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Breastfeeding Practices and Infants Nutritional Status in Isoko North/South Local Government Areas of Delta State, Nigeria

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Abstract
The study identified the breastfeeding practices of mothers and assessment of nutritional status of infants in Isoko North and South Local Government Areas in Delta State, Nigeria. The sample consisted of 300 mothers from various occupational groups. The instrument used for data collection was a questionnaire. The data were analyzed by computing of the percentages of the responses to each item. Findings indicated that all the mothers breastfed their babies exclusively for the first two months. Few did so up to the 3rd month from the urban and rural setting. "Feeding on demand" and "scheduled feeding" were practiced. Some mothers breastfed their babies up to 15 months. Some breastfed because they felt breastmilk makes baby to be healthy. It is economical.and rich. Breastfeeding saves time. Some mothers drank milk to increase their breastmilk output. Some drank palm wine. The main reason for stopping breastfeeding was that baby was old enough to eat weaning foods. Some mothers had painful nipples due to breastfeeding. The infants who were mainly breastfed had normal nutritional status. Most infants who were partly breastfed were malnourished. It was recommended among others that mothers should practice exclusive breastfeeding for the first 4th - 6th month of life before giving complementary foods

Introduction

Infancy is the period of birth to one year. It is a very important period in the life of a child. At this time the child depends on milk. This could be breast milk or infant milk formula for the first 4-6 month of life. After this the child is introduced to semi-solid or solid food. Insufficient or inappropriate method of feeding results to malnutrition and infection.

Malnutrition is a very serious health problem in Nigeria. It is a leading cause of child morbidity and mortality. Nigeria ranked second among six development contries noted for high child mortality rate (Aminu and Agle, 2004). The severity of malnutrition in Nigeria is due to poor feeding practices (Breastfeeding and complementary feeding). Breast and complementary feeding practices are important basis for infant nutrition and health. This is because the period of childhood is confronted with high risks of infection and diseases which can be more detrimental to children than adults.

Malnutrition in children predisposes them later in life to a lot of chronic diseases such as high blood pressure, diabetes and stroke (Scrimshaw, 1997,Ashworth,1998). Other problems arising from malnutrition are delay in motor development, impaired cognitive function due to low intelligence quotient (IQ) resulting in poor school performance (Martorel, 1996), United Nations Committee on Coordination and Sub-Committee on Nutrition (2000).

The adverse effects of malnutrition on children call for urgent examination of the problem. The need to improve infant nutrition cannot be overemphasized. The eradication of malnutrition in Nigeria is of paramount importance. The improvement of young child's nutrition is of top priority for improved nutritional status, productivity and economic development. Important household decisions and practices determine the survival, growth development and health (Ngwu 2005). There is need for mothers to have an in-depth understanding of adequate, safe infant feeding practices and the effects. Attempts have been made to improve infants' nutrition in order for them to have good nutritional status. The WHO/UNICEF and Nigeria's National Breastfeeding Policy recommended that infants should be exclusively breastfed from birth to 6 months of age. The Federal Ministry of Health in conjunction with World Health Organization (1999) developed sets of dietary guidelines for various age groups including infants. Townsend (1994) noted that breastmilk is usually given to infants for the first six

months of life. After six months, breastmilk no longer satisfies an infant. The breasts do not produce enough milk that will supply nutrients in adequate amounts required by an infant. Breastmilk is a complete food for infants from birth to six months (ACC/SCN, 2000). The improvement of breastfeeding practices will improve health, nutrition and survival of infants and children. Exclusive breastfeeding is important in the early weeks of lactation to stimulate optimal milk production. "On demand feeding" leads to earlier maximal milk production than feeding on a fixed schedule (Ngwu 2005).

The introduction of fluid including water is likely to reduce the infants' demand for breastmilk, interfere with the maintenance of lactation and results in early termination of breastfeeding (Cohen et al 1994)

Ngwu (2005) recommended that for effective exclusive breastfeeding, no fluid other than breastmilk is required by an infant. When infants are given non milk fluids, the prevalence of diarrhea is much due to contamination of bottles and food.

Breastfeeding has many advantages. Breastfed infants respond better to vaccine for the protection against hay fever and asthma up to 17years (Lesson Payner (1992 Davis, 1998).

Breastmilk contains all the nutrients an infant needs for good health for the first six months of life It also contains anti- infective factors including immunoglobulin (anti-bodies and white blood cells) (leucocytes) and growth factors which stimulate the development of the infants gut (WHO, 1998). Breastmilk is a complete source of infant nutrition (ACC/SCN, 2000).

There is a relationship between having been breastfed as a child with stronger intellectual development and reduced risks of cancer, obesity and several chronic diseases (WHO, 2003)

Breastfeeding provides breast milk (complete food) to a baby. Breastmilk is readily available requiring no kitchen preparation. It reduces the severity and incidence of diarrhoea during the first year of life which is the major cause of mortality among infants and young children in developing countries. Breastmilk reduces the risk of lower respiratory tract infection. It prevents over weight, insulin dependent diabetes, diabetes mellitus, heart disease in later life (Davis, (1998), ACC/SCN (2000). According to Caliendo (2000) breastfeeding has been found to offer psychological, immunological, nutritional and physiological benefits to mother and child. As such Arkutu (1995) advised that every child should be breastfed at least for the first four

months of life. It was found that babies who are not breastfed are likely to die than those who are breastfed. Oladapo (1991) observed that breastfed babies are less sensitive to gastrointestinal infection and are less likely to develop allergic diseases such as asthma than bottlefed babies.

Arkutu (1995), Passmore and Eastwood (1991) described breastfeeding as the best method of feeding a baby. In addition Ogbuji (2005) found that the reasons for the presence of breastfeeding are as followings. Breastfeeding is economical (49 (48.48%). It offers protection for a baby (33 (56.9%). It contains all the nutrients a baby needs, 45 (77.59%). Ogbuji also found that in the study of undergraduate students of University of Nigeria, Nsukka, 4% (84.45%) breastfed exclusively, 20 (42.6%) bottle-fed exclusively. Few 9(15.5%) breastfed and bottle-fed their babies. In order to foster adequate breastfeeding of infants, WHO (1999) gave the following guidelines to mothers. Mothers should start breastfeeding immediately after birth - breastfeeding exclusively up to six months with no other food/milk. Do not give any other drink e.g. water, honey, glucose drink etc to babies during the first six months of life .Breastfeed "on demand'' both day and night. Breastfeed low birth weight babies (less than 2.5kg at birth) more frequently.

During breastfeeding mothers and infants could have certain problems. Some mothers have sore nipples in process of establishing a successful lactation, physical discomfort from breast engorgement in early stage of breastfeeding (Townsend, 1994). Some mothers do not have enough time for work during the period of breastfeeding. Exclusive breastfeeding is the practice in which breast milk alone is given to infants for the first 6months of life.UNICEF (1990) defined exclusive breastfeeding as the giving of breastmilk for the first six months of life and the introduction of complementary food thereafter. UNICEF (2000) recommended that no additional foods or fluid is necessary as it could be a means of introduction to harmful bacteria. World Health Organization (2000) recommended that exclusive breastfeeding should be carried out for the first four months of life of an infant.

Findings by WHO/UNICEF (2007) indicated that child mortality has been reduced by an estimate of 20% in parts of West Africa as a result of encouraging mothers to breastfeed their babies exclusively for the first six months of life. It was also estimated that 1.3 million additional children's lives could be saved if exclusive breastfeeding rates can be raised above 90% levels. Further estimation is that the initiation of exclusive breastfeeding in

the first hour of life reduces the rates of neonatal mortality by nearly four times.

UNICEF (1995) reported that in 1990 more than one million infants died. Such death would have been prevented if exclusive breastfeeding was practices. This report showed that such infants were given infant milk formula; parents were very poor, with little or no education and living in poor sanitary conditions.

UNICEF (1994) made comparism between infant milk formula and breastmilk as follows- breastmilk substitutes are frequently over diluted to save money and usually mixed with unsafe water supply. The bottles and teats are unsterlized and unclean. These are sources of microbial contamination. In contrast exclusive breastfeeding provides complete hygenic inexpensive nutrition.

UNICEF (2008) noted that most urban towns in Nigeria do not have proper clean running water leading to bacterial contamination. This is the main cause of diarrhea, rise of infection. Excessive dilution of feed results in low nutritional intake leading to malnutrition.

Gillian et al (2001), Arenz et al (2004) concluded that breastfeeding may be associated with reduced risk of obesity in school age children, adolescents and adulthood.

Judging from the high level of morbidity and mortality of infants in Nigeria arising from malnutrition, the improvement of the nutritional status of infants is of paramount importance; There is need to adequately investigate infant feeding practices and their nutritional status. This study investigated the breastfeeding practices of mothers and their infants' nutritional status in Isoko North and South Local Government Areas of Delta State, Nigeria.

The specific objectives of the study are as follows

1. To identify the breastfeeding practices of mothers in Isoko North and South Local Government Areas of Delta State, Nigeria
2. To find out the problems encountered during breastfeeding.
3. To assess the nutritional status of infants in Isoko North and South Local Government Areas.

Methodology

The study used an ex – post – facto design meant to find out the breastfeeding practices of mothers in Isoko North and South Local Government Areas in Delta State in Nigeria. The target population was mothers who have infants in Isoko North and South Local Government Areas in Delta State. The sample for the study consisted of 300 mothers with infants. These were randomly selected from mothers of various occupational groups (Farmers, traders, Civil Servants, Nurses, Seamstresses and teachers). The instrument that was used for data collection was a questionnaire, Section A was on demographic variables. Section B was on breastfeeding practices of the mothers. A total of 300 copies of the questionnaire were administered to the mothers. The literate filled their responses. The illiterate mothers were interviewed and their responses were immediately written into the questionnaire.

Anthropometry was done using standard procedure (Jelliffe and Jelliffe, 1996). The height/ length of each child was measured using a graduated measuring board. The knee of each infant was extended by applying a slight pressure on them in order to achieve a correct measurement to the nearest O.1cm. The weight of each infant who could stand was obtained by allowing such to stand on a bathroom scale. Other infants were weighed with their mothers' carrying them. Then each mother was weighed alone. Infant's weight was obtained by subtracting the mother's weight from both the weight of mother and infant. The measurement was read to the nearest 0.1kg.

Frequency distributions, percentages, were used for data analysis.

Findings

Table 1 showed the bio-data of the respondents. Some (30%) of the mothers were within the age range of 31-35years. Very few (7.00%0 were between 18-24years. The highest proportion (28.7%) had West African School Certificate. Very few (3.60%) had Bachelor's Degree. Some (10.0%) were traders while (6.70%) were nurses. Some (14.0%) earned below (N10,000 = per month/. Some (73.0%) earned above N40, 000.

Early Infant Feeding

Some 171 (57.%) of the mothers breastfed their babies immediately after delivery. Eight-one (27.0%) of then gave water and glucose. Thirty-six (120.0%) gave water only. Twelve (4.00%) gave coconut milk. None of the mothers gave their babies infant milk formula as first food. The main reason for the first food given was that it makes baby healthy (243) (81.0%),

traditional (30) (10.0%) and 27 (9.00%) stated that the food is easily available.

Greater percentage 277 (92.3%) of the mothers gave colostrums to their infants while 23 (7.70%) of them did not. Majority 263(88.0$) of those who gave colostrums to their infants did so because they believe that it is good for them. Some 15(5.00%) said that their babies like it. Ten 93.305) stated that it makes a baby to be healthy.

Out of the 7.70% of the women who did not give colostrums to their babies, four (1.30%) of them said that they did not like it for their babies. Three (1.00%) said it is dirty. Two (0.70%) were not sure whether it is good for the baby or not. One (0.30%) said it was not given to the babies in their community.

Breastfeeding of Infants

All 300 (100%) of the mothers breastfed their infants; 138 946.0%) of them did so, because they believed that breastmilks makes a baby healthy. Other reasons given are shown on table2.

All 300 (100%) of the mothers from the urban and rural areas breastfed exclusively for the first 2 months. At the 3 month, 86% of the urban and 90% of the rural mothers breastfed exclusively.

Findings showed that ten (3.3%) of the mothers stopped breastfeeding at the 4^{th} month, 17 (5.70%) stopped at the 6 month, 4 (1.70%) at the 7^{th} month. Fifty-one (17.0%) stopped at the 9th month. Seven (2.30%) at the 11^{th} month. A larger proportion 108 (36.3%) stopped breastfeeding their babies at the 12^{th} month and 34 (11.7%) at the 5^{th} month. Forty-eight (19%) of them stopped breast feeding at $16\text{-}19^{th}$ month and only 3 (1,00%) stopped at the 22^{nd} month.

Table 3 showed the measures adopted by the mothers in case breastmilk was not sufficient to satisfy a baby. Ninety five (31.7%) said that they drank milk in order to increase milk output, Seventy five (25.0%) of them drank fresh palm wine, fifty (16.7%) drank more water. Only 38(12.8%) of them drank coconut milk. Few (11) (3.70%) drank beverages such as Bournvita.

Age at Which Breastmilk Alone is Considered Insufficient to Meet an Infants' Nutritional Requirements

Majority 258(86.0%) of the mothers said that the ideal age at which breastmilk alone is insufficient for a baby is 4^{th}-6^{th} month. Few 24 (8.00%) of them mentioned 7-9 month, 14 (4.70%) said from birth to 3^{rd} month. From 10^{th}-12 month was reported by 4(1.30%) of the mothers.

Reasons for Stopping Breastfeeding

The most frequent reason for stopping breastfeeding was that baby was old enough to take weaning food by 141 (47.0%) of the mothers. Sixty – three (21.0%) reported that their babies rejected breastmilk. Other reasons are given in table 4.

Methods of Stopping Breastfeeding

Half 150 (50%) of the mothers stopped breastfeeding by rubbing bitter leaf on their breasts, 28 (9.30%) of them sent baby to a female relation and few (0.30% gradually reduced the quantity and number of times of breast feeding. Eighteen (6.00%) of the mothers stated they gave baby the food he/she liked best. Some 12 (4.00%) of the mothers rubbed bitter medicine or bitter leaf on their breasts and 1(0.30%) plastered the nipples. Nine 93.00%) stopped baby from sleeping with their seven (2.30%) of them traveled and left baby with house-help/ other persons. Five 91.70%) gave beverages and infant milk formula to baby. Four (1.30%) of the mothers stopped breast feeding by giving their babies weaning food gradually while 1 (0.30) of them placed cotton wool around the nipples.

Mode of Feeding the Infants

Over half 165 (55.0%) of the respondents mainly breast-fed their babies. Forty (13,3%) mainly fed their babies with infant milk formula. Others (95) 31. 7%0 equally fed their babies on breastmilk and infant milk formula.

Methods of Feeding Infants

Over half 2006 (68.7%) of the mothers fed their babies on demand. Fifty-six (18.7%) employed scheduled feeding method. Thirty-eight (12.7%) staled. that the doctors usually made such decisions. Only in 3 (1%) of the cases did grandmothers make the decision.

Sources of Information on Infant Feeding

Over half (162) (54%) of the mothers got information about infant feeding from nurses. Forty-nine 16.3% and 8.7% got from their mothers and doctors

receptivity. Few (8.3%) got from relatives. Other sources of information were books and magazines, 4.3%, radio 1%, and friends, (0.3%).

Feeding Patterns and Nutritional Status of the Infants

The duration of breastfeeding varied greatly. For the infants who stopped breastfeeding at the 4th month, none of them were normal, 10% of them had moderately nutritional status, malnourished and 90% were severely malnourished. Mothers who stopped breastfeeding at the 6th month, 58.8% of their infants were moderately malnourished and 41.2% were severely malnourished. None of them had normal nutritional status. Out of the infants who stopped being breastfed at the 5th month, 60% were moderately malnourished and 40% were severely malnourished. Infants who stopped breastfeeding at the 9th month, 50.9% had normal nutritional status,32.7% were moderately malnourished, and 16.4% were severely malnourished. Out of the infants who stopped breastfeeding at the 10th month, 46.7% of them were normal, 33.3% were moderately malnourished and 20% were severely malnourished. Those who stopped at the 11th month, 50% were normal and50% were moderately malnourished. Mothers who stopped breastfeeding at the 12th month had 96.3% of normal infants, and 3.7% were moderately malnourished infants. All the infants (100%) who stopped breastfeeding at the 15th month, 16th month, 18th month, 19th month and 22nd month were normal infants.

The relationship between duration of breastfeeding and nutritional status using weight by height of the infants is shown in Table 6.

Infants who were predominantly breastfed had 96.9% normal nutritional status and 3.1% of them were moderately malnourished. Infants who were predominantly fed with infant milk formula had 5% of normal infants, 25% of those moderately malnourished, and 70% of severely malnourished infants. Infants who were equally breastfed and fed with infant milk formula had 66.3% of infants with normal nutritional status, 31.5% of them were moderately malnourished and 2.1% were severely malnourished.

How Infants were Fed

For the infants who were fed on demand, 91.3% of them were normal, 7.3% of them were moderately malnourished and 0.9% of them were severely malnourished. Out of the infants who were fed on schedule, 50% were normal, 35.7% were moderately malnourished and 14.3% were severely

malnourished. For infants who were force fed. 21.1% of them were normal, 26.3% of them were moderately malnourished.

Discussion of Findings

The research revealed that over half (57-6%) of the mothers breastfed their babies immediately after birth. Few gave glucose and water. The most frequent reason for breastfeeding was that breastmilk makes a baby to be healthy. This is because breastmilk is rich in nutrients Breastmilk is a complete food for infants from birth to 6^{th} months (ACC/SCN, 2000). All the mothers from urban and rural areas practiced exclusive breastfeeding for up to two months. Few did so for up to three months. Arkutu (1995) advised that every child should be breastfed atleast for the first four months of life. Most of the babies who were mainly breastfed had normal nutritional status. Others who were partly breastfed were severely malnourished. Oladipo (1991) observed that breastfed babies are less sensitive to gastrointestinal infection and are less likely to develop allergic diseases such as asthma than bottlefed babies. Some of the reasons for stopping breastfeeding was that babies were old enough to eat weaning foods, and because of mothers work. An infant who has been exclusively breastfed for up to 4-6months could be given complementary food. After the sixth month breastmilk output is low and will not be enough to satisfy an infant.

Conclusion

The study identified breastfeeding practiceS of mothers and the nutritional status of their infants in Isoko North and South Local Government Areas of Delta State in Nigeria. The mothers only breastfed exclusively for 2 months. Few did so for 3 moNths. These mothers need to be taught the importance of exclusive breastfeeding of their babies up to 6 months. Babies who were mostly breastfed had normal nutritional status. There is need for emphasis for the mothers to be taught to breastfeed their babies for up to one year. Breastfeeding needs to be continued during weaning until a baby ran depend fully on adult food.

Recommendations

There is need to support and encourage mothers to practices exclusive breastfeeding of their babies when at work and other public places.

Campaigns on the promotion of breastfeeding should be organized to sensitive and educate mothers on exclusive breastfeeding.

The advantages of exclusive breastfeeding should be stressed to mothers during antenatal and postnatal clinic programme.

The advantage of breastfeeding should be stressed to mothers. Mothers should practice exclusive breastfeeding of their babies for the first 4^{th} -6^{th} month of life before giving complementary food

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Table 1: Bio-data of the Mothers

Age range of the mothers		**Frequency**	**Percentage**
a)	Below 18 years	-	-
b)	18-24 years	21	7
c)	25-30 years	65	22
d)	36-40 years	49	16
e)	Above 40 years	75	25
Educational Level of the mothers		**Frequency**	**Percentage**
a.	No formal Education	47	15.7
b.	First school leaving certificate	81	2.7
c.	West African School Certificate	86	28.7
d.	Teachers' Grade II Certificate (TTC)	25	8.37
e.	Ordinary Nigerian Diploma (OND)	31	10.3
f.	National Certificate in Education (NCE)	19	6.3
g.	Bachelor of Arts or science (BA/BSC)	11	36
Mother's monthly income		**Frequency**	**Percentage**
a.	Below N10,000	42	14
b.	N10,000-N20,000	55	18.3
c.	N21,000-N30,000	104	34.7
d.	N31,000-N40,000	77	25.7
e.	Above N40,000	22	7.30

Table 2: Reasons for breastfeeding

Reasons	Frequency	Percentage
Breastmilk makes a baby to be healthy.	138	46.0
Breastfeeding is economical	90	30.0
It saves time	44	14.7
Doctors say breastmilk is the best food for a baby	13	4.30
Breastfeeding is convenient	9	3.00
I cannot afford to purchase infant milk formula	3	1.00
Breastmilk is very rich	3	100
Baby likes breastmilk	2	0.66

Table 3A: Exclusive breast feeding of the infants for the first 3 months

Age of residence

The Infants	Urban		Rural	
Months	frequency	%	frequency	%
1	150	100	150	100
2	150	100	150	100
3	129	86	135	90

Table 3: Measures To Improve Breastmilk Secretion

MEASURES	FREQUENCY	PERCENTAGE
Mother drinks milk	95	31.7
Mother drinks palm wine	75	25
Mother drinks corn pap	50	16.7
Mother drinks coconut milk	37	12.8
Mother drinks beverages	11	3.70

Table 4: Reasons for stopping breastfeeding

	Reasons	Frequency	Percentage
A	Baby was old enough to take weaning food	141	47.0
B	Baby rejected breastmilk	63	21.0
C	Because of my work	25	8:30
D	Breastmilk was insufficient for baby	18	6:00
E	Mother was ill	15	5:00
F	Mother went on pills	14	4.70
G	Mother had breast infection	10	3:30
H	On-set of another pregnancy	8	2:70
I	Mother had painful nipples	6	2.00

Table 5: Relationship between duration of breastfeeding and nutritional status using weight by age of the infants and level of nutritional status of the infants

Duration of breastfeeding in months	Total	Normal	%	Moderately malnourished	%	Severely malnourished	%
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	10	-	-	1	10	9	90
5	-	-	-	-	-	-	-
6	17	-	-	10	58.8	7	41.2
7	5	-	-	3	60	2	40
8	-	-	-	-	-	-	-
9	55	28	50.9	18	32.7	9	16.4
10	15	7	46.7	5	33.3	3	20
11	4	2	50	2	50	-	-
12	109	105	96.3	4	3.7	-	-
13	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-
15	35	33	100	-	-	-	-
16	12	12	100	-	-	-	-
17	-	-	-	-	-	-	-
18	8	8	100	-	-	-	-
19	27	27	100	-	-	-	-
20	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-
22	1	1	100	-	-	-	-

Table 6: Relationship between the duration of breastfeeding and nutritional status using weight by height of infants and level of nutritional status of the infants

Duration of breastfeeding in months	Total	Normal	%	Moderately malnourished	%	Severely malnourished	%
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	10	-	-	2	20	8	80
5	-	-	-	-	-	-	-
6	17	-	-	10	58.8	7	41.2
7	5	-	-	3	60	2	40
8	-	-	-	-	-	-	-
9	55	27	49	4	25.5	16	29
10	15	9	60	5	33.3	1	6.7
11	4	3	75	-	-	1	25
12	109	101	92.7	2	1.8	6	5.5
13	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-
15	35	34	97	1	3	-	-
16	12	10	83.3	2	16.7	-	-
17	-	-	-	-	-	-	-
18	8	8	100	-	-	-	-
19	27	26	96.3	-	-	-	-
20	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-
22	1	1	100	-	-	-	-

Table 7: How infants were fed with breastmilk and infant milk formula and its relationship [p with nutritional status using weight by age

	Level of nutritional status of infants						
How infants were fed	Total	Normal	%	Moderately malnourished	%	Severely malnourished	%
Predominantly breastfed	165	160	96.9	6	3.1	-	-
Predominantly fed with infant milk formula	40	2	5	10	2.5	28	70
Equally breastfed and fed with infant milk formula	95	63	66.3	30	31.6	2	2.1

Table 8: How infants were fed

How infants were fed	**Total**	**Level of nutritional status of the infants**					
		Normal	%	Moderately Mal nourished	%	Severely Mal nourished	%
Feeding methods	206	189	91.8	15	7.3	2	0.9
Scheduled feeding	56	28	50	20	35.7	8	14.3
Forced feeding	38	8	21.1	10	26.3	20	52.6