Breast feeding and co-morbidities on mothers and infants in two main hospitals of Diyala Province, Baquba, Iraq

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Abstract

Background: Breast milk was the full required physiological food of human infants. Optimally initiation of immediate breastfeeding exclusively after birth until 6 months of infant age, and keeping infant on breastfeeding with age dependent and appropriately introducing complementary foods to the age of to two or longer.

Objective: To investigate the feeding cost and relationship between the feeding types in the first year of infant life, and infant morbidity.

Patients and Methods: It was a descriptive cross sectional study done in Al-Batool teaching hospital and Al-Zahra hospital of Diyala province during the period from October 2014 to March 2015, 100 cases of infant at one year of age have be included in the study regardless of medical reason of hospital admission, divided into three groups of infants breast feeding exclusively, bottle feeding exclusively and mixed type of both bottle and breast feeding. This study is considered as to investigate the relationship between feeding type in the first year of infant life, and infant and maternal co-morbidities.

Results: One hundred cases were included in the study, 51 males infant and 49 females included in the sample, according to feeding type the study revealed that31 breast feeding, 34 bottle feeding, 35 mixed feeding. The current study demonstrate that 69 delivered by section among them 14 breast feeding, 32 bottle feeding and 22 mixed feeding while 31 delivered by normal vaginal delivery including 15 breast feeding, 9 bottle feeding and 7 mixed feeding only. Regarding post partum maternal weight loss we found 81 had significant weight loss among them 30 breast feeding, 15 bottle feeding and 16 mixed feeding. According to the study of fetal diseases demonstrated that 68 infant developed diarrhea among them 14 breast feeding,29 bottle feeding and 25 mixed feeding , 47 had urinary tract infection 9 of them breast feeding 20 had bottle feeding, 32 infant had constipation five of them breast feeding , 14 bottle feeding and 13 mixed feeding.

Conclusion: The duration of breastfeeding showed a decline with decreasing maternal age, multiparous with low level of education living in rural communities with low socio-economic class were more likely to breastfeed, indicating that economic and experience status highly influencing feeding choice to review our studies on breastfeeding.

Key words: Brest feeding, Bottle feeding, Diyala province, Iraq.

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Introduction

Breast milk was the full required physiological food of human infant's physiology [1].

Optimally breastfeeding means the initiation immediately after birth [2], and exclusive breastfeeding to the age of 6 months, while breastfeeding continued with introduction of complementary foods according the age till two years or longer [3].

Predominant breastfeeding (PBF) was different from exclusive breastfeeding, in PBF breast milk constitutes infants' primary nutritional source, but as well of that infants were also fed with liquids such as juice, water, tea, or ritual fluids [4].

Feeding exclusively with breastfeeding is the globally well-known as a public health requirement for children survival [3, 5, 6]. So for optimal health outcomes breastfeeding is physiologically optimal normally needed [7]. With early initiation of exclusive breastfeeding in the first 6 months for normal infant and child survival, growth, and development and maternal health [8, 9]. Human milk provides the growing infants with all the nutrient requirements for infants in the first 6 months of age, and about half of their requirement from ages of 6 – 12 months, and nearly one third throughout the child's second year of life [10]. Human milk of adequately nourished mothers supply nearly all of the water vitamins, fats, proteins, digestive enzymes, minerals, carbohydrates and hormones needed for the developing child [11].Both for the infants and his feeding mother a biologically based interaction between the two individuals and achieving a healthy normal infant physiological growth, lactation/breastfeeding also is found to be associated with less risk for maternal breast and ovarian cancers [12]. Despite that there is existing data addressing the costs and savings for exclusive breastfeeding, an estimation showing that breastfeeding costs approximately $600 annually for the mother, while commercial formula alone costing approximately $1500 annually [13]. Economic benefits include saving the cost from lost workdays, illness avoidance and purchasing infant formula [14]. It was reported that about 11.6% of child deaths in 2011 attributable to sub-optimal breastfeeding [15].

Variable factors were reported affecting exclusive breastfeeding practice, such as maternal related factors (maternal age, health condition, education, occupation), infant factors (gender, birth order, illness), and practices related to culture (initiation of breastfeeding, timing of introduction of complementary feeds) [16, 17]. These characteristics effect vary according to cultural context and related socioeconomic conditions.

Patients and Methods

It was a descriptive cross sectional study done in Al-Betool teaching hospital Baquba Iraq and Al-Zahra hospital in Diyala province in the period from October 2012 to March 2013 , 100 infant at one year of age have be included in the study regardless of medical reason of hospital visit ,they were divided into three groups of infant at one year have be included in study exclusively breast feeding, bottle feeding exclusively and mixed bottle and breast feeding. This study is considered as to investigate the relationship between type of feeding in the first year of infant life, and maternal and infant morbidities.

Relationship between selected mother's and infant's sociodemographic variables and the mother's choice of infant's feeding in the

first year of infant like mother s age at baby s birth, mother s level of education, mode of delivery, parity, and infant s gender. This study define exclusive breast feeding as those infant for whom only breast milk from the mother were given (either directly from the breast or expressed) with no other liquids or solids except of drops or syrups consisting of vitamins, mineral supplements, or medicines.

Statistical Analysis

Statistical of the study was done according to the type of the study using x-ail program for collection and analysis of the data looking for rate and percentage of each morbidity correlated to the feeding type.

Results

One hundred cases were included in the study, 51(51%) males infant and 49 (49%) females included in the sample, 31 (31%) breast feeding, 34(34%) bottle feeding, 35(35%) mixed feeding. Mean age of mothers with breast feeding was 35years while mean age of bottle feeding mothers was 23 years and mixed type feeding 28 years. Regarding parity it is noticed that 82 mothers were multipara including 35(42.7%), of them breast feeding,20(24%) bottle feeding and 27 (33%)mixed feeding, 18 mothers were primi mothers 3 breast feeding 9 bottle feeding and 6 mixed feeding showing a significant correlation between parity and type of feeding. Sixty nine infants (69%) delivered by section among them 14 (20%) breast feeding, 32(46%) bottle feeding and 22(32%) mixed feeding while 31 (31%) delivered by normal vaginal delivery including 15 (48%) breast feeding, 9 (29%) bottle feeding and 7922%) mixed feeding only, women lives in rural area 53(53%) tended to provide EBF more than urban area 47(47%). Regarding post partum maternal weight loss we found 81 had a considerable weight loss among them 30 breast feeding, 15 bottle feeding and 16 mixed feeding.

The study demonstrated that 68 infant developed diarrhea among them 14 breast feeding, 29 bottle feeding and 25 mixed feeding, 47 had urinary tract infection 9 of them breast feeding 20 had bottle feeding, 32 infant had constipation five of them breast feeding, 14 bottle feeding and 13 mixed feeding, 37 hospitalized infants 7 of them breast feeding, 17 bottle feeding and 13 mixed type of feeding.

Table (1): Maternal variables and co-morbidities.

Criteria	Breast feeding No. &%	Bottle feeding No. &%	Mixed feeding No. & %	Total out of 100
Mean maternal age (ys.)	35	23	28	28.3 ys.
Maternal weight loss	30(37%)	15(18%)	16(19%)	81%
Multiparous mothers	35(42%)	20(24%)	27((33%)	82%
Primiparous mothers	3(17%)	9(50%)	6(33%)	18%
Normal vaginal delivery	15(47%)	9(28%)	8(25%)	32%
Caesarian section delivery	14(20%)	32(47%)	22(32%)	68%

Table (2): Comparative Infants variables and co-morbidities.

Criteria	Breast feeding(31) No. &%	Bottle feeding (34) No. &%	Mixed feeding (35) No. & %	Total out of 100
Diarrhea	14(22%)	29(42%)	25(36%)	68%
Urinary tract infection	9(19%)	20(43%)	18(38%)	47%
Constipation	5(16%)	14(44%)	13(40%)	32%
Respiratory disease	16(20%)	34(41%)	32(39%)	82%
Male feeding at 6 months of age	20(41%)	17(33%)	15(30)	51%
Female feeding at 6 months of age	19(40%)	16(33%)	13(27%)	49%
Type of feeding at 3 months of age	52%	22%	26%	100%
Type of feeding at 6 months of age	39%	33%	28%	100%
Type of feeding at 9 months of age	27%	43%	30%	100%
Type of feeding at 12 months	18%	55%	27%	100%
Hospitalization	7(19%)	17(46%)	13(35%)	37%

Table (3): General common infant variable data of the study.

Criteria	No.	(%)
Breast feeding	31	31%
Bottle feeding	34	34%
Mixed feeding	35	35%
Diarrhea	68	68%
Hospitalization	37	37%
Respiratory disease	82	82%
Introducing solid food at 6 months of age	78	78%
Urinary tract infection	47	47%
Constipation	32	32%

Table (4): Common maternal variable data.

Criteria	No.	(%)
Maternal age >30y	37	37%
Maternal age <30y	63	63%
Not educated mothers	5	5%
Primary education	34	34%
Secondary education	46	46%
High education	15	15%
Normal Vaginal delivery	69	69%
Caesarian Section	31	31%
Post partum weight loss	6 1	61%
Multiparous mothers	82	82%
Primiparous mothers	18	18%
Urban	47	47%
Rural	53	53%

Discussion

No sufficient data available on breastfeeding in Diyala province of Iraq to monitor the progress and developing promotion programs and a further review of the data that are available to provide a summary of breastfeeding patterns, practices, rates and duration.

The office of Eastern Mediterranean Region (EMRO) of world health organization (WHO) reported significantly high rates (>60%) of early breastfeeding initiation with 60% of mothers continuing to breastfeed to 12 months in the Middle East and North Africa (MENA) countries [18] Dop and Benbouzid [19] was reported that a mean rate of 'exclusive breastfeeding' at four months in the Middle East region is 24%, including Lebanon (7%), Yemen (15%), Pakistan (16%), Jordan (32%) and Iran (48%).While a low rates have been observed in countries such as Algeria (10.4% at four months and 6.9% at six months), Sudan (21.4% at four months and 15.6% at six months) and Egypt (30.3% at six months) [20].In this study in our region exclusive breast feeding till the age of 6 months of age was 39%, bottle feeding exclusively 33% and combined feeding 28%.

Diarrheal diseases increase as the amount of breast milk received decreases when compared between exclusively breastfed infants and infants who were exclusively formula-fed had an 80% increase in their risk of developing diarrhea[21].In this study 14(22%) of breast feeding infant developed diarrhea compared to 29(42%) of bottle feeding and 25(36%) of those with mixed breast and bottle feeding (table 2). Breastfed infants have less risk of developing a UTI compared to formula-fed infants[22]. This is clearly supporting the study finding of developing UTI in 9(19%) of breast feeding infants compared to 20(43%) of bottle feeding infants and 18(38%) of mixed feeding infants(table2) .In Vietnam, the 'exclusive breastfeeding' rate at four months was 43.5% [25] ,and in China ranged from 36% to77% [23,24]. This study area breast feeding rate at 3 months of age was 52% at 6 months 39% at 9 months 27% and at 1 year of age 18% only. A survey in rural parts of Shihezi found that in 1997 'exclusive breastfeeding' rates in the first week were 41% in Han, 53% in Uygur, 62% in Kazakh and 33% in Hui ethnic group.[26] . The average age for the introduction of solid foods were (4.7months) in the Han and 5.7 months in minority groups in Karamay, Xinjiang [27]. In our area of study 78% of infants received solid food at 6months of age.

Regarding parity and age of the moth the study shows that the higher the parity (>4 children) and age the higher the tendency to breastfeed exclusively; and the lower the parity (1-2), the higher the tendency to feed by using formula-milk exclusively which reflect the higher awareness and experience of the mother about her infant health and growth .

The study findings are consistent with Khassawneh et al in Jordan which found that mothers with lower number of children 3 were less likely to exclusively breastfed [28] and Berger-Achituv study et al in Tel Aviv district which found that grand multiparous (5 children) had a significantly higher rate of breast-feeding than women with one to four children [29]. Delhi study, the less educated mothers were positively related to EBF [30] this is consistent with the study findings, those delivered by caesarian were less likely to fully breastfeed for 6 months [28,30]. The results from other studies which have found significant postpartum weight loss in exclusively breastfeeding mothers compared to formula feeding mother [31,32] supported by the study result showing weight loss of 37% breast feeding mothers and 18% of bottle feeding mothers compared to 19% of mixed breast and bottle feeding mothers,

PCBS study in the year 2006 that EBF in the first 6months of life is higher for females[33]. The study recorded a decreasing rate of respiratory tract infection and hospitalization with increasing rate of breast feeding 16(20%)compared to 34(41%) bottle feeding and 32(39%) mixed type of feeding which is supported in many world wide studies and references [34]. Breastfeeding has numerous benefits both for infants and mothers. It provides all the nutrients infants need for a healthy development, it protects them from common childhood illnesses. Breast milk also provides protective factors for infants, reducing significant morbidities for infant health and his mother as well.

Conclusion: The duration of any breastfeeding showed a decline over the time especially with decreasing maternal age and those delivered by section , An older less educated and multiparous mothers who lived in rural communities and belonged to the low socio-economic class were found more likely to breastfeed and have prolonged duration compared to other groups due to their cultural practice. It is recommended that breastfeeding patterns and practices need to be re-assessed to analyze and follow up data and present more accurate and valid results with long term parental and social education and training programs to serve with this study as baseline information for any upcoming longitudinal studies on breastfeeding.

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