

The feeding pattern of infants in Diwaniya

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Abstract

Background: the value of breastfeeding is unquestionable for health and development of infant and in this country ,the frequency of breastfeeding is supposed to be high for cultural and religious causes.

Objectives: to determine the frequency of different feeding patterns of infants in Diwaniya ,to assess the reasons behind practicing bottle feeding and to document the protective effects of breastfeeding against the most common infections.

Materials and methods: during the periods of March 15th,2008 to April 20th,2009; 1000 mothers attending the maternity and children teaching hospital in Diwaniya were randomly chosen and interviewed .Information regarding the feeding pattern were collected.

Results: six hundred and forty seven mothers feed their infants from bottles(64.7%) compared to 353 infants (35.3%)who were breast fed.forty five percent of infants(237) below the age of six months were bottle fed .The frequency of hospitalization was three times more frequent among bottle fed infants. The most common causes of reliance upon bottle feeding were a thought of inadequate breast milk followed by busy mothers and then caesarean section delivery.

Conclusion: the frequency of bottle feeding in the study population was surprisingly high and the causes are unjustifiable.

Introduction

The need to promote and support breastfeeding is unquestionable for the health and development of infant(1).Breastfeeding provides all essential nutrients for the first 6 months of life(2).Breast milk contains the long chain polyunsaturated fatty acids which are especially important for the development of the brain and the nervous system(3).Breastfeeding is also associated with decrease risk of many early life diseases(4).Recent study show that breastfeeding increase sleep duration of new parents(5).Full term babies are not at heightened risk of low iron stores by the age of 6 months even if the mothers were iron deficient during pregnancy(6).Breastfeeding protect normal dentition(7),and the result of a new study reports that breastfeeding effectively reduce response to pain during minor invasive procedure in term neonates(8).

Babies who are breast fed for at least six months grow to be more intelligent than their peers who are breast fed for less time(9).Breastfeeding may keep babies free of common yeast infection(10) and breastfeeding significantly increase short-term attentiveness in 4-6 months olds(11).

Infants who were exclusively breast fed had a lower incidence of asthma & other allergic disease(12)and every extra-month of breast feeding further reduces the risk of (Hib) Hemophilus meningitis in children even longer after they are weaned(13).

Via several mechanisms,it seems that human milk can actively stimulate the immune system of the breast fed infant(14).Breastfeeding virtually eliminated crying and grimacing in infants undergoing collection of blood samples from their heels in a recent study(15).Breastfeeding may protect infants from cardiovascular disease later in life(16).Infants who are breastfeeding have a six fold reduction in death due to infectious disease in the first few months of life(17).Infant who breast fed are less likely to develop leukemia(18).

Breastfeeding prevent childhood obesity(19),and mothers who breast fed their baby enjoy a reduced risk of breast cancer(20).There will be increased levels of the hormone, oxytocin which lower blood pressure in mothers who breast fed their babies(21).

Low rates and early cessation of breast feeding have important adverse effects on health,social,and economic implications for women, children,the community and environment and result in greater expenditure on national health care provision(22).

When mothers are having trouble with their milk supply, supplements may be necessary:mothers expressed own milk,donor human milk or various artificial breast milk substitutes(23).The bottle and nipple have so dominated western thinking,that the use of other artificial methods of infant feeding has been largely overlooked(24).

In Iraq,breast feeding is almost universal & regarded as the normal way to feed infants and young children as most of the population are Muslims mothers followed the Koran,which instruct them to breast feed their babies for 2 years(25),beside the promotion of breast feeding and baby-friendly hospital initiative program began in Iraq since1993.

The aims of the study

1. to determine the frequency of feeding practices in a sample of mothers in AL-Diwaniya city.
2. to identify the causes of reliance on bottle feeding and concentrate on the factors influencing breastfeeding practices.
3. to determine whether breast feeding protects infant against certain infection or not.
4. to assess if there is any relationships between feeding pattern and economic status , educational level of the parents, residence and sex.

Materials and methods

In a prospective study, 1000 mothers were randomly selected during the periods of March 15,2008 to April 20,2009.These mothers were attending the maternity and children teaching hospital in Diwaniya either because their babies were ill or to vaccinate them or for consultation of gynecological and obstetrical out patients clinic.

These mothers were interviewed and information were collected concerning the following : age of the mother,age of the child(less than 24 months), sex,feeding type(and the cause of practicing bottle feeding if they do so),residence,economic status of the family,and educational level of the mother.

Feeding methods studied were either the use of breast milk as a method of feeding or bottle feeding by giving various artificial breastmilk substitutes (baby formula or fresh cow milk) from the bottle and nipple.If the mothers had any factors for contraindication

of breastfeeding or her child had chronic illness , cleft palate or any disease that make breastfeeding contraindicated were excluded from the study.

Results

During the study periods,out of 1000 interviewed mothers 647(64.7%) were using bottle feeding for their children whom aged ranged from 1 day-24 months comparing with those using breastfeeding only 353(35.3%) .

More than 50% (522 child)of our sample were infants less than 6 months old age,and about 45% (237 child) of them were on bottle feeding where as they should be on full exclusive breastfeeding .the feeding pattern according to the age group was shown in figure 1.

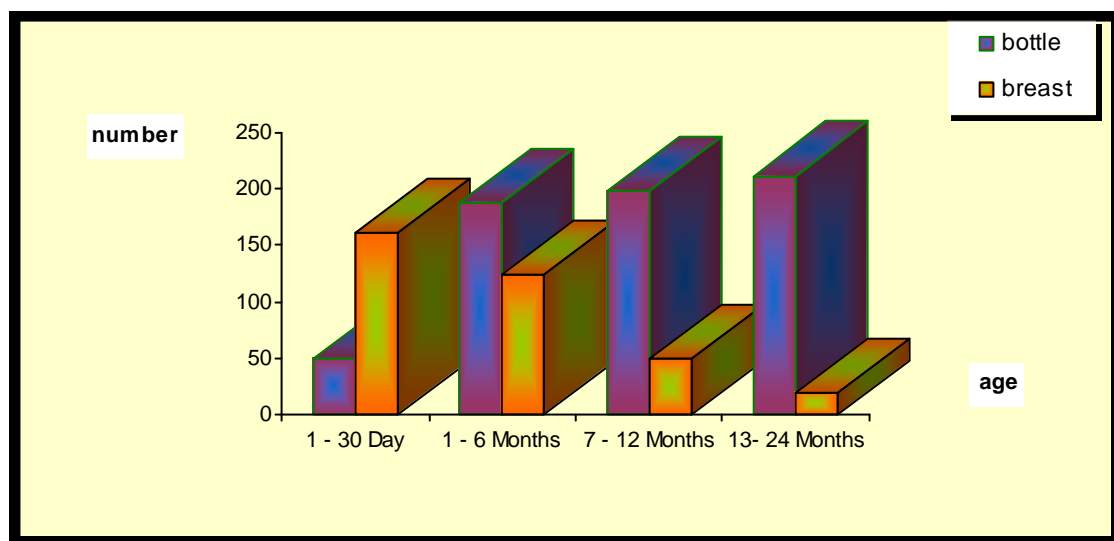


Figure 1

The feeding pattern according to the age groups

Four hunderds and one case were males (40.1%) versus 599 (59.9%) were females. And among the males,there was 146 (36.4%) infants on breastfeeding in comparison to 255 (63.6%) infants were on bottle feeding,and from the females infants there were 207 (34.5%) infants on breastfeeding in comparison to 392 (65.5%) infants were on bottle feeding as summerized on figure 2A and figure 2B.

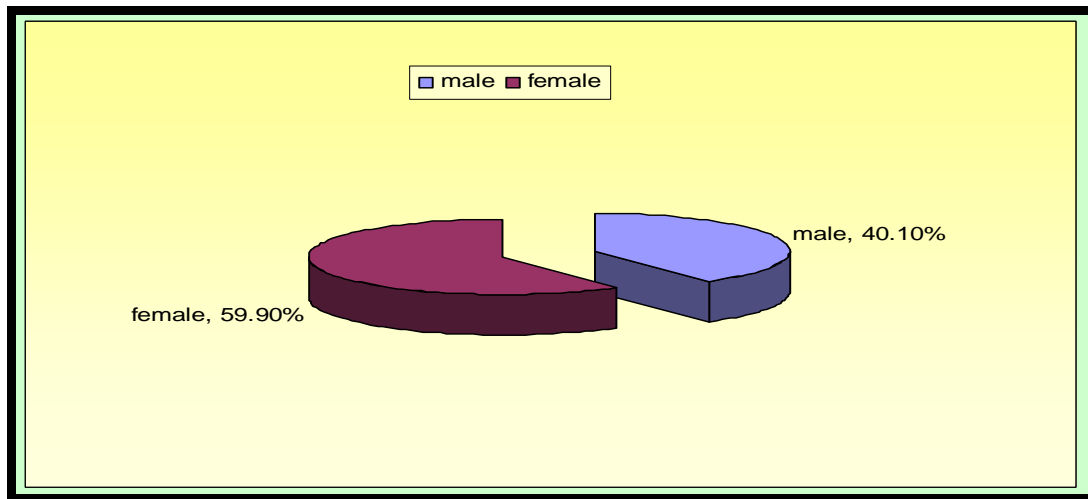


Figure 2A
Sex distribution of the study group

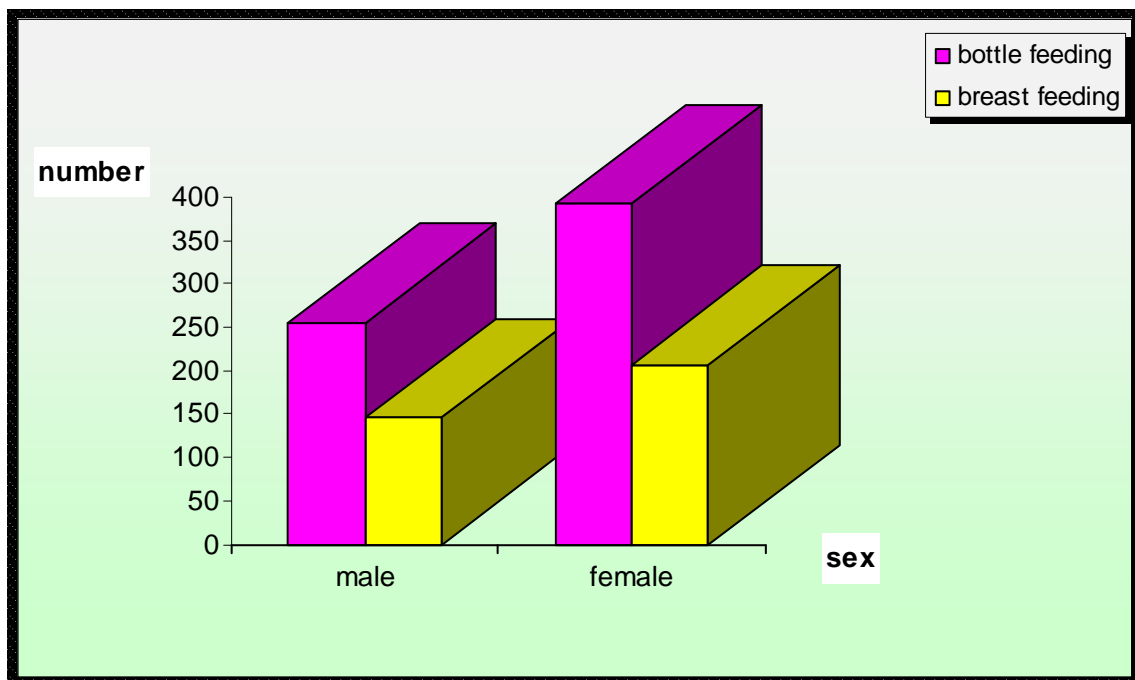


Figure2B
The distribution of feeding pattern according to the sex

Most infant and children were from rural area 589 (58.9%) versus 411 (41.1%) from urban areas. The relationship between feeding pattern and residence were shown in figure (3). Most infants from rural area 417 (70.8%) were on bottle feeding in comparison to 172 (29.2%) on breastfeeding while in urban area 230 (55.9%) were on bottle feeding in comparison to 181 (44.1%) on breast feeding.

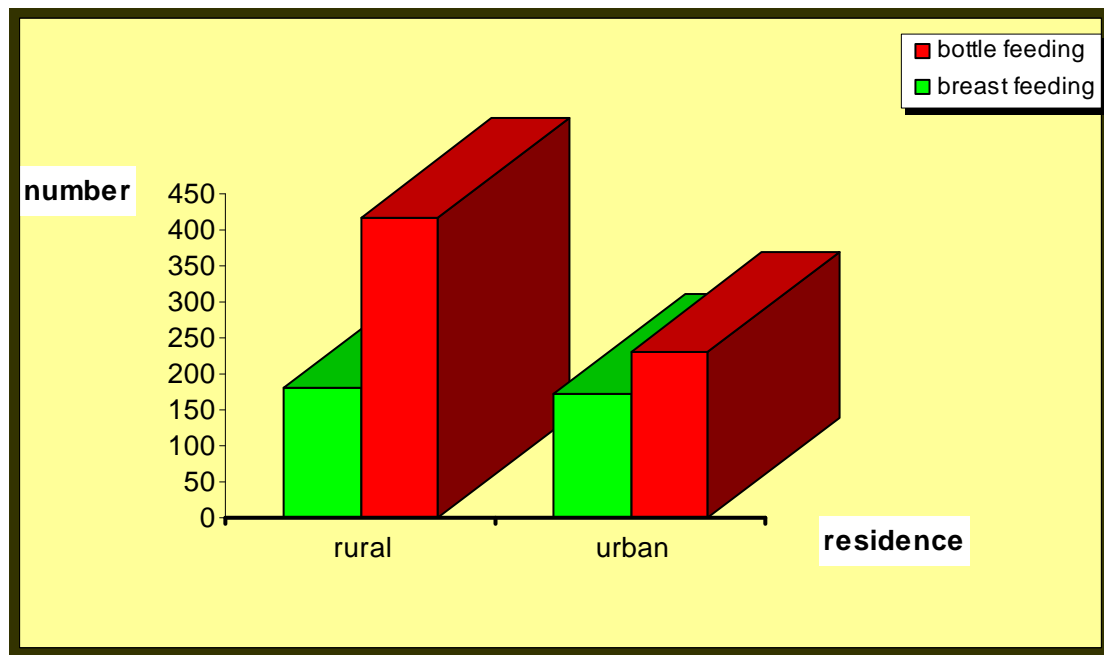


Figure3
The relationship between feeding pattern and residence

One hundred and seventy nine mothers (18%) were illiterate, 285 (28.5%) had primary school education, 229 (22.9%) had secondary school education, 170 (17%) had institute graduation and only 137 (13.7%) were graduated from college, the distribution of feeding pattern according to the mothers educational level is summerized in figure 4.

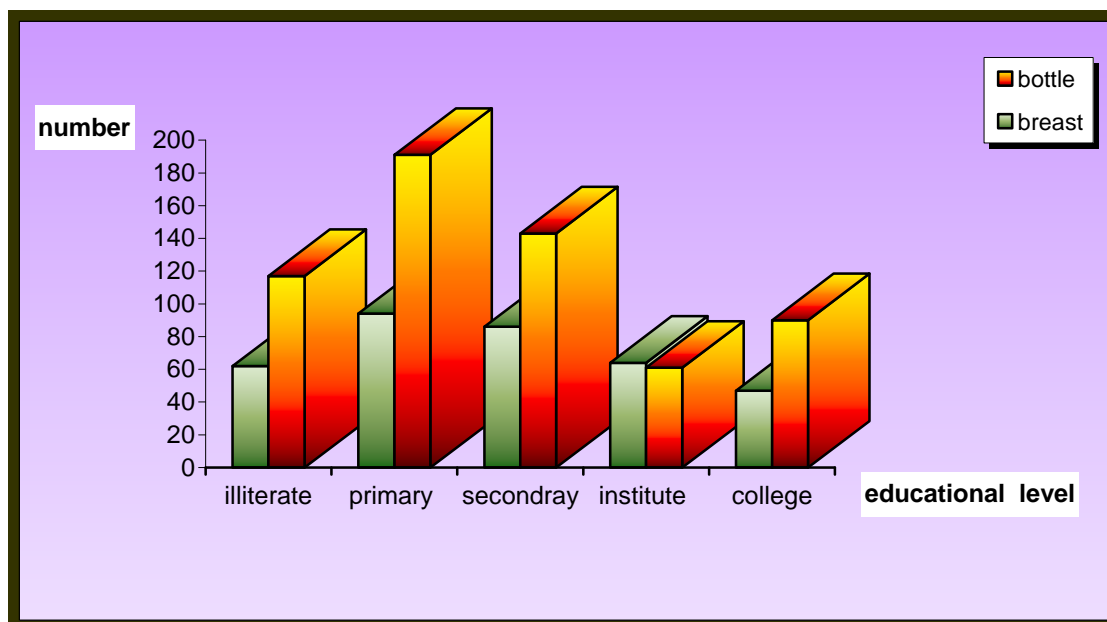


Figure 4
Distribution of feeding pattern according to the mothers educational level

Most of the families were from the average economic status 490 (49%), 190 (19%) from a good economic status, 210 (21%) were poor, and 110 (11%) were from a very good economic status, as shown on figure 5A, and the relationship between economic status of the parents & the feeding pattern was summerized in figure 5B.

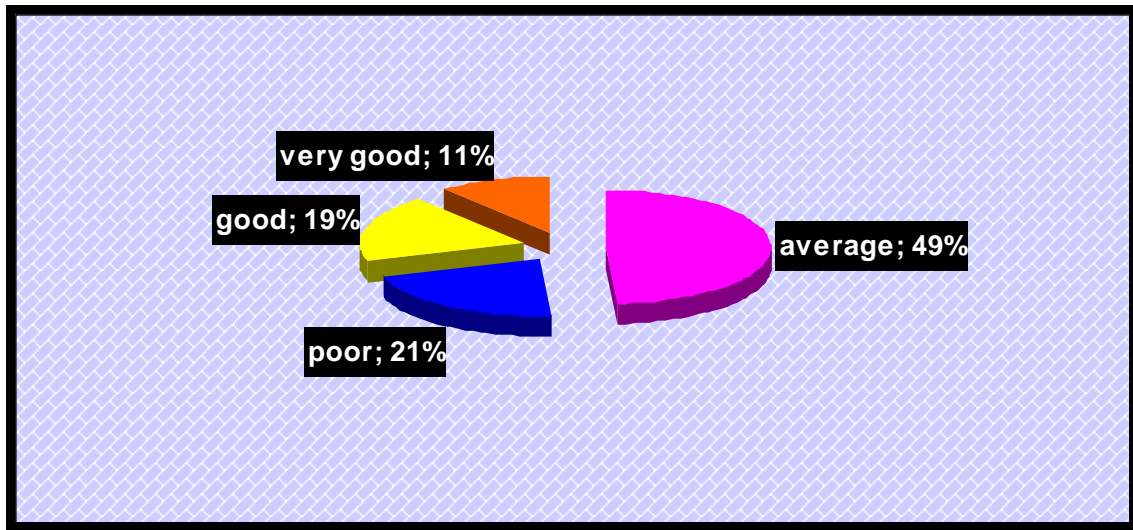


Figure 5A
The economic status of the parents

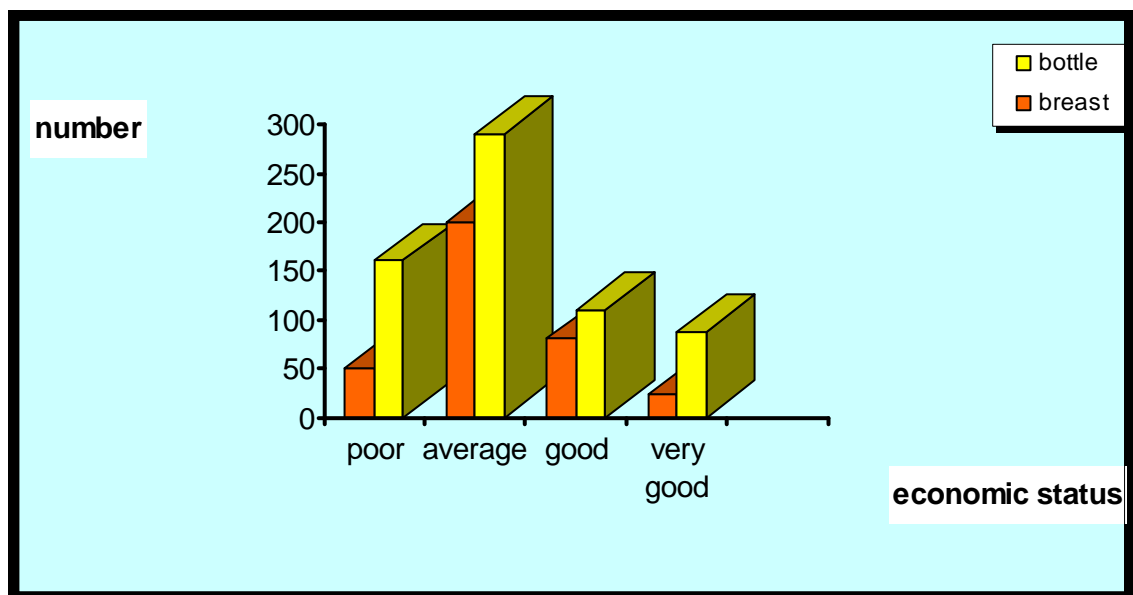


Figure 5B
The relationship between the feeding pattern & economic status of the parents

Infants who were bottle fed were three times more likely than those being breast fed to be admitted to the hospital for chest infection or diarrhoea. Infants who are bottle fed have longer duration of hospitalization than those who are breast fed for diarrhoea and pneumonia, as shown in figure 6A and 6B.

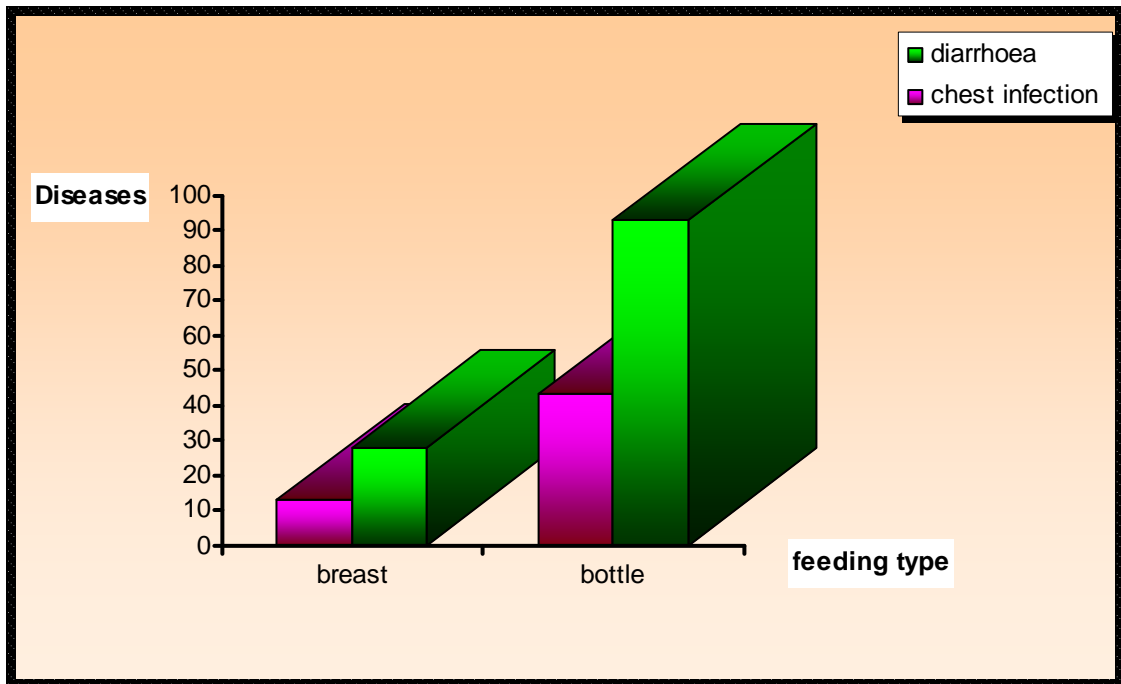


Figure 6A
The frequency of significant disease according to the feeding pattern

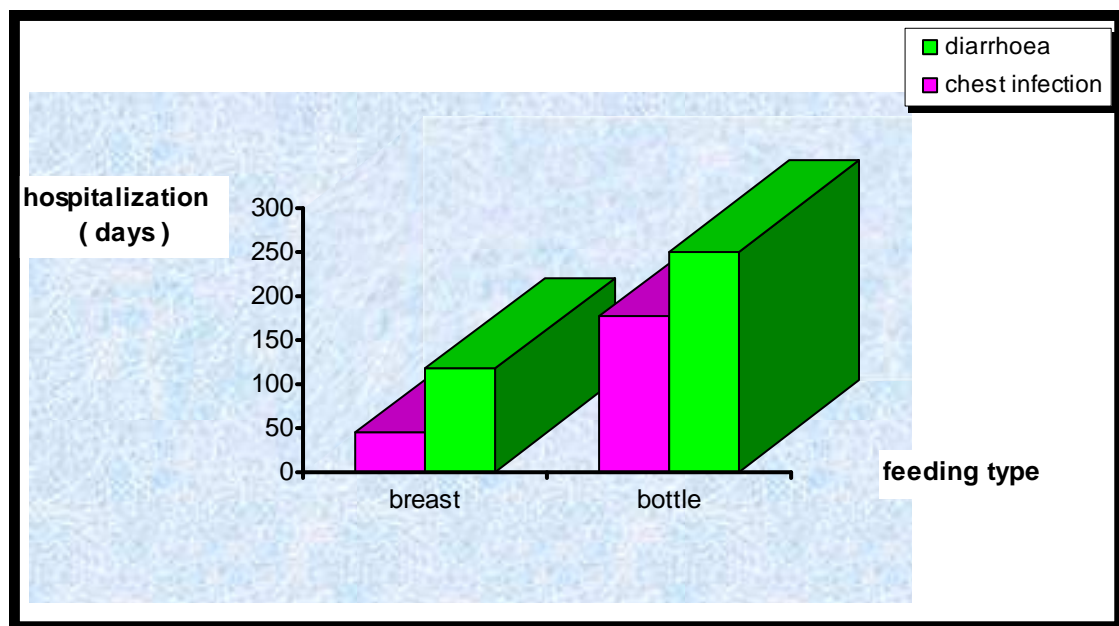


Figure 6B
The frequency of significant hospitalization according to the feeding pattern

Concerning for the causes of reliance on bottle feeding, show that 177 (27.3%) of mothers rely on bottle feeding because they thought that their breast milk is inadequate followed by 149 (23%) due to busy mothers then 106 (16.3%) after caesarean section delivery and 60 (9.2%) due to physician advice and 43 (6.3%) due to father opinion & 112 (18%) due to other reasons, as shown in figure 7.

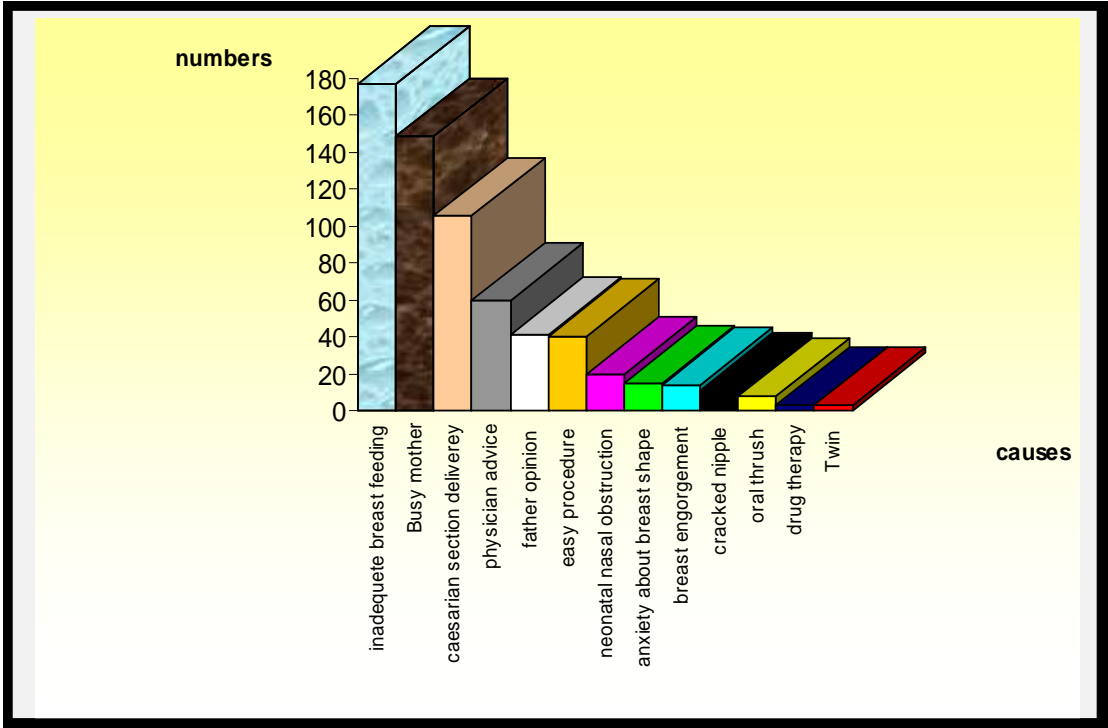


Figure 7
Causes of reliance on bottle feeding

The association of the reasons of practicing bottle feeding and the age group categories was highly statistically significant,as shown on table 1.

Table 1
Distribution the causes of reliance on bottle feeding according to the age

Age groups variable	1-30 days		1- 6 months		7-12 months		13-24months		Total	X ²	P-value	Significance
	NO	%	NO	%	NO	%	NO	%				
A thought of inadequate breast feeding	20	40.81	45	23.93	48	24.24	63	30.1	177	7.1	0.1>P>0.05	significant
Busy mother	4	8.163	46	24.46	44	22.22	55	25.9	149	7.4	0.1>P>0.05	significant
Caesarian section delivery	5	10.20	33	17.55	41	20.70	27	12.7	106	26.8	P<0.001	significant
Physician advice			10	5.319	20	10.10	30	14.150	60	8.5	0.02<P<0.01	significant
Father opinion			1	0.531	22	11.11	20	9.43	43	18.7	P<0.001	significant
Short duration of feeding and easy procedure	1	2.04	10	5.319	14	7.070	16	7.54	41	2.57	0.5	not significant
Neonatal nasal obstruction	12	24.48	8	4.255					20	20.58	P<0.001	significant
Anxiety about breast shape			8	4.255	7	3.535			15	0.135	P<0.5	not significant
Breast engorgement	3	6.122	8	4.255					11	0.306	P<0.5	not significant
Cracked nipples	4	8.163	6	3.191	1	0.505			11	11.38	0.001<P<0.01	significant
Oral thrush			8	4.255					8	7.3	0.1>P>0.05	significant
Drug therapy			2	1.065	1	0.505			3	2.6	0.5	not significant
Twins			3	1.595					3	19.8	P<0.001	significant
Total	49	100%	188	100%	198	100%	212	100%	647			

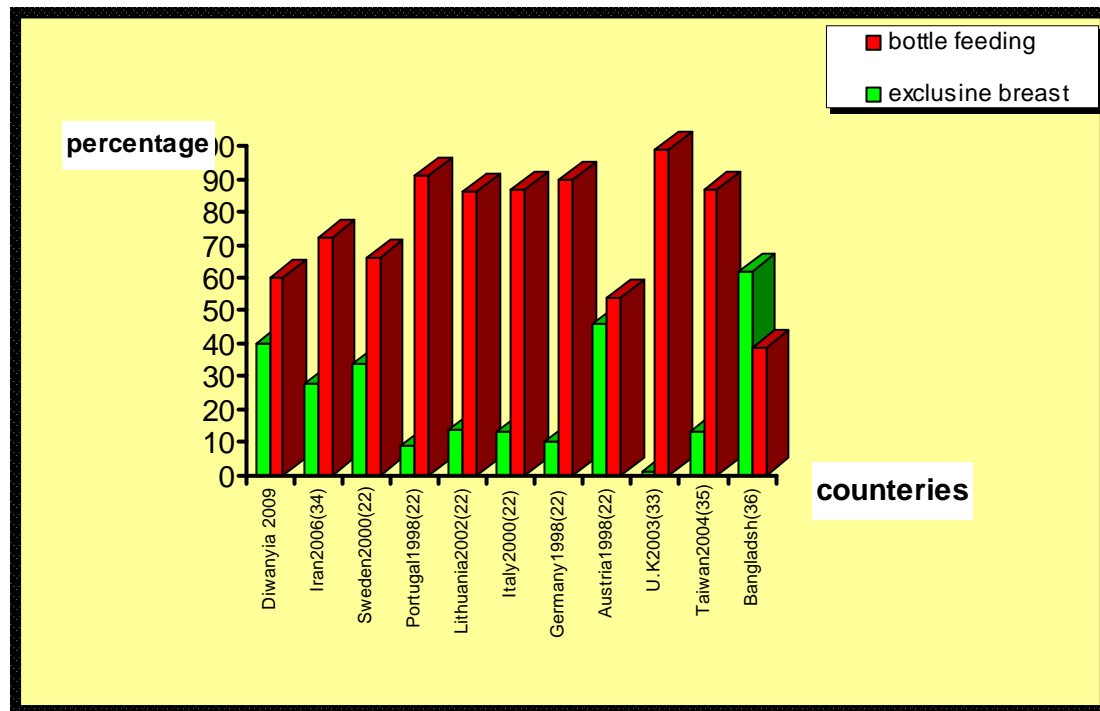


Figure 8
The frequency of exclusive breastfeeding & bottle feeding at the age of six months in comparison to other countries

Discussion

Breastfeeding has innumerable benefits that not only reflected on infants & mothers but on society as a whole(26). International health agencies such as World Health Organization(WHO), United Nations Children's Fund (UNICEF) and American Academy of Pediatrics(AAP) recommended exclusive breastfeeding during the first 6 months of life(27). The promotion and support of breastfeeding is a global priority(28). Mothers who breastfed longer have a lower risk of developing type 2 diabetes(29). Breastfeeding has effects on maternal body composition which lead to weight loss due to high energy cost so it is a mean of overweight and obesity prevention (30).

Our study shows that the breastfeeding was lower than bottle feeding which is similar to recent study done in AL-Kuwait(31), and it is similar to another study done in Saudi Arabia(32). The figures for exclusive breastfeeding in UK (as reported by WHO 2003) for the period of 2002-2005 were 45% of women breastfeeding exclusively at one week, 21% at six weeks, 7% at four months, & less than 1% at six months(33). Our result is comparable to study that done in Iran(34).

The frequency of feeding pattern at the age of six months in our study in comparison to that in other countries is summarized in the figure 8(34,22,35,36).

There was no statistical significance between the type of feeding and sex distribution of children in our study (in which the $X^2=1.7$ and $P>0.1$) which is similar to recent study done in Greece(37).

A vast scientific literature demonstrates substantial health, social, and economic benefits associated with appropriate breast feeding, including lower infant mortality and morbidity from diarrhoea & other infectious diseases(38), and this was demonstrated in our study in which infants who are breastfeeding are at lower risk of exposure to chest

infection (pneumonia) and to diarrhoea. The duration of hospitalization was shorter comparison with infants who are bottle fed and this result was similar to a study done in Brazil(39), which show infants who were not being breast fed were 17 times more likely than those being breast fed without formula milk to be admitted to hospital for pneumonia.

These results were similar to study done in Bangladesh, India, Peru and Ghana(40) that show those children on bottle feeding are more likely to develop pneumonia & diarrhea with prolonged period of hospitalization.

Some studies suggest that predominantly breastfed infants who have had tastes of water and honey have had damage to mucosal lining of gastrointestinal tract leaving the infant more susceptible to infection(41).

The most common maternal reason for increasing bottle feeding was a thought of inadequate breast milk 177(27.3%) cases, these women think that breast milk alone is not enough or it is inadequate and this figure is similar to most of studies done world wide(42),(43).

The second important cause of increasing frequency of bottle feeding was busy mother 149(23%) cases either due to her employment or she was a student or due to other causes, these results were similar to a study done in Taiwan (35),(44). In our study particularly in rural area, the mothers are working in the farm.

The third important cause for reliance on bottle feeding was caesarian section delivery 106(16.3%) because most of these mothers believe that it is very difficult for them to nurse their baby, which is similar to Jeddah study(45) but is different from results obtained in Riyadh (46). Some of the mothers who used bottle feeding do so according to doctor's advice 60(9.2%), these orders usually come from non specialist doctor who had inadequate knowledge about breastfeeding.

Other important and strange cause for women to rely on bottle feeding in our study was the father's opinion 41(6.3%).

Other causes that lead to stop breastfeeding in our study were multiple and include: 40(6.1%) cases due to short duration of bottle feeding and easy procedure, 20(3%) are cases due to neonatal nasal obstruction, 15(2.3%) cases are due to anxiety about breast shape, 14(2.1%) cases due to breast engorgement, 11(1.7%) cases are due to cracked nipple which is similar to study done in Glasgow(47,48), 8(1.3%) cases are due to oral thrush (10),(49) and three cases(0.4%) due to drugs used by nursing mothers mother which lead to shifting to bottle feeding also reported in our study & the most common drug used was the contraceptive which is similar to Jeddah study(45).

The frequency of breast feeding in both rural & urban area was less than bottle feeding and statistically was significant (in which the $X^2=23.33$ and $P<0.001$), but the bottle feeding is more in rural than urban area and this may be explained as the mothers in rural areas most of the time are working and leave their babies in the home, this finding is similar to study done in Bangladesh(50). The proportion of individuals from rural area 589(58.9%) versus 411(41.1%) from urban areas is due to study design and the place where it was done.

There was no significant effect from the educational and economic status of the parents on the feeding type.

Recomendation

1. Breast feeding after caesarian section should be strongly encouraged in the obstetrical wards by the obstettrain and nursing staff.
2. Extensive educational programs using a variety of the available media (TV, Radio, Newspaper, etc) and in primary health centres, hospitals, schools and universities to adress the undoubtfull value of breast feeding.
3. The Ministry of Health should continously encourage the program of breast feeding in this country, regarding training courses and workshops and symposiums which should be held to increase the awareness of general practioners and health workers about breast feeding.
4. the Ministry of Commerce need to be involved to limit the high number of milk formula trades in Iraq.
5. support for women needs considerable improvement in regards to protection, promotion and support of breast feeding which whould probably increase the national figures substantially.

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