

Breastfeeding Practice in Arar, Northern Saudi Arabia

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ABSTRACT

Background: Human milk meets all the nutritional requirements of infants for the first 6 months of life, and it is associated with a lower incidence of diarrhea than partial or artificial feeding. The infant should be exclusively breastfed for at least 4 months of life and if possible for 6 months, as recommended by WHO and UNICEF.

Aim of the Study: was to assess the breastfeeding practice for children under 24 months in Arar city, as well as its relation to some sociodemographic and nutrition related variables.

Participants and methods: A cross-sectional study was carried out in Arar city, mothers were selected from the attendees of 6 randomly selected primary health care centers in the city. They were interviewed and filled in a questionnaire that included the key questions.

Results: 11.8% of infants received exclusive breastfeeding, 39.7% received a mix of both breast and artificial feeding while 48.5% depended only on artificial feeding. More than 50% of the studied infants were males, 70% of the mothers weren't working. No significant relationship between type of child feeding and child age, sex, mother education, mother's working status, father's work or mother age group ($P > 0.05$). About 2 thirds of children who had mixed feeding suffered from repeated gastroenteritis, delayed teething, standing and walking.

Conclusion: In accordance with the obvious deficiency of exclusive breastfeeding in Arar city which is located in Northern Saudi Arabia, we highly recommend that programs promoting exclusive breastfeeding in the first 6 months of age must be conducted to increase mothers' awareness of the exclusive breastfeeding duration is recommended.

Keywords: Breastfeeding; Artificial feeding; Exclusive breastfeeding; Breastfeeding Practice; Arar, Northern Saudi Arabia

INTRODUCTION

Breast milk is the foremost nutrition for healthy infants, as it contains all of the essential nutrient that have short and long term benefits for infants ^(1,2). The World Health Organization (WHO) has strongly endorsed not only the feeding of all infants exclusively with breast milk for the first 6 months of their lives ⁽³⁾, but also the continuity of breastfeeding until 2 years of age in addition to nutritionally adequate complementary foods ^(4,2). About 38% of infant feed only on breast milk during first 6 month ⁽⁵⁾. In United State, about 75% of women began breastfeeding and only 13% of them get it until the age of 6 month ⁽⁶⁾.

On an annual basis, about 820,000 children under the age of five could have their lives saved by increasing breastfeeding ⁽⁷⁾. Feeding on breast milk in the first 6 month promotes the healthy growth and development of infant, and reduces the likelihood of infant with non-communicable diseases such as

cardiovascular diseases, hypertension and diabetes ^(8,9), while early use of complementary feeding affects the child growth and increases the risk of mortality from diarrheal disease ^(10,11).

Eastern Mediterranean Regional Office of WHO report showed that over 60% of early breastfeeding mothers continue to breastfeed until 12 month in the Middle East and North Africa (MENA) countries ⁽¹²⁾. Despite these high rates, the previous report was less than 40% of infants under six months were being exclusivity breastfed ⁽¹²⁾. The report from Dop and Benbouzid showed that rate of exclusive breastfeeding at four months has reached 24% in Middle East region. Nevertheless, The Global Data Bank on infant and young child feeding included low rates from the MENA region. These low rates have been observed in countries like Algeria, Sudan and Egypt ⁽¹³⁾.

Taking Australian data from 2004 to 2005 as an example, although a high initiation rate of 92% was found for exclusive

breastfeeding, the rate then dropped to 71% of infants who exclusively breastfed at 1 month of age, 56% at 3 months, and 14% at 6 months. In Saudi Arabia, findings from a research study indicate that 77.8% of infants began exclusive breastfeeding within 24 hours, falling sharply to 32.9% at 2 months of age, 19.2% at 4 months, and 12.2% at 6 months⁽¹⁴⁾.

Extensive research has examined this pattern of changes in breastfeeding practice during the first 6 months of an infant's life, and various studies have explored the most influential factors in relation to exclusive breastfeeding from among sociodemographics (such as parents' education levels, living rurally or in a city, income level, and parity), biosocial factors (including the available support for breastfeeding), culture (such as breastfeeding attitudes and social norms), and employment law and policy^(14,15). The relative influence of each factor differs across different nations and regions, over time, and even within population subgroups^(14,16,17). A recent review by Al Juaid et al¹⁴ in the Saudi Arabian context found a scarcity of data relating to the prevalence and predictors of exclusive breastfeeding and also that these vary between and within the different provinces of Saudi Arabia.

Aim of the study: The main objective of this study was to determine the breastfeeding status for children under 24 months in Arar city, and to determine breastfeeding practice in relation to some sociodemographic and nutrition related variables.

PARTICIPANTS AND METHODS

A cross-sectional study was carried out in Arar city, a town in Northern Borders Province, Saudi Arabia, close to the border with Jordan, during the period from 1 October 2016 to 31 May 2017. Mothers were selected from the attendees of the female side of 6 randomly selected primary health care centers in the city using systematic random sampling technique (every 4th mother). They interviewed and filled a questionnaire which includes the needed questions.

The questionnaires included questions about socio-demographic characteristics of the participants, including age, sex, child order between siblings, average family income per month and parents' education, work and consanguinity. In addition, the questionnaire included inquiries about type of the child feeding, presence of chronic diseases, comorbidities and

some feeding related parameters of the studied children.

Statistical analysis

Data were compiled and analyzed using statistical package for the social sciences (SPSS, version 16) and results were analyzed with frequencies and Chi-squared test as appropriate. P-value was considered significant if <0.05 .

Ethical consideration: The study was approved by the Research Ethics Committee of faculty of medicine, Northern Border University. Participants were informed that participation is completely voluntary. No names was recorded on the questionnaires. All questionnaires were kept safe.

RESULTS

In Table (1) illustrates the sociodemographic characteristics of studied children. more than 50% of our participant were males. In studied children, 37.5% were the 1st child, 46.2% of the mothers were 25-34 years old, 65% of them finished university stage of education, about 70% of mother were not working while 52% of fathers finished university education, 39% of them work at governmental sector.

Table (2) shows type of child's feeding and nutrition related morbidity of studied children. From the table it is clear that, Among the 400 studied children, 11.8% get exclusive breastfeeding, 39.7% had both breast and artificial feeding while 48.5% depended on artificial feeding only, 58% of them had Vit D supplementation. Only 21 cases of them had chronic disease. 91% of cases hadn't get rickets, more than 80% of them didn't complain from repeated fever or repeated gastroenteritis. By asking participant only 16% of them had delayed teething and 11% had delayed walking.

Table (3) shows the relationship between type of child feeding and child's sociodemographic characteristics. 44.2% of male children get mixed breastfeeding and artificial feeding while 44.4% of females get only artificial feeding. Just 11.8% had breast feeding in the 1st 6 months of age, while 48.5% in the same age group had only artificial feeding. Also 19.5% only of the children more than 18 months had a natural breast feeding. 89 mothers (41.4%) give artificial feeding at age 12-18 months. No significant relationship between type of child feeding and child age group, mother education, mother's working status, father's work or mother age group (P

>0.05). Table (4) show relationship between type of child's feeding and nutrition related characteristics and morbidity. Children who get both type of feeding (164 child), 17 of them had rickets, 20 had short stature, 21 had repeated gastroenteritis, 24 had delayed teething and 18

had delayed walking. On the other hand, 103 of children which depend only on artificial feeding had no Vit D supplementation. More than 40% of children who had both types of feeding don't suffer from repeated gastroenteritis nor from delayed teething, standing or walking.

Table (1): Sociodemographic characteristics of studied children, Arar city, 2016

Gender	No.	%
Male	231	57.8
Female	169	42.2
Child age group at the time of the study (in months)		
< 6	68	17.0
6-12	101	25.2
12-18	144	36.0
>18	87	21.8
Arrangement of the child among siblings		
1 st	150	37.5
2 nd	81	20.2
3 ^{ed}	48	12.0
4 th	40	10.0
5 th	25	6.2
6 th	31	7.8
Others	25	6.2
Mother age group		
<25	87	21.8
25-34	185	46.2
35-45	110	27.5
45+	18	4.5
Mother education		
Illiterate	12	3.0
Primary	12	3.0
Preparatory	25	6.2
Secondary	84	21.0
University	260	65.0
More than university	7	1.8
Father education		
Illiterate	8	2.0
Primary	16	4.0
Preparatory	21	5.2
Secondary	131	32.8
University	208	52.0
More than university	16	4.0
Mother work		
Working	118	29.5
Not working	282	70.5
Father work		
Private sector	68	17.0
Governmental sector	156	39.0
Army forces	127	31.8
Businessman	18	4.5
Retired	31	7.8

Table (2): Type of child's feeding and child's nutrition related characteristics and morbidity of studied children, Arar city, 2016

Type of child feeding	No.	%
Natural	69	17.2
Artificial	167	41.8
Both	164	41.0
Vit. D supplementation		
Yes	168	42.0
No	232	58.0
Repeated gastroenteritis		
Yes	65	16.2
No	335	83.8
Repeated fevers		
Yes	75	18.8
Rickets		
Yes	36	9.0
No	364	91.0
No	325	82.2
Delayed teething		
Yes	64	16.0
No	336	84.0
Delayed walking		
Yes	44	11.0
No	356	89.0
Chronic diseases		
Yes	21	5.2
No	379	94.8
Repeated convulsions		
Yes	18	4.5
	382	95.5

Table (3): the relationship between type of child feeding and child's sociodemographic characteristics, Arar city, 2016

Child age group (in month)	Child feeding			Total (n=400)	value
	Natural (n=69)	Artificial (n=167)	Both (n=164)		
Less than 6	8	33	27	68	0.681
	11.8%	48.5%	39.7%	100.0%	
6-12	20	44	37	101	
	19.8%	43.6%	36.6%	100.0%	
12-18	24	57	63	144	
	16.7%	39.6%	43.8%	100.0%	
More than 18	17	33	37	87	
	19.5%	37.9%	42.5%	100.0%	
Sex					
Male	37	92	102	231	0.318
	16.0%	39.8%	44.2%	100.0%	
Female	32	75	62	169	
	18.9%	44.4%	36.7%	100.0%	

Arrangement					
1 st	28	57	65	150	0.02
	18.7%	38.0%	43.3%	100.0%	
2 nd	14	42	25	81	
	17.3%	51.9%	30.9%	100.0%	
3 ^{ed}	9	24	15	48	
	18.8%	50.0%	31.2%	100.0%	
4 th	9	17	14	40	
	22.5%	42.5%	35.0%	100.0%	
5 th	3	13	9	25	
	12.0%	52.0%	36.0%	100.0%	
6 th	3	10	18	31	
	9.7%	32.3%	58.1%	100.0%	
Others	3	4	18	25	
	12.0%	16.0%	72.0%	100.0%	
Mother education					
Primary	4	2	6	12	0.321
	33.3%	16.7%	50.0%	100.0%	
Preparatory	4	11	10	25	
	16.0%	44.0%	40.0%	100.0%	
Secondary	15	39	30	84	
	17.9%	46.4%	35.7%	100.0%	
University	40	110	110	260	
	15.4%	42.3%	42.3%	100.0%	
More than university	1	2	4	7	
	14.3%	28.6%	57.1%	100.0%	
Illiterate	5	3	4	12	
	41.7%	25.0%	33.3%	100.0%	
Mother's working status					
Working	20	46	52	118	0.705
	16.9%	39.0%	44.1%	100.0%	
Not working	49	121	112	282	
	17.4%	42.9%	39.7%	100.0%	
Father's work					
Private sector	16	28	24	68	0.469
	23.5%	41.2%	35.3%	100.0%	
Governmental sector	26	63	67	156	
	16.7%	40.4%	42.9%	100.0%	
Army forces	17	56	54	127	
	13.4%	44.1%	42.5%	100.0%	
Businessman	3	5	10	18	
	16.7%	27.8%	55.6%	100.0%	
Retired	7	15	9	31	
	22.6%	48.4%	29.0%	100.0%	
Mother age group					
<25	16	36	35	87	0.112
	18.4%	41.4%	40.2%	100.0%	
25-34	28	89	68	185	
	15.1%	48.1%	36.8%	100.0%	
35-44	19	38	53	110	
	17.3%	34.5%	48.2%	100.0%	
45+	6	4	8	18	
	33.3%	22.2%	44.4%	100.0%	

Table (4): relationship between type of child's feeding and child's nutrition related characteristics and morbidity, Arar city, 2016

Variable	Child feeding			Total (n=400)	value
	Natural (n=69)	Artificial (n=167)	Both (n=164)		
Vit. D supplementation					
Yes	33	64	71	168	.368
	19.6%	38.1%	42.3%	100.0%	
No	36	103	93	232	100.0%
	15.5%	44.4%	40.1%	100.0%	
Repeated gastroenteritis					
Yes	9	35	21	65	.097
	13.8%	53.8%	32.3%	100.0%	
No	60	132	143	335	100.0%
	17.9%	39.4%	42.7%	100.0%	
Repeated fevers					
Yes	10	29	36	75	.344
	13.3%	38.7%	48.0%	100.0%	
No	59	138	128	325	100.0%
	18.2%	42.5%	39.4%	100.0%	
Chronic diseases					
Yes	3	12	6	21	.332
	14.3%	57.1%	28.6%	100.0%	
No	66	155	158	379	100.0%
	17.4%	40.9%	41.7%	100.0%	
Rickets					
Yes	8	11	17	36	.072
	22.2%	30.6%	47.2%	100.0%	
No	61	156	147	364	100.0%
	16.8%	42.9%	40.4%	100.0%	
Delayed teething					
Yes	12	28	24	64	.819
	18.8%	43.8%	37.5%	100.0%	
No	57	139	140	336	100.0%
	17.0%	41.4%	41.7%	100.0%	
Delayed standing					
Yes	6	31	18	55	.055
	10.9%	56.4%	32.7%	100.0%	
No	63	136	146	345	100.0%
	18.3%	39.4%	42.3%	100.0%	
Delayed walking					
Yes	9	17	18	44	.815
	20.5%	38.6%	40.9%	100.0%	
No	60	150	146	356	100.0%
	16.9%	42.1%	41.0%	100.0%	
Repeated convulsions					
Yes	4	6	8	18	.721
	22.2%	33.3%	44.4%	100.0%	
No	65	161	156	382	100.0%
	17.0%	42.1%	40.8%	100.0%	

DISCUSSION

The infant should be exclusively breastfed for at least 4 months of life and if possible for 6 months, as recommended by WHO and UNICEF. Human milk meets all the nutritional requirements of infants for the first 6 months of life, and is associated with a lower incidence of diarrhea than total or partial or artificial feeding^(18,19).

The main objective of this study was to determine the breastfeeding status for children under 24 months in Arar city, and to determine breastfeeding practice in relation to different sociodemographic variables of the study population.

A cross-sectional study was carried out in Arar city, a town in Northern Borders Province, Saudi Arabia, close to the border with Jordan, during the period from 1 October 2016 to 31 May 2017.

In our study unfortunately we found out that, exclusive breastfeeding under 6 months of age, was only 11.8%. This percentage is far below the recommended levels, and not comparable to the results from other countries as reported by WHO⁽²⁰⁾ like Egypt, Philippines and Sri Lanka (63, 29 and 29) respectively. Another study conducted in Dammam area of Saudi Arabia by **Qadri *et al.***⁽²¹⁾, found that particularly exclusive breastfeeding under 4 months of age was 33% which is a higher than ours⁽²¹⁾. The declining trend of exclusive breastfeeding from 90% to 50% at the age of 3 months has also been reported in Saudi Arabia⁽¹⁹⁾. The low level of exclusive breastfeeding is a matter of concern, because this indicates that these infants are being exposed to increased nutritional and other risks with the introduction of complementary foods. Even in societies where breastfeeding is the normal, mothers often introduce complementary feeding or drink at an early age.

All infants of less than 4-6 months should be fed exclusively on breast milk, however many mothers introduced complementary feeding at this age, which affects the normal healthy growth of the infant and causes many health problems like Rickets, repeated GIT, delayed teething or delayed walking as shown in table (2). Solids and semi-solid foods should not be introduced to infants before the age of 4 months⁽²²⁾.

In the current study, mixed (partial) feeding (breastfeeding combined with bottle feeding) was found in 41.0% of the studied children and 41.8% depended on the artificial feeding only.

Mixed has been very common among the Saudi mothers compared to other feeding methods as reported in many studies^(26,27). For instance, **Al-Othaimen *et al.***⁽²⁸⁾ documented that 57.9% of

infants and children under 18 months had received breastfeeding along with artificial infant formula by bottle and glass while only 21.5% and 20.6% of these subjects were exclusively breastfed or bottle-fed, respectively.

The mixed breastfeeding rates reported by other studies in Saudi Arabia, were 88.6% at birth⁽²⁸⁾, 49.8% at six months after birth⁽¹⁴⁾ and 56% of all infants and children less than two years old⁽²⁹⁾, while in our study was 36.6% at age of 6-12 months, 43.8% at age of 12-18 and 42.5 in children more than 18 months. The insufficient quantity of breast milk is one of the commonest reasons that leads mothers to start using complimentary food in early age and this problem has been reported by WHO and many independent studies⁽²³⁻²⁴⁾. However, it is well-known that almost all mothers can produce enough milk for one or even two babies, provided the baby suckles effectively and breastfeeds as often as he or she wants, even if the mother thinks her milk is insufficient, the baby gets all the milk needed.

In the current study, no significant relationship between type of child feeding and mother education, mother's working status, father's work or mother age group ($P > 0.05$). There are many factors associated with breastfeeding practices like maternal age, Mother's education and employment, Family income and many other factors. Moreover, with the influence of aggressive marketing of infant formulas directly to parents via television and the media, breastfeeding is no longer fashionable⁽²⁵⁾. In a national survey, **Al-Jassir *et al.***⁽²⁷⁾ it was concluded that younger mothers tended to introduce solid foods within the first two months, earlier than older mothers.

Our study revealed that, only 18.4% of the mothers less than 25 years of age exclusively breast milk fed their infants, while 33.3% of the mothers above 45 years old did. In accordance, many studies found that the effects of maternal age on breastfeeding were not statistically significant^(30,31,32,33). Also we considered the mother's employment as a factor affecting breastfeeding practices but we found that 44.1% of the working mothers introduced complementary food in an early stages, while only 39.7% of non-workers mothers did. In comparative with a recent study, it was found that 67% of studied mothers were working and about 91% have introduced complementary food in an early stages⁽³⁴⁾. Another four studies concluded that working mothers breastfed less frequently and had shorter duration than non-workers, and that these

differences were statistically significant^(14,30,31,35) which are against our findings.

CONCLUSION AND RECOMMENDATIONS

The prevalence of exclusive breastfeeding of infants at 6 months of age was found to be low among the study sample in Arar, Northern Saudi Arabia. We believe that the practice of exclusive breastfeeding can be improved by applying programs promoting 6 months of exclusive breastfeeding in line with WHO's 10 Steps campaign, this can provide the appropriate awareness level on the importance of continuity of breastfeeding until 2 years of age.

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