
 25% of mothers were breastfeeding a child period from year to year and a half  
 27% of mothers were breastfeeding a child duration from one year to two years

**Duration of breastfeeding for the fourth child:-**

24% of mothers were breastfeeding a child from one month to six months  
 21% of mothers were breastfeeding a child period of six months to one year  
 27% of mothers were breastfeeding a child period from year to year and a half  
 28% of mothers were breastfeeding a child duration from one year to two years

**Duration of breastfeeding for children fifth or next:-**

25% of mothers were breastfeeding a child from one month to six months  
 25% of mothers were breastfeeding a child period of six months to one year  
 23% of mothers were breastfeeding a child period from year to year and a half  
 27% of mothers were breastfeeding a child duration from one year to two years

**After the hypothesis:-**

**Alternative hypothesis:-**

That there is a relationship between the Child Order and the duration of breast-feeding

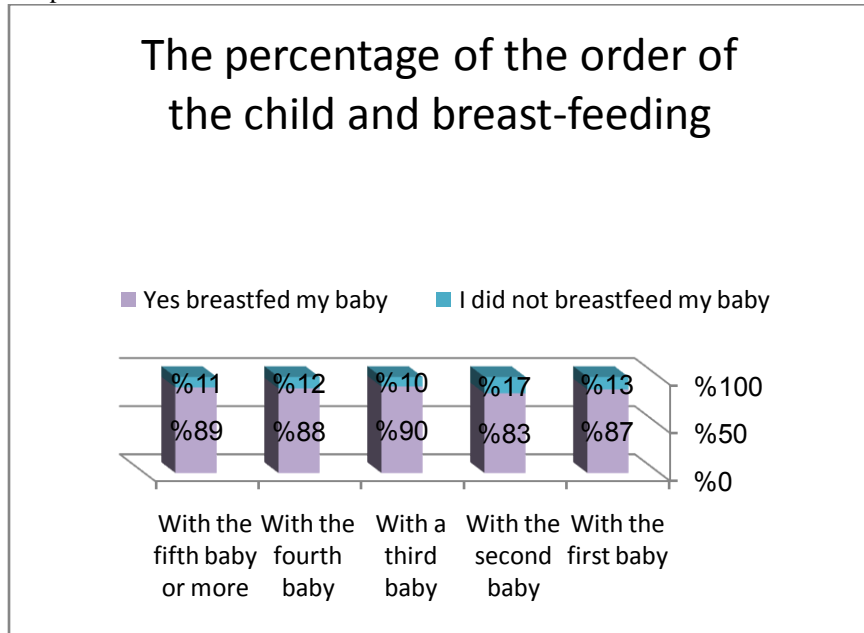
The value of Chi-Square Tests =8.170

Degree of freedom=12

And the p-value was = 0.77

**After statistical test Chi-Square for Independence:-**

with Confidence level 95% turned out there is no relation between Child Order and duration of breast-feeding These two variables are independent.



**The first child for mothers:-**

87% of mothers breastfed their first child

13% of mothers did not breastfeed their first child

**The second child for mothers:-**

83% of mothers breastfed her second child  
 17% of mothers did not breastfeed her second child

**The third child of the mother:-**

90% of mothers breastfed her third child  
 10% of mothers did not breastfeed her third child

**The fourth child of the mother:-**

88% of mothers breastfed her fourth child  
 12% of mothers did not breastfeed her fourth child

**The fifth child of the mother or the next:-**

89% of mothers breastfed her fifth or next  
 11% of mothers did not breastfeed her baby fifth or next

**After the hypothesis:-**

**Alternative hypothesis:-**

That there is a relationship between the Child Order and the breast-feeding

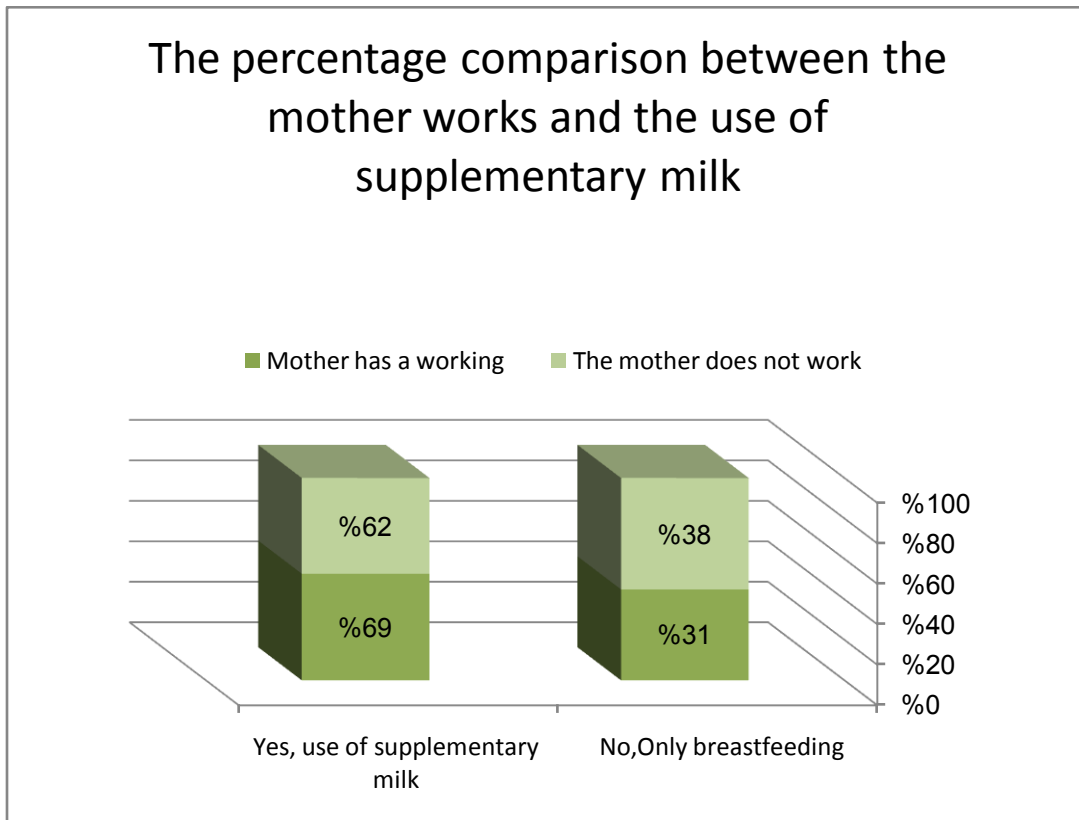
The value of Chi-Square Tests =1.657

Degree of freedom=4

And the p-value was = 0.80

**After statistical test Chi-Square for Independence:-**

with Confidence level 95% turned out there is no relation between Child Order and breast-feeding These two variables are independent.





**Mothers who work:-**

69% used complementary milk  
 31% did not use supplementary milk

**Mothers do not have work:-**

62% used complementary milk  
 38% did not use supplementary milk

**After the hypothesis:-**

**Alternative hypothesis:-**

That there is a relationship between mother workand used supplementary milk

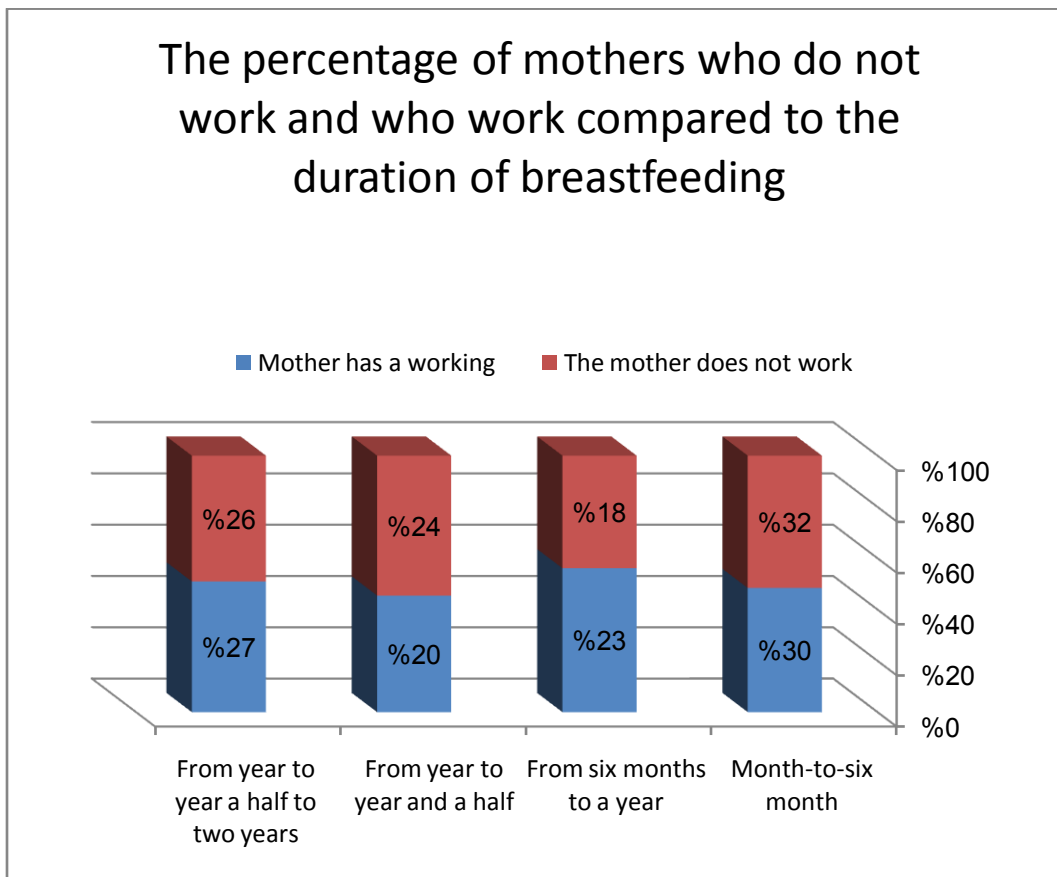
The value of Chi-Square Tests =1.941

Degree of freedom=1

And the p-value was = 0.164

**After statistical test Chi-Square for Independence:-**

with Confidence level 95% turned out there is no relation between mother workand use of supplementary milk  
 These two variables are independent.



**Mothers who work:-**

30% of mothers were breastfeeding a child from one month to six months  
 23% of mothers were breastfeeding a child period of six months to one year  
 20% of mothers were breastfeeding a child period from year to year and a half  
 27% of mothers were breastfeeding a child duration from one year to two years

**Mothers do not have work:-**

32% of mothers were breastfeeding a child from one month to six months

18% of mothers were breastfeeding a child period of six months to one year  
 24% of mothers were breastfeeding a child period from year to year and a half  
 26% of mothers were breastfeeding a child duration from one year to two years

After the hypothesis:-

**Alternative hypothesis:**

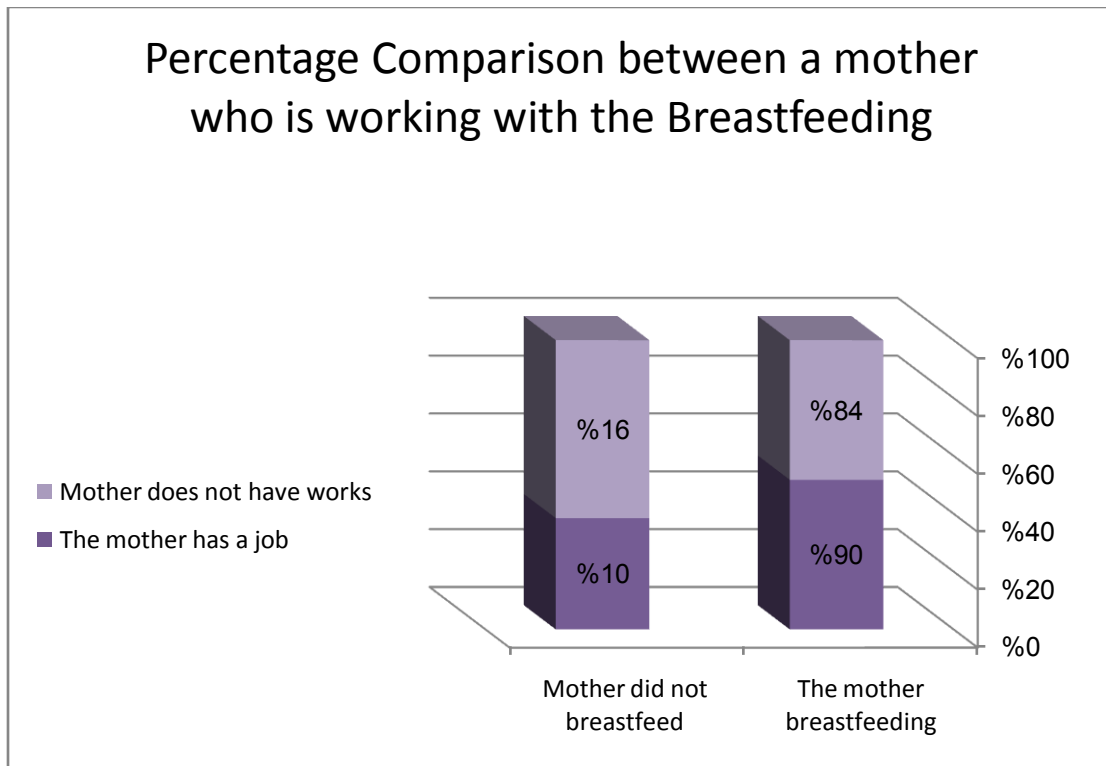
That there is a relationship between the mother work and the duration of breast-feeding

The value of Chi-Square Tests =2.230

Degree of freedom=3

And the p-value was = 0.53

After statistical test Chi-Square for Independence with Confidence level 95% turned out there is no relation between mother work and duration of breast-feeding These two variables are independent.



**Mothers who work:-**

90% of mothers breastfed their babies  
 10% of mothers they did Not breastfeed their babies

**Mothers do not have work:-**

84% of mothers breastfed their babies  
 16% of mothers they did Not breastfeed their babies

After the hypothesis:-

**Alternative hypothesis:-**

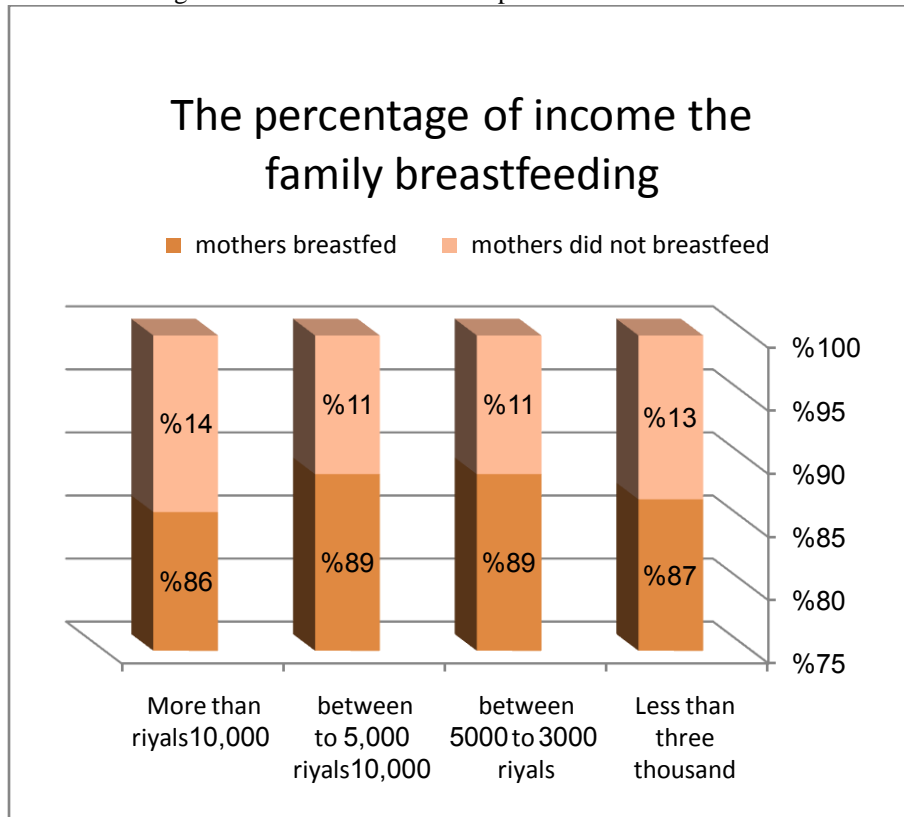
That there is a relationship between the mother work and the breast-feeding

The value of Chi-Square Tests =3.291

Degree of freedom=1

And the p-value was = 0.070

After statistical test Chi-Square for Independence with Confidence level 95% turned out there is no relation between mother work and breast-feeding These two variables are independent.



**The Families income, which is less than 3,000 riyals:-**

87% of mothers breastfed their babies  
 13% of mothers did not breastfeed their babies

**The Families income, which is between 3000 and 5,000 riyals:-**

89% of mothers breastfed their babies  
 11% of mothers did not breastfeed their babies

**The Families income, which is between 5000 and 10,000 riyals:-**

89% of mothers breastfed their babies  
 11% of mothers did not breastfeed their babies

**The Families income, which is more than 10000 riyals:-**

86% of mothers breastfed their babies  
 14% of mothers did not breastfeed their babies

**After the hypothesis:-**

**Alternative hypothesis:-**

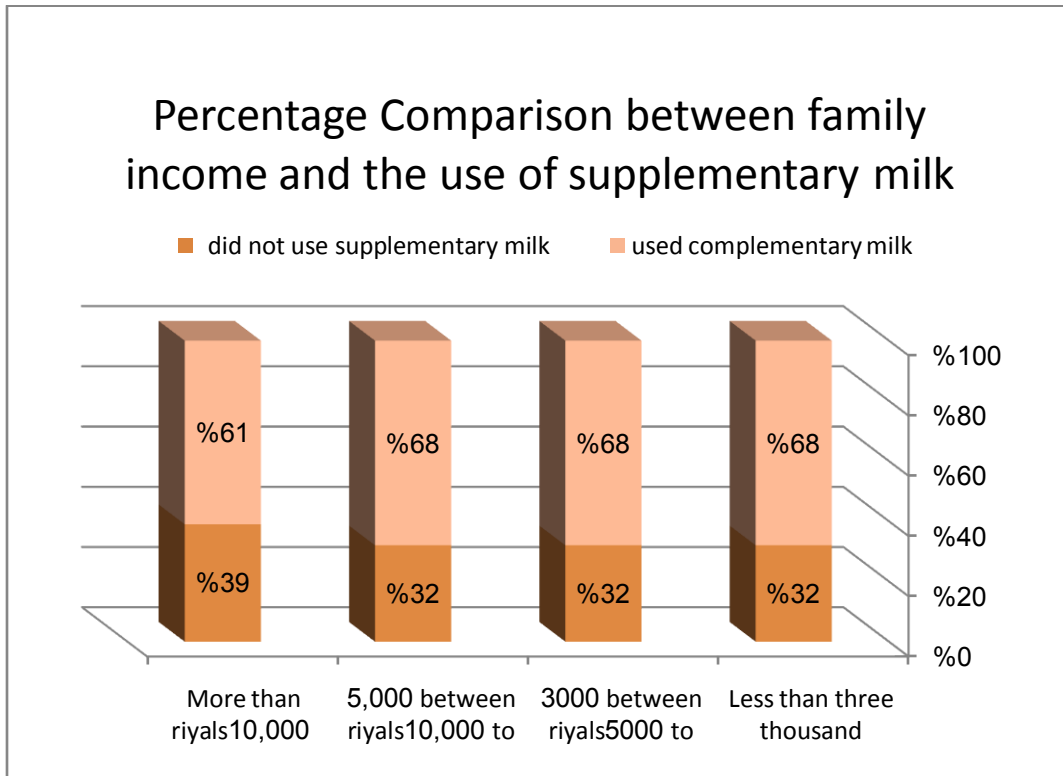
That there is a relationship between family income and the of breast-feeding

The value of Chi-Square Tests =1.039

Degree of freedom=3

And the p-value was = 0.79

After statistical test Chi-Square for Independence with Confidence level 95% turned out there is no relation between family income and breast-feeding These two variables are independent.



**The Familiesincome, which is less than 3,000 riyals:-**

68% used supplementary milk with their Babies  
 32% did not use supplementary milk with their Babies

**The Familiesincome, which is between 3000 and 5,000 riyals:-**

68% used supplementary milk with their Babies  
 32% did not use supplementary milk with their Babies

**The Familiesincome, which is between 5000 and 10,000 riyals:-**

68% used supplementary milk with their Babies  
 32% did not use supplementary milk with their Babies

**The Familiesincome, which is more than 10000 riyals:-**

61% used supplementary milk with their Babies  
 39% did not use supplementary milk with their Babies

**After the hypothesis:-**

**Alternative hypothesis:-**

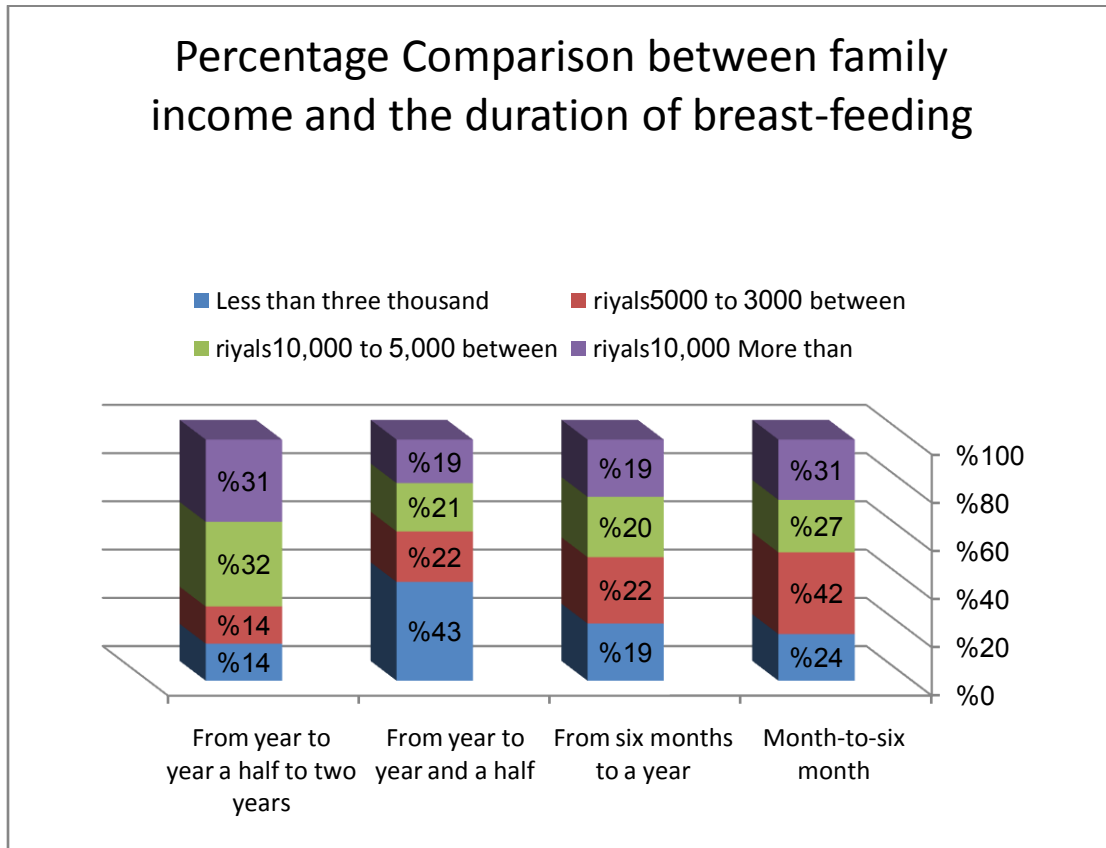
That there is a relationship between the family income and use of supplementary milk

The value of Chi-Square Tests = 1.631

Degree of freedom = 3

And the p-value was = 0.65

After statistical test Chi-Square for Independence with Confidence level 95% turned out there is no relation between family income and use of supplementary milk. These two variables are independent.



**The Familiesincome, which is less than 3,000 riyals:-**

- 24% of mothers were breastfeeding a child from one month to six months
- 19% of mothers were breastfeeding a child period of six months to one year
- 43% of mothers were breastfeeding a child period from year to year and a half
- 14% of mothers were breastfeeding a child duration from one year to two years

**The Familiesincome, which is between 3000 and 5,000 riyals:-**

- 42% of mothers were breastfeeding a child from one month to six months
- 22% of mothers were breastfeeding a child period of six months to one year
- 22% of mothers were breastfeeding a child period from year to year and a half
- 14% of mothers were breastfeeding a child duration from one year to two years

**The Familiesincome, which is between 5000 and 10,000 riyals:-**

- 27% of mothers were breastfeeding a child from one month to six months
- 20% of mothers were breastfeeding a child period of six months to one year
- 21% of mothers were breastfeeding a child period from year to year and a half
- 32% of mothers were breastfeeding a child duration from one year to two years

**The Familiesincome, which is more than 10000 riyals:-**

- 31% of mothers were breastfeeding a child from one month to six months
- 19% of mothers were breastfeeding a child period of six months to one year
- 19% of mothers were breastfeeding a child period from year to year and a half
- 31% of mothers were breastfeeding a child duration from one year to two years

**After the hypothesis:-**

**Alternative hypothesis:-**

That there is a relationship between family income and the duration of breast-feeding

The value of Chi-Square Tests =16.457  
 Degree of freedom=9  
 And the p-value was = 0.058

After statistical test Chi-Square for Independence with Confidence level 95% turned out there is no relation between family income and the duration of breast-feeding. These two variables are independent.

### Discussion:-

This research is the first one encountered about duration of breastfeeding in Almadinah, KSA. Our study goes with that of the ministry of health in KSA as our study revealed that average duration of breastfeeding is 8 months while in their study it is 7.5 {15}. In our study 31% of mothers breastfeed for 6 months while globally 38% {16}. There is good percentage of mothers who started breastfeeding in Almadinah as it is 87% in our study its higher than globally percentage 81% {17}. Breastfeeding rates in the United Kingdom were the lowest in the world in 2015 with only 0.5% of mothers still breastfeeding at a year, while in Germany 23% are doing so, 56% in Brazil and 99% in Senegal {13}. Higher percentage found in Australia 90% in their annual report. There is no association between the age and use of supplementary milk value of Chi-Square Tests =1.066, Degree of freedom=3, And the p-value was = 0.785. After statistical test Chi-Square for Independence with Confidence level 95% turned out there is no relation between age and the duration of breast-feeding. These two variables are independent. There is no relation between the work and breastfeeding duration and use of supplementary milk as whole mothers taking vacation.

### Conclusion:-

The percentage of breastfeeding in Almadinah is higher than expected, higher than global percent by 6%. The average duration of breastfeeding in Almadinah is higher than other city in KSA. There is no relation between age and breastfeeding and its duration and supplementary milk use. Also there is no relation between level of education and breastfeeding duration and use of supplementary milk. There is no relation between income and breastfeeding duration and use of supplementary milk. There is no relation between order of the child in the family and breastfeeding duration and use of supplementary milk.

### How we analyzed:-

The statistical program we use is Statistical Package for the Social Sciences (SPSS) version 22.

#### The statistical test.

Descriptive statistics (Frequencies)  
 Chi-Square Tests  
 Bi-serial  
 Spearman's rho

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