JSR Publications

Available Online

J. Sci. Res. **8** (1), 55-70 (2016)

JOURNAL OF SCIENTIFIC RESEARCH

www.banglajol.info/index.php/JSR

The Pregnant and Lactating Mother's KAP (Knowledge, Attitude and Practice) and Nutritional Care during Antenatal and Postnatal Period in Ukhia, Cox's Bazar, Bangladesh

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Received 30 June 2015, accepted in final revised form 15 September 2015

Abstract

The nutritional status of women before, during and after pregnancy contributes a good deal to their own health and, to the health of their children and other family members. In Bangladesh, there is enormous amount of mother and child death and morbidity related to inadequate nutrition, socioeconomic condition, education level, hygienic condition and various care practices. The study was conducted to see the nutritional KAP (knowledge, attitude and practice) during antenatal and postnatal care of the pregnant and lactating mother in Ukhia Upazilla of Cox's Bazar in Bangladesh among 337 pregnant and lactating mothers who had at least one child aged less than five years old by random sampling in 2010.The antenatal and postnatal care services availability was observed unsatisfactory. The study revealed that the nutritional lacking was not only poverty stricken, but also their poor knowledge, attitude and practice on health, hygiene, reproductive health, antenatal care, post natal care and nutritious food.

Keywords: Maternal health; Pregnancy; Lactation; Antenatal Care; Postnatal Care; KAP.

doi: http://dx.doi.org/10.3329/jsr.v8i1.23951 J. Sci. Res. **8** (1), 55-70 (2016)

1. Introduction

Maternal and child care practices affects women's health and nutrition during pregnancy, child birth, and lactation and the care provided an infant during breastfeeding, weaning and management of childhood diseases [1]. Pregnancy is an anabolic condition that affects the metabolism of all nutrients in order to support maternal homeostasis, fetal growth and development and to prepare for lactation.

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During pregnancy a women's nutritional needs become greater than at other times in her life [2]. Her diet needs to provide all the elements needed for the growth of a fertilized ovum into a viable fetus and baby [3]. The nutritional stores of a lactating woman may already more or less deplete as a result of pregnancy and the loss of blood during childbirth. Lactation raises nutrient needs, mainly because of the loss of nutrients first through colostrum and through breast milk. Traditional beliefs against colostrum feeding deny new born infants essential nutrients and protection against disease [4,5]. Provided that the mother has adequate breast milk, breast feeding alone with no added supplementation is all that is needed for the normal infant during the first six months of life (exclusive breast feeding) where a lactating mother has to continue breast feeding up to two years [6]. This period is very critical for both mother and child. Furthermore, food taboos during pregnancy and lactation can cause serious damage to the health, where any imbalance in this cycle is the cause of malnutrition, morbidity and mortality of both mother and child [7,8].

Addressing maternal health means that all women receive the care for being safe and healthy throughout pregnancy and childbirth. Safe motherhood encompasses social and cultural factors, as well as address health systems and health policy [9]. Indicators used to measure maternal health include skilled attendance at birth, contraceptive prevalence rates and maternal mortality and morbidity [10]. More than half a million women die each year in the world from causes related to pregnancy and childbirth [11]. Motherhood will be safer for women, if they choose to become pregnant and get adequate antenatal care for prevention of pregnancy related complications [12]. Safe motherhood initiates before conception with proper nutrition and a healthy life style and continues with appropriate prenatal care, the prevention of complications when possible, and the early and effective treatment of problems [13-15]. Improving maternal health is one of the eight Millennium Development Goals (MDG), and great efforts have been put forth to achieve that goal. Most maternal deaths in developing countries are preventable through adequate nutrition, proper health care, including access to family planning, the presence of a skilled birth attendant during delivery and emergency obstetric care [16]. Bangladesh being one of the developing countries contributes to more than 155.8 million of the world population out of which about 50% of them are women in the year of 2013-14. Better the status of women in society better is fertility control and reproductive health. So far, the Government of Bangladesh has been implementing various programs in the sectors of maternal health and Bangladesh is on track in terms of reduction of infant and maternal mortality where it achieved total fertility rate per women (15-49) as 2.11, contraceptive prevalence rate (%) as 58.4. and infant mortality rate (per thousand live birth) as 35 in population census, 2011 [17]. However, much work has yet to be done to assure maternal health for women countrywide. For women in developing countries, however, the reality of motherhood is often grim. For these women, Motherhood is often marred by unforeseen complications of pregnancy and childbirth. Some die in the prime period of their lives and in great distress: from hemorrhage, convulsions,

obstructed labor or sever infection after delivery or unsafe abortion. The pregnant and lactating mothers of the southern hilly region of the Bangladesh remain vulnerable to different types of health related problem due to insufficient knowledge, attitude and practice (KAP). So, our objective of this study is to assess the pregnant and lactating mother's KAP on nutrition, antenatal and postnatal care practice in Ukhia, Cox's Bazar, Bangladesh which includes socio economic profile, cleanliness of household and personal hygienic practice, dietary intake pattern and cooking method, antenatal care process, check postnatal care management, identify health facilities during pregnancy and lactation, breast feeding practice to newly born baby, the nutrition status of the mother and the newly born baby and make potential recommendations on the basis of study findings.

2. Experimental

2.1. *Study design*

The study was conducted among 337 pregnant and lactating mothers who have at least one child aged less than five years by random sampling. The investigated area was the nutritional profile, lifestyle, socio-economic condition, health facilities available in their area, antenatal care, postnatal care, colostrum feeding of the neonate and food intake. The sampling units were chosen at random from various places of Ukhia Upazilla under the District of Cox's Bazar, Bangladesh. A total number of 337 mothers were interviewed who had at least one child less than five years old. Information on socio-economic variables, health profile, caring pattern, dietary intake pattern (food frequency and 24 hour recall method), and anthropometry (height, weight, age) of the mothers were recorded on a pretested questionnaire. It was also assessed on breast feeding practices during postnatal care; hygiene and sanitation practices and, morbidity and treatment practices.

2.2. *Study location and time frame*

The survey was conducted from 10-14th March, 2010 at Ukhia Upazilla of Cox's Bazar, Bangladesh.

2.3. *Statistical analysis*

After rechecking all data, they were analyzed using PC, SPSS software package. Descriptive studies (frequencies, descriptive, cross tabs) and compare means were used to calculate all variables. Values were expressed as percentage, mean and standard deviation (SD).

3. Results and Discussions

The findings of the study are presented in seven sections [18]. The first section deals with the socio-economic profile of the studied population (Tables 1-3). The second section provides information about mother's environmental sanitation and hygiene (Table 4). The third section gives a vivid picture about their cooking method and hygiene during cooking (Table 5). The fourth section provides various information about pregnant mother delivery place and assistance, personal hygiene, family planning status, pregnancy complications, vaccination profiling, and delivery type's etc. (Tables 6-8). The fifth section provides data about food intake during pregnancy (Tables 9, 10). The sixth section provides information about mother's BMI (body mass index) (Table 11) and the seventh section gives the information about mother's knowledge on balance diet, various diet related diseases and postnatal care practice behavior (Tables 12-14).

Table 1. Age distribution of the targeted mothers and fathers.

Parameters	Frequency	Percentage	Mean ± SD
Age of father			
≤29	49	14.5	24.91±2.73
29.01-38	98	29	33.50±2.82
38.01-47	94	28.1	43.11±2.71
47.01-55	52	15.4	51.44±2.45
≥55.01	44	13	65.17±8.30
Total	337	100	41.85±12.74
Age of mother			
≤25	95	28.30	22.31±2.93
25.01-35	134	39.62	30.46±3.02
35.01-45	82	24.53	40.60±3.08
45.01-55	18	5.35	50.71±3.04
≥55.01	8	2.20	67.14±10.49
Total	337	100	32.54±10.12

Marriage in most Asian societies defines the onset of the socially acceptable time for childbearing. Women who marry early will have, on average, a longer period of exposure to pregnancy, often leading to a higher number of children ever born. The onset of childbearing at early age has a direct effect on mother's health. Now a day's women employment and education is the main cause for rising the mean age of marriage (Table 1). Our study showed that around 28% mother's age is less than or equal to 25 years. Mean age of marriage was less than 18 years (Table 1).

Table 2. Distribution of the targeted mothers by their socio-economic profile.

Parameters	Frequency	Percentage
Father's education		
≤ Class 5	72	31
Class (6-8)	39	12
Class (9-10)	25	7
Class ≥11	201	60

Parameters	Frequency	Percentage
Total	337	100
Father's occupation		
Farmer	36	10.8
Rickshaw puller	30	9
Driver	26	7.7
Business	95	28.1
Unemployed	15	4.3
Others	135	40.1
Total	337	100
Mother education level		
≤ Class 5	59	3.9
Class (6-8)	28	3.1
Class (9-10)	33	4.7
Class ≥11	217	88.3
Total	337	100
Mothers occupation		
Housewife	299	89.03
Others	38	10.97
Total	337	100
Monthly capita household income		
≤2500	16	4.70
2501-5000	107	31.8
5001-7500	85	25.2
7501-10000	56	16.6
>10000	73	21.7
Total	337	100

Maternal education level was classified into four groups- finished their primary level, secondary level, higher secondary level and highly educated. Around 88% mother read more than class 11.

Among the mothers, 89% were housewives. On the other hand, farmers, businessmen, rickshaw puller and drivers were the major occupation of the fathers (Table 2).

When the women were grouped on the basis of their per capita income, most of them come from the families where the per capita income was between Taka 2501-5000 (Table 2).

Table 3. Distribution of per capita expenditure for basic human needs.

Expenditure sectors	Per capita expenditure in Taka	Percentage of total expenditure
Food	964.30	64.45
Education	133.94	8.95
Medicine	107.38	7.18
Transport	76.00	5.08
Housing	15.15	1.01
Clothes	129.19	8.64
Others	70.18	4.69

Study reveals that most of the family income was expensed in food and education. Other major contributors of expenses were medicine and clothing. Most of the family owns their own house, so expense in housing was low (Table 3).

Table 4. Distribution of mothers by their environmental hygiene and sanitation.

Parameters	Frequency	Percentage
Types of houses		
Concrete	16	4.7
Tin shaded	48	14.2
All tin+floor concrete	6	1.8
All tin+Muddy floor	3	0.9
All tin+soil wall	102	30.3
Straw roof+soil wall	134	39.8
Straw roof+bamboo/straw wall	18	5.3
Others	10	3
Total	337	100
Kitchen status		
Yes	251	74.5
No	86	25.5
Total	337	100
Source of drinking water		
Tube-well	335	99.4
Well	2	0.6
Total	337	100
Source of cooking water		
Tube-well	334	99.11
Well	2	0.6
Pond	1	0.3
River		
Boiling of river's water		
Total	337	100
Place of garbage disposal		
Separate pit/place	162	48.1
Surrounding of the house	166	49.3
Here and there	4	1.2
Total	337	100
Types of toilet used		
Don't have latrine	25	7.4
Open latrine	35	10.4
Separate pit	105	31.2
Sanitary latrine	170	50.4
Others	2	0.6
Total	337	100
Use of slippers during latrine use		
Yes	168	49.9
No	169	50.1
Total	337	100
Washing hand before eating		
All times	287	85.2
Sometimes	36	10.7
No	14	4.2
Total	337	100

Housing characteristics of survey respondents showed that in Ukhia (Bangladesh) 41% households had access to electricity, whereas in urban areas situation was much better. Among the study population, 74.5% had their own kitchen (Table 4).

Information on household sources of drinking water is important because of fatal diseases, including typhoid, cholera and dysentery, are predominant in unprotected water sources. Our study showed that about 99.11% households drink tube-well water (Table 4).

Access to adequate sanitation facilities is an important determinant of health conditions. Our study showed that 50.4% households use sanitary latrine (Table 4).

Forty-eight percent of the households disposed of their garbage at specific place outside house, whereas 49.3% disposed of their garbage in the surrounding of the house. About 50% of the household members did not use slippers during passing dirt or toilet. Eighty five percent of households washed their hand before eating (Table 4).

Table 5. Distribution of mother's according to their cooking method and their hygiene during cooking.

Parameters	Frequency	Percentage
Place of eating food		
Kitchen	181	54.3
In the yard on the mat	81	24
Bed/table/chair	61	18.1
Others	13	3.9
Total	337	100
Covering of food after cooking		
Yes	327	97
No	5	1.5
Sometimes	5	1.5
Total	337	100
Eating unveil and waste food		
Yes	187	55.5
No	150	44.5
Total	337	100
Cleaning of hand, cooking utensils before cooking		
Yes	335	99.4
No	2	0.6
Total	337	100
Use of gruel		
Never give it up	234	69.44
Feed to the children	8	2.4
Feed to the cattle	17	5.0
Discard it	74	22
Others	4	1.2
Total	337	100
Cleaning of vegetables before cooking		
Make small part+wash with water	163	48.4
Raw wash+then cut	121	35.9
Use both process	53	15.7
Total	337	100

Parameters	Frequency	Percentage
Discard water after boiling vegetables		
Yes	115	34.1
No	222	65.9
Total	337	100
Use of oil during cooking leafy vegetables		
Yes	322	95.6
No	1	0.3
Sometimes	14	4.2
Total	337	100
Lidding of vegetables during cooking		
Yes	321	95.3
No	16	4.7
Total	337	100
Use of salt		
Packet salt	140	41.5
Open salt	182	54
Both (Packet+Open)	15	4.5
Total	337	100
Storage of salt		
Open	16	4.7
Covered pot	299	88.7
Open pot	22	6.5
Total	337	100

Among the respondent 55.5% were found to consume unveil food, 48.4% washed vegetables after chopping it. 95.6% used oil during cooking leafy vegetables, 41.5% used iodized salt during cooking, 54% used open salt and 88.7% covered their salt during storing. 69.44% did not discard their rice gruel; only 2.4% fed it to the children and 5% to the cattle (Table 5).

Table 6. Distribution of targeted mother's by health service facilities in their locality and adoption of family planning.

Parameters	Frequency	Percentage
Types of health service providing organization		
Govt. hospital	94	27.9
Private clinic	5	1.5
NGO clinic	53	15.7
Union FWV Centre	20	5.9
TBA/Pregenitrix	19	5.6
MBBS doctor	73	21.7
Paramedics/ Asst. health worker	37	11
Others	36	10.7
Total	337	100
Family planning practices		
Yes	208	61.7
No	129	38.3
Total	337	100

Results indicated that the maximum (28%) available health service providers in locality were the Government hospitals (Table 6).

Sixty two percent women adopted family planning practices; on the other hand, about 38% did not (Table 6).

Table 7. Distribution of mother's by their adoption of antenatal checks.

Parameters	Frequency	Percentage
Times of antenatal checkup visit		
Less than 3	109	32.3
More than 3	106	31.5
Never ever	47	13.9
3 times	5	1.5
Can't recognized	12	3.6
Not applicable	58	17.2
Total	337	100
Reason of refusing antenatal checks		
Didn't feel necessary	88	26.1
Family obligations	15	4.5
Transport problem	7	2.1
Lack of facilities	37	11
Not applicable	178	52.8
No knowledge	5	1.4
Others	7	2.1
Total	337	100
TT vaccination status		
Yes	279	82.8
No	58	17.2
Total	337	100
Iron tablet intake status		
Yes	224	66.5
No	113	33.5
Total	337	100
Folic acid tablet intake status		
Yes	65	19.3
No	246	73
Don't understand	21	6.2
Never hear	5	1.5
Total	337	100

Antenatal care coverage increased sharply in these years but our study showed that only 1.5% mother sought three antenatal checkups, 32.3% taken less than 3 and about 14% did not ever go for checkups because of that they did not feel its necessity. Among the studied mother, 82.8% completed their TT vaccination timely and 17.2% had not taken vaccine at all (Table 7).

Data showed that 66.5% mothers had taken iron tablets during pregnancy. On the other hand, only 19.3% had taken folic acid tablet (Table 7).

The study revealed that about 90% delivery occurred at home and among them about 96% infants were live and well. About 62% mother's delivery attendance was done by Temporary Birth Attendant (TBA), only 3% mothers faced surgery during

delivery, 44% mothers faced no problem during pregnancy and around 45% women married at the age of 16-18 years(Table 8).

Table 8. Distribution of mothers by delivery mode, place, assistance and cooperation.

Parameters	Frequency	Percentage
Birth condition of the child		
Live and well	323	95.8
Died	5	1.5
Ill	9	2.7
Total	337	100
Place of child delivery		
Home	302	89.6
Hospital	25	7.4
Clinic	6	1.8
UPHCC	4	1.2
Total	337	100
Attendance at delivery		
Docter	38	11.3
TBA/ pergenitrix	208	61.7
Relatives/neighbor	88	26.1
No one	3	0.9
Total	337	100
Types of delivery		
Normal	327	97
Surgery	10	3
Total	337	100
Birth weight of the newborn		
≤2.49	12	3.6
2.5-3.5	40	11.9
≥3.6	244	72.4
Don't know	41	12.7
Total	337	100
Health complications faced during pregnancy		
Edema	52	15.4
Convulsion	7	2.1
High pressure	1	0.3
Urinary Tract Inflammation	3	0.9
Pain in the lower abdomen	53	15.7
Pain in the upper abdomen	5	1.5
Coughing	3	0.9
Bleeding	1	0.3
Vomiting	52	15.4
Others	9	2.7
No problem	150	44.4
Total	337	100
Cooperation received from husband		
Good	202	60
Average	117	34.8
Bad	15	4
Very bad	6	1.2
Total	337	100
Cooperation received from the family members		

Parameters	Frequency	Percentage
Good	190	61.6
Average	101	30.2
Bad	17	4.9
Very bad	9	2.4
Not applicable	20	6.1
Total	337	100
Mothers age at marriage		
<16	125	37.10
16-18	150	44.51
>18	62	18.39
Total	337	100

Table 9. Distribution of mothers by food intake during pregnancy.

Parameters	Frequency	Percentage
Amount of food consumed		
More than normal	81	24
Less than normal	163	48.4
Same as before	82	24.3
As before but selective	2	0.6
Not applicable	9	2.7
Total	337	100
The food intake pattern in case of excess consumption		
Large amount in 1 time	25	7.4
Greater amount in every times	44	13.1
Frequently but small amount	48	14.2
Others	16	4.7
Not applicable	204	60.5
Total	337	100
Food insufficiency faced		
Yes	142	42.1
No	195	57.9
Total	337	100

Among the study population, 24% mother's took more than average food during their pregnancy, on the contrary, 48.5% women consumed less than normal during the period of pregnancy and 24.3% took same amount of food as before (Table 9).

Among 24% of the women took food more than average, about 7.4% took large amount in one time. 13.1% took greater amount in every time. 14.2% took frequently but small amount (Table 9).

Table 10. Weekly food consumption pattern (mean days ± SD).

Food source	Morning	Noon	Night
Plant source			
Rice	6.63 ±1.14	7.17±3.44	7.18±3.44
Bread	3.84±2.05	5.67±2.31	4.38±2.86
Leafy vegetables	3.98±1.97	4.16±1.90	3.98±1.99
Non leafy veg.	4.99±2.02	5.02±1.99	5.00±2.82

Food source	Morning	Noon	Night
Fruits	3.26±2.35	3.09±1.94	2.73±1.91
Dal	2.79±1.92	2.39±2.02	2.68±1.70
Animal source			
Fish	4.02±2.17	4.31±2.35	4.18±2.02
Meat	1.53±1.07	1.81±1.24	1.69±1.04
Egg	2.70±.94	2.41±1.61	2.34±1.52
Milk	3.75±2.54	4.03±2.62	3.81±2.50
Milk products	4.50±3.50	2.57±2.25	2.20±1.10

The dietary pattern of the mother's showed that in classification of food group, mothers were not regular in consuming body protective food like fruits and leafy vegetables, and moderate intake of non-leafy vegetables were found. Therefore, there must be a scope of micronutrient deficiency disease. The study respondents were used to consume very less frequently the body building foods, like animal and vegetable protein. They used to consume fish and meat at a ratio of 1 or 2 times per week. Besides this, egg consumption was not regular. They consumed pulse (dal) on average 2 or 3 times per week. Milk and milk product consumption pattern was not meeting the acceptable daily intake properly (Table 10).

Table 11. Distribution of mother's by BMI.

Parameters	Frequency	Percentage
Mother's BMI		
<18.5	71	21
18.5-25	200	59.6
25-30	55	16.3
>30	11	3.1
Total	337	100

Study showed that among the mothers 59.6% women's nutritional status were in normal range by BMI classification, where we found 21% women were malnourished, 16.3% women were overweight and around 3% women were obese (Table 11).

Table 12. Distribution of mother's by their knowledge about balance diet and different common disease related to hygiene and nutrition.

Parameters	Frequency	Percentage
Knowledge about balance diet		
Knew	107	31.8
Don't know	230	68.3
Total	337	100
Knowledge about protective food		
Knew	122	36.2
Don't know	215	63.8
Total	337	100
Etiology of night blindness		
Knew	129	38.2
Don't know	208	61.8
Total	337	100

Parameters	Frequency	Percentage
Etiology of diarrhea		
Knew	241	71.8
Don't know	96	28.2
Total	337	100
Knowledge about VAC (Vitamin-A capsule)		
Knew	219	65
Don't know	118	35
Total	337	100

The study showed that among the mothers, around 68% women did not have any idea about balanced diet. Only 36.2% women knew about protective food. Thirty eight, seventy two and sixty five were the percentage of knowledge about etiology of night blindness, diarrhea and VAC (vitamin-A capsule), respectively (Table 12).

Table 13. Distribution of mother's by their knowledge about the food sources to prevent diet related disease.

Parameters	Frequency	Percentage
Food sources to prevent Night Blindness		
Correctly knows	126	37.4
Don't know	211	62.6
Total	337	100
Food sources to prevent Anemia		
Correctly knows	33	9.8
Don't know	304	90.2
Total	337	100
Food sources to prevent Goiter		
Correctly knows	110	32.6
Don't know	227	67.4
Total	337	100

The study revealed that around 62% women did not correctly know about food sources to prevent night blindness. Only 9.8% mothers knew about food sources to prevent anemia and 67.4% did not know about the food sources to prevent goiter (Table 13).

Table 14. Distribution of mother's by postnatal care.

Parameters	Frequency	Percentage
Mother's desire for continuing exclusive breast feeding		
Less than 6 months	37	11
Six months	125	37
Greater than 6 months	91	27
Two years	39	11.7
Until the child reject	25	7.4
Others	20	6
Total	337	100
Mother's desire of continuing breast feeding		
Less than two years	225	66.8
Two years	14	4.2

Parameters	Frequency	Percentage
More than two years	98	29
Total	337	100
Reasons of rejection breast feeding		
Child don't get breast milk	60	17.8
Don't want to eat	6	1.8
Mother don't like to feed	3	0.9
Due to the figure concern	3	0.9
Others	8	2.4
Not applicable	257	76.2
Total	337	100
Procedure of initiation of complimentary feeding		
Gradually	244	74.8
Abruptly	93	25.2
Total	337	100
Types of complimentary food		
Home made	279	82.8
Canned food	14	4.2
Others	44	13
Total	337	100

Study showed that 37% mothers exclusively breast feed their children for six months. Around 67% mother desired to continue breast feed their baby for less than 2 years. Around 19% rejected breast milk earlier due to less availability of milk. About 75% initiated complimentary feeding gradually and approximately 83% used homemade food as complimentary food (Table 14).

4. Conclusion

The findings of the study are a matter of concern. The study populations is not only poverty stricken, but also their knowledge is poor. Most of them have less than adequate knowledge on health, hygiene, reproductive health, antenatal care, post natal care, nutrition and nutritious food to lead a healthy and active life. Food taboos during pregnancy and lactation in the study area can cause serious damage to the health of mother and child. Their traditional beliefs against colostrum feeding deny new born infants essential nutrients and protection against disease. Newborn survival is inextricably linked to the health of the mother. About 80% of all married women got married before the age 18. There are 21% women below the normal level of BMI. There is virtually absence of any education on reproductive health and consequence of childhood marriage. The antenatal and postnatal care services availability is not yet satisfactory. Many women are yet now not able to take antenatal visit due to lack of scope and poor transport facilities, and even some women don't feel the necessity of antenatal care. Even now there is not available health service in every locality and in some areas, the provisions of this service providers failed to attain the satisfaction. About 90% of delivery is done by TBA. Among 16% women suffer from pain in lower abdomen, about 15% women suffer by edema, about 15% women suffer from

vomiting and 44% women have no problem. Only 24% women are concern about extra food during pregnancy. 17.2% Women are not in the complete coverage of TT vaccine. Only 66.5% women are taking more than 150 iron tablets during their pregnancy period. About 19% women are taking folic acid tablets. About 65% women are known about VAC. Only 38% know about the causes of Night blindness.

Besides these, we can see that their family food security was not enough. From food frequency table, we saw that their animal protein and fat consumption was very low. Moreover, intra-family misdistribution is found. In most poor socio-economic society, the family heads obtain the major portion of food and then remaining of the food is distributed to children and other older family members and then the rest for mothers. But mothers should get the first priority. So, they get malnourished and gives birth LBW (low birth-weight baby) baby. These LBW baby are more prone to obesity in their future life.

In order to simplify analysis at this level, the underlying causes may be grouped into three main clusters: basic health services and a health environment, household food security and knowledge about nutrition. Household food security (adequate access by the household to amounts of food of the right quality to satisfy the dietary needs of all its members throughout the year) requires special attention where we found that mothers were at high risk of food insecurity.

Inadequate or improper knowledge of mothers regarding nutrition and health was another reason behind the poor birth outcome. The poor level of knowledge leads to wrong attitude and practices as well.

In pregnancy, the kind of family treatment was available for the mothers, their food pattern, resting schedule, immunization, iron tablet consumption, health services, and pre-natal checkups were insufficient. These entire things did affect the safety of pregnancy and survival of the newborn.

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