

Significance of Parental Education in Choosing Breast Milk for Infant Feeding at Diyala Province, Hospital- Based Study

* Najdat Shukur Mahmoud (M.B.Ch.B., F.I.C.M.S.)

** Kareem Assi Obaid

Abstract

Background: exclusive breast feeding is recommended as the optimal way to feed infants especially for the 1st 6 month of life. While the overall breast feeding rate are high in the world all over, it is relatively uncommon among middle eastern women, there may be many factors affecting that. The objective of this study was to identify if the parental (maternal & paternal) education affect the using of breast feeding as the predominant way of infant feeding in people of Diyala province as a trial for discovering the factors affecting breast feeding practice in the society.

Patient & method: This is a cross- sectional study conducted at Al- Batool Teaching Hospital for Maternity & Children from 1st of September 2011 – 1st of March 2012.

Children of 1 yr old or less were included, a detailed feeding history & the level of education of both parents were taken.

The sample was divided according to the type of feeding into 2 groups: predominantly breast fed babies & bottle fed babies, parental education level was divided into five classes.

Analysis of data was done by using SPSS version 10, chi- square was applicated to find the association.

Results: During the 6 month period of the study, 61 pairs of children were included, 61 of them were predominantly breast fed & the other 61 depended bottle feeding.

Chance of breast feeding was increased with increasing of both maternal & paternal level of education, with p value of (0.07) & (0.011), respectively.

Conclusion: Mother's education may add something positive in their mind towards breast milk practice but it is not enough as a significant factor to encourage breast feeding. The state was different with father's education, it significantly affect the decision to feed their babies breast milk.

Key words: breast feeding, education, Diyala.

* Pediatrics Department/ College of Medicine / Diyala University/ Diyala/ Iraq.

** Pediatrics Department/ College of Medicine/ Diyala University/ Diyala/ Iraq.

Introduction

Growing policy attention has been paid to the nutrition of infants and the importance of breast milk for child development. Policy documents are based on a wealth of national and international research indicating the

positive health outcomes of breast-feeding for mother and child.[1] At an international level, documents like the WHO Innocenti Declaration[2] and the European Commission's Protection, promotion and support of breast feeding in Europe reflect

the supranational impetus in promoting breast-feeding.[3]

The World Health Organization (WHO) and the American Academy of Pediatrics (AAP) emphasize the value of breast feeding for mothers as well as children. Both recommend exclusive breastfeeding for the first six months of life. The AAP recommends that this be followed by supplemented breastfeeding for at least one year, while WHO recommends that supplemented breastfeeding continue up to two years or more.[4,5] While recognizing the superiority of breastfeeding, regulating authorities also work to minimize the risks of artificial feeding.[6]

The WHO claims that 'exclusive breastfeeding from birth is possible for most women who choose to do so.[7] However, this ignores the large number of mothers for whom exclusive breastfeeding is, albeit biologically 'possible', outright unfeasible or undesirable for different socio-cultural, economic or other personal reasons.[8]

Numerous studies have found that breastfeeding take-up and duration is influenced by the mother's socio-economic background and income. Research has unanimously highlighted how mothers in more privileged social classes and in higher income groups are more likely to both initiate breastfeeding and to continue to breastfeed for longer when compared to mothers in less privileged classes and those in lower income groups. [9-11]

A few studies have also shown that the mother's education is an important influence in mother's breastfeeding patterns, and there is a strong link between educational qualifications, income and social class. However, some research has indicated that the mother's educational background may be more important in understanding differences in breastfeeding patterns among mothers

than occupation-based social class distinctions. [12-15]

A report based on the Scottish sample of the Millennium Cohort Study showed that social class, which on its own was a significant predictor of breastfeeding, was no longer significant when also controlling for the mother's educational qualifications in the regression model.[16]

Finally, research using Growing Up in Scotland data found that social class was an important predictor of breastfeeding take-up on its own but ceased to be significant when also controlling for the mother's educational qualifications.[16]

Aim of the Study

The present study aimed to collect data & analyse it to assess the effect of parental (maternal & paternal) education on rate of breast feeding in the people of Diyala province & this may be useful to create a successful programmes & plans to strengthen breastfeeding practices in the province.

Patient and Method

This is a cross- sectional study, it was conducted at al- Batool Teaching Hospital for Maternity & Children from 1st of September 2011 – 1st of March 2012. Al-Batool Teaching Hospital is the alone hospital for children at Baquba city (center of Diyala province –eastern Iraq), which receive patients from the city itself, in addition to the referred cases from peripheral districts.

The Sample of the Study

During the study period, children of 12 month old or less were included, attention was taken to involve each child once a time during the study. Those were divided into two age groups: birth - 6 mo & > 6 mo –1 year old.

A detailed feeding history regarding the type of feeding & the level of education for both parents was taken from the parents or

near relatives according to an organized self – administered questionnaire.

Type of Feeding

The sample was divided into 2 groups according to the type of feeding:

- 1- Predominantly breast-fed infants.
- 2- Bottle-fed infant.

WHO (World Health Organization) definition for Predominant breast feeding was depended in the study, that is (the infant's predominant source of nourishment has been breast milk. However, the infant may also have received water & water-based drinks (sweetened & flavored water, tea, infusion, etc.); fruit juice; oral rehydration salts (ORS) solution; drop & syrup forms of vitamins, minerals & medicines; ritual fluids (in limited quantities). With the exception of fruit juice & sugar water, no food- based fluid is allowed under this definition).[17]

Babies with mixed breast & bottle feeding & who was breast fed with added solid foods were not included in the study, also care was taken to not preclude certain families in the study, those whom children were imposed on certain type of feeding, e.g. babies with lactose intolerance, galactosemia, phenylketonuria, babies of missed mother (e.g. dead mother).

Level of education

Educational attainment was defined in five groups according to the highest academic qualification depending on Iraqi program of education: **Not- educated - illiterate-** (is aperson who didn't admit to the school or who admit but had no academic qualification, i.e. less than completed 6 stages of education), **primary-school attainment** (is a person who completed the primary school, i.e. 6 stages of education or more, but hadn't intermediate school-attainment),**intermediate-school attainment** (is a person who completed the intermediate school, i.e. 9 stages of education or more, but hadn't Preparatory-school attainment,

preparatory-school attainment

(is a person who completed the preparatory school i.e. 12 stages of education or more, but hadn't higher-education attainment, & **higher-education attainment** (is a prson who completed higher education study , i.e. education of 14 stages or more).[18]

This classification was applied for each parent, so this study was done to find the association between types of feeding of the children with the level of education of each parent separately.

Factor elimination

Many factors may affect the decision whether to feed the baby breast feeding or bottle feeding, e.g. maternal employment (it has been associated with low rates of initiation & duration of breast feeding in some studies,[19] age of the baby (because some of families started breast feeding then it replaced by bottle feeding), & admission of the mother or the baby to the hospital post-delivery (because this may interfere with initiation of breast feeding). All these factors may cause bias in the study, so to eliminate their effect, the 2 groups of study were similar regarding age of the baby, maternal employment, & admission of the mother or the baby to the hospital post- delivery, so each child had a comparable one from the other group.

Many data for sample had been reviewed & mentioned as descriptive results, these include age , sex, maternal employment, mode of delivery, admission of the baby or the mother to the hospital post- delivery immediately.

Analysis of data was done by using SPSS version 10, chi- square was applicated to find the association between the type of feeding & education of the parents.

Results

During the period of the study, 61 pairs of children (122 child) were included, each pair

were concordant regarding age, maternal employment, & post- delivery admission of the baby &/or the mother to the hospital, but they were different in the type of feeding (for each pair, one was breast fed, while the other was bottle fed, so 61 child were breast fed & the other 61 were bottle fed).

Infant in the 1st 6 month of age had the greater chance of involvement & the sex distribution was nearly equal for both groups of feeding, table (1).

Many factors affect the initiation &/ or continuation of breast feeding practice, table (2) will show some of these factors & its distribution to the type of feeding.

The level of education of the parents varies considerably (from illiterates to higher education attained parents), feeding of whom

children also differs. Tables (3,4) show the distribution of type of infant feeding to the level of maternal & paternal education, respectively.

In table (3), statistical analysis for 2/2 table of Illiterates & educated mothers to the type of feeding showed that the mothers of babies on breast feeding were more likely educated than those of bottle fed children, but this effect was not enough to be statistically significant (p value 0.07), while by table (4), statistical analysis for 2/2 table of Illiterates & educated fathers to the type of feeding showed that the fathers of babies on breast feeding were more educated than those on of bottle fed children & this was statistically significant (p value 0.011).

Table (1): Demographic characters of the sample.

Feeding Character		Breast feeding	Bottle feeding	Total
		no. (%)*	no. (%)*	no. (%)*
Age	Birth – 6 mo	38 (31)	38 (31)	76 (62)
	> 6 mo-1 yr	23 (19)	23 (19)	46 (38)
Sex	Male	32 (26)	33 (27)	65 (53)
	Female	29 (24)	28 (23)	57 (47)

* The percentage was calculated to 122 (100%).

Table (2): Factors which may play a role in selection of the type of feeding.

Feeding Factor		Breast feeding	Bottle feeding	Total
		no. (%)*	no. (%)*	no. (%)*
Employment	Housewife	51 (42)	51 (42)	102 (84)
	Employed	10 (8)	10 (8)	20 (16)
Mode of delivery	Vaginal	41 (34)	31 (25)	72 (59)
	Caesarian section	20 (16.4)	30 (24.6)	50 (41)
Post- delivery Admission**	Yes	11 (9)	11 (9)	22 (18)
	No	50 (41)	50 (41)	100 (82)

* The percentage was calculated to 122.

** Post -delivery admission means admission of the baby &/or the mother to the hospital post-delivery immediately.

Table (3): The distribution of type of infant feeding to the level of maternal education.

Type of feeding		Breast feeding no. (%)	Bottle feeding no. (%)	Total no. (%)	P value
Maternal Education					
Educated mothers	Primary school	16 (13.1)	22 (18)	38 (31.1)	0.07
	Intermediate school	3 (2.5)	8 (6.5)	11 (9)	
	Preparatory school	11 (9)	2 (1.7)	13 (10.7)	
	Higher education	22 (18)	17 (14)	39 (32)	
Illiterates	9 (7.4)	12 (9.8)	21 (17.2)		
Total		61 (50)	61 (50)	122 (100)	

Table (4): The distribution of type of infant feeding to the level of father’s education.

Type of feeding		Breast feeding no. (%)	Bottle feeding no. (%)	Total no. (%)	P value
Father’s education					
Educated	Primary school	10 (8.2)	12 (9.8)	22 (18)	0.011
	Intermediate school	5 (4.1)	8 (6.5)	13 (10.6)	
	Preparatory school	13 (10.7)	13 (10.7)	26 (21.4)	
	Higher education	30 (24.5)	18 (14.8)	48 (39.3)	
Illiterates	3 (2.5)	10 (8.2)	13 (10.7)		
Total		61 (50)	61 (50)	122 (100)	

Discussion

This study used educational level as single indicator of socioeconomic status. Socioeconomic status is a multifactor construct, whose most common indicators are educational level, income level, and occupational class.[20] As a socioeconomic indicator, level of education can also be applied to teenage and unemployed mothers, unlike occupational class. However, educational level does not entirely capture the material and financial aspects of socioeconomic status.[20,21]

Both mothers & fathers' educational level was taken into account. The most important

is the association of breast feeding with maternal education level, because she is the main caregiver for the child and the only person who can breastfeed. However, fathers also influence breastfeeding decisions, but less strongly than mothers' educational level.[22]

We found that the rate of predominantly breast feeding is increased with increasing level of parental education, & in turn, increasing socioeconomic status, so our study is consistent with earlier reports stating that rates of breastfeeding are higher in women with a higher socioeconomic status than in those with a lower

socioeconomic status.[23] In the current study rate of breast feeding was increased with increasing maternal level of education, but this association was not significant statistically, this was concordant with some of other studies, they found breast feeding rate is not affected by level of maternal education[24] & in a study of age at first breast feed in Shimla, Vatsayan and co-workers reported that maternal education did not have any influence on breast feeding,[25] while it was different from that concluded in other studies, in one study at Hong Kong breast feeding was found to have a statistically significant relationship with the mother's and father's education level.[26] In other study they found higher maternal education was significantly associated with exclusive breastfeeding.[27] In a study did in Sri Lanka they found parental education was significantly associated with exclusive breastfeeding.[28]

Regarding father's level of education, it significantly associated with choosing breast milk to feed the baby & this was concordant with that study at Hong Kong & Sri Lanka.[26,28]

There were several limitations in our study. It was dependant on predominant other than exclusive breast feeding because of cultural habits in Iraq including introduction of many elements other than breast milk, like water, water- based drinks, & fruit juice, to the baby feed, so it was difficult to find a child on exclusive breast feeding. Also, the overall number of children in this study was limited because of many factor elimination, so to admit a breast- fed child to the study we must find another one feed formula milk similar to the 1st one by many features, thus creating a limited field to work.

Conclusion

It seems that maternal education may add something positive in their mind towards breast feeding but it is not enough as a significant factor to encourage breast feeding. The state was different with father education, it significantly affect the decision to feed their babies breast milk.

Recommendation

The subject is worthy of attention because of the benefit of breast feeding over bottle feeding, so to be recommended by both WHO & AAP. There is a need for special programs that support and encourage breast feeding, focusing particularly on mothers with a low level of education, many countries introduce these programs in hospitals & some of them started during the 2nd trimester of pregnancy, on the other hand, level of maternal education was not so affecting the type of feeding, so we recommend to admit breast feeding education to the usual education at secondary schools as like as other subjects caring for the health of human being & had been admitted many years ago at Iraqi schools.

The government should support breast feeding program through encouraging the employed mother for breast feeding by decreasing the number of work hours that mother spend during employment.

References

- [1] Fewtrell MS. The long term benefits of having been Breastfed. *Curr Pediatr*. 2004;14:97-103.
- [2] World Health Organization. Innocenti Declaration on the Protection, Promotion and Support of Breastfeeding. Produced and adopted at the WHO/UNICEF Meeting on Breastfeeding in the 990's: A Global Initiative, Spedale degli Innocenti, Florence, Italy, 30 July–1 August 1990.
- [3] European Commission, EU Project on Promotion of Breastfeeding in Europe.

Protection, promotion and support of breastfeeding in Europe: a blueprint for action. Presented at EU Conference on Promotion of Breastfeeding in Europe, Dublin Castle, Ireland, 18 June 2004.

[4] World Health Organization. Global strategy for infant and young child feeding. Geneva, Switzerland: World Health Organization and UNICEF, 2003.

[5] Gartner LM. Breastfeeding and the use of human milk . *Pediatrics*.2005;115 (2): 496–506.

[6] Baker R. Human milk substitutes. An American perspective. *Minerva Pediatr*.2003 ;55 (3):195–207.

[7] WHO. The International Code of Marketing of Breast-Milk Substitutes: Frequently asked questions, World Health Organization, 2006.

[8] Shakespeare F.B., Garcia J.. Breast-feeding difficulties experienced by women taking part in a qualitative interview study of postnatal depression, *Midwifery*. 2004;20:251-260.

[9] Avishai O. Managing The Lactating Body: The Breast-Feeding Project and Privileged Motherhood, *Qualitative Sociology*. 2007;30(2):135-152.

[10] Bailey C., Pain R.H., Aarvold J.E. A 'give it a go' breast-feeding culture and early cessation among low-income mothers. *Midwifery*.2004;20(3): 240-250.

[11] Hamlyn B., Brooker S., Oleinikova K., Wands, S.. Infant Feeding 2000: A Survey conducted on behalf of UK Health Departments by BMRB Social Research', London, The Stationary Office,2002.

[12] Kelly Y.J., Watt R.G.. Breast-feeding initiation and exclusive duration a 6 months by social class - results from the Millennium Cohort Study, *Public Health and Nutrition*.2005;8(4):417-421.

[13] Ludvigsson J.F. and Ludvigsson J.. Socio-economic determinants, maternal smoking and coffee consumption, and

exclusive breastfeeding in 10 205 children', *Acta Paediatrica*.2005;94(9):1310-1319.

[14] Papadimitriou G., Kotzaeridou U., Mouratidis C., Goularas P., Coe C., Ganas A., et al. Rates and social patterning of household smoking and breastfeeding in contrasting European settings', *Child: Care, Health and Development*. 2005;31(5):603-610.

[15] Scott J.A., GradDipDiet, Binns C.W., Graham K.I., GradDipNut Diet, Oddy W.H.. Temporal Changes in the Determinants of Breastfeeding Initiation', *Birth*.2006;33(1): 37- 45.

[16] Dex S.. Millennium Cohort Study - Exploration of Some Distinctive Results for Scotland, Scottish Government Social Research,2008.

[17] World Health Organization. Indicators for assessing breast feeding practices. Geneva, Switzerland: World Health Organization, 11- 12 June 1991.

[18] 20. 2010 Iraqi cultural office, Washington D. C. 20005. Education System in Iraq. usa@mohesr.gov.iq, info@iraqiculture-usa.com

[19] Wright AL. the rise of breast feeding in the united states. *Pediatr Clin North Am*.2001;48:1-12.

[20] Galobardes B, Shaw M, Lawlor DA, Lynch JW, Davey Smith G. Indicators of socioeconomic position (part 1). *J Epidemiol Community Health*.2006;60 (1):7– 12

[21] Braveman PA, Cubbin C, Egerter S. Socioeconomic status in health research: one size does not fit all. *JAMA*.2005;294 (22):2879– 2888

[22] Glenn LL, Quillin SI. Opposing effects of maternal and paternal socioeconomic status on neonatal feeding method, place of sleep, and maternal sleep time. *J Perinat Neonatal Nurs*.2007;21 (2):165– 172

- [23] Dubois L, Girard M. Social inequalities in infant feeding during the first year of life. *The Longitudinal Study of Child Development in Quebec (LSCDQ 1998–2002)*. *Public Health Nutr.*2003;6 (8):773–783
- [24] Surg C, Shankar Narayan, Nisha Natarajan, Surg Capt KS Bawa . Maternal and Neonatal Factors Adversely Affecting Breastfeeding in the Perinatal Period. *MJAFI* 2005; 61 : 216-219
- [25] Vatsayan A, Gupta AK, Dhadwal D, Ahluwalia SK, Sharma R, Sood RK. Age during breast feeding and timely suckling. *Indian J Pediatr* 1996;63:791-4.
- [26] Eyl Leung , Kya Au , Ssw Cheng , Sy Kok , Hk Lui , Wew Wong. Practice of breastfeeding and factors that affect breastfeeding in Hong Kong. *Hong Kong Med J* 2006;12:432-6
- [27] M Gay, D Thirukumar. Parental choice of infant feeding behaviours in South West Sydney: A preliminary investigation. *Health Education Journal* April 3, 2012
- [28] Suneth B Agampodi, Thilini C Agampodi and Udage Kankanamge D Piyaseeli. Breastfeeding practices in a public health field practice area in Sri Lanka: a survival analysis. *international breastfeeding journal* 11 October 2007; 2:62.