Anthropometric measurement of nutritional status of pregnant women following dietary assessment attending in Hospitals of Dhaka City.

Submitted to:
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Submitted by:
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Date of Submission: 20/12/2018

LETTER OF TRANSMITTAL

Date: 20/12/2018

Dr. Md. Bellal Hossain
Professor & Head
Department of Nutrition and Food Engineering
Faculty of Allied Health Sciences (FAHS)
Daffodil International University

Subject: Submission of project work report.

Dear Sir,

It is a great pleasure and honor for me to have the opportunity to submit my project work report on Anthropometric measurements of nutritional status of illiterate pregnant women following dietary assessment attending in hospitals of Dhaka city.

I have prepared this report based on the acquired taste knowledge during my Project Period. It is great achievement to work. Without your help, this report would have been impossible to complete. This report is based on, "Anthropometric measurements of nutritional status of illiterate pregnant women following dietary assessment attending in hospitals of Dhaka city." I have got the opportunity to work in your University under the supervision of Fouzia Akter, Senior Lecturer.

I, therefore, request and expect that you will appreciate me with any sort of recommendation and valued suggestion and will cordially receive this report for your kind assessment.

Sincerely Yours,

Mishu Ruram
151-34-346
Department of NFE
Daffodil International University

Letter of Authorization

December 20, 2018
Dr. Md. Bellal Hossain
Professor & Head
Department of Nutrition and Food Engineering
Faculty of Allied Health Sciences (FAHS)
Daffodil International University

Subject: Declaration regarding the validity of the Project Report.

Dear Sir,

This is my truthful declaration that the **"Project Report"** I have prepared is not a copy of any Project Report previously made by any other students.

I also express my honest confirmation in support to the fact that the said Internship report has neither been used before to fulfill my other course related nor it will be submitted to any other person in future.

Yours Sincerely,
Mishu Ruram
ID: 151-34-346

CERTIFICATION OF APPROVAL

I do hereby declare that the project report entitled **“**.Anthropometric measurement of nutritional status of pregnant women following dietary assessment attending in Hospitals of Dhaka City’’ is a record of original work carried out by me under the supervision of **Fouzia Akter,** Senior Lecturer, Department of Nutrition and Food Engineering, Daffodil International University, Dhaka-1207, Bangladesh. This project work or any part thereof has not been submitted elsewhere for the award of any degree, diploma, associate ship or fellowship.

……
Dr. Md. Bellal Hossain

Professor & Head

Department of NFE
Faculty of Allied Health
Sciences (FAHS)
Daffodil International University

Dhaka.

……
Fouzia Akter

Senior Lecturer

Supervisor
Department of NFE
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Daffodil International University,

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Acknowledgement

I would like to express my sincere gratitude and appreciation to fouzia akter, project supervision, for providing me with the wonderful guidelines to work in the research area of MCTHI. Again my wishes for her expert guidance and mentorship, patience, understanding, support and encouragement at all levels to complete internship works through the dissertation for under graduation program.

My special thanks to Dr.Taherul Islam khan sir for providing me with the wonderful guidelines to work in the research area of MCTHI. Without her help, support and supervision it would not be possible to complete my project.

Lastly, I would like to extend my sincere thanks of this dissertation to my parents for unlimited love support, their encouragement during the bad times and their enthusiasm during the good times gave me constant inspirations in future life.

Abstract

Bangladesh is a developing also a populated country about 158 million people live in the country. Most of the people about 72 percent live in rural areas. 35 percent of the respondent live in Dhaka city. In developing countries facing many problem over there because there are most of the people are illiterate also they are poor. Anthropometric measurement of nutritional status of pregnant women following attending in hospitals of Dhaka city. Hospital based descriptive cross-sectional study among pregnant mother. Data were collected by face to face interview.

Data collection was done at Maternal and Child Health Training Institute, Azimpur. Anthropometric indicators revealed into their current nutritional status and in pregnancy period it changes very rapidly. In this study 56.7% of pregnant women are normal weight, 30.0% of pregnant women are overweight and 5% and 6.7 % are obese and underweight pregnant women. Dietary assessment are more affected on pregnant women for their fetus growth. There are 76.1% of pregnant women are intake meat (beef, chicken, liver) and 65.97% pregnant women consumed fish (bual, magur, shing, panggas, kachki, hilsa) , 51.5% consumed milk and milk products, 80% pregnant women consumed eggs, 84% are consumed vegetables, 77% are consumed fruits. Most of them BMI range are normal weight, so that's why p value is not significant but they are positively and negatively correlated.

KEYWORDS: Anthropometric measurements, nutritional status, height, weight, nutrition services, socio-economic condition, food frequency, pregnant women.

Chapter -1

Title: Anthropometric measurement of nutritional status of pregnant women following dietary assessment attending in hospitals of Dhaka city.

Background: Bangladesh is a developing also a populated country about 158 million people live in the country. Now a days 94 percent women are currently married. Most of the people about 72 percent live in rural areas. 35 percent of the respondent live in Dhaka city. In developing countries many problem over there because there are most of the people are illiterate also they are poor. That's why they cannot take afford good things good food.it is highly effecting on the woman. Because of poverty they are doing early marriage also they become pregnant. But they don't have enough nutrition also their height weight is low for their food habits and poverty.

Many developing countries also our country has major problem of low birth weight child of small amount of nutritional food during the third trimester of pregnancy. It causes many nutritional diseases of awaited child.

Anthropometric measurement of nutritional status is important for all types of human being for their dietary assessment specially the pregnant women. Anthropometric measurements are height, weight, BMI, etc. BMI (Body Mass Index) gives an indication of the body measurement e.g thinness, overweight and obesity of the human. [1]Specially taken the pregnant women (BMI= weight (kilograms)/Height. Height (meters)) and used to represent to the nutritional status of pregnant women. By normalizing the weights of individuals in opposition to their heights, nutritional status indicators based on BMI are useful in detecting acute malnutrition, acute malnutrition could be occurred to pregnant women.

There are only measures of the pregnant women height and weight with her most awaited baby to know their perfect bodyweight. Because pregnant women of attention hospitals in Dhaka city anthropometric measurements based on the (e.g. BMI) dietary assessment. It also measures are used to estimate the proportion of the overweight or obese pregnant women and thereby at greater risk for non- communicable or communicable diseases.

For pregnant women its anthropometric measurement of nutritional status for dietary assessment of pregnant women is much needed. Our purpose to investigate the food habits of pregnant women following dietary assessment attending in hospitals of Dhaka city, to assess their nutritional status to determine their socio- economic and practice. To assess the food taboos.[2] To capture the health and nutritional situation of Dhaka city women of reproductive age, we need to collects data on their dietary habits and measures their height, weight, and MUAC. In developing countries peoples much not have idea about their nutritional status and healthy nutritious food consumption. By measuring their height weight for their dietary assessment. Dietary diversity provide a means of documenting food purchasing at the household level, and capturing the quality of diet in terms of micro and macronutrients content, and the number of different food groups consumed.[3]Food

security at the household and intra hold level dietary assessment makes it possible to examine.[4]

National very low quantities of women consumed and inadequately diverse diet. But this rate large for rural areas women. Dietary diversity is directly conducted with their height. An important health indicator of nutritional status to assess a human's morbidity pattern.

The most vulnerable nutritional impairment are the pregnant women. They are most vulnerable, because they are proportionately nutritional higher requirements and the effects of malnutrition are severe and long lasting. Adequate nutritional status of pregnant women is essential for their health and pregnancy outcome. Due to increased nutritional requirements pregnancy is a critical period for meeting the body demand for macro and micro nutrient. For pregnant women anemia and vitamin A deficiency are highly prevalent nutrient affecting 53.8 million (55.8 %) and 7.2 million (6.8 %) on a global scale, respectively. Both deficiencies to result in serious health consequences including increased morbidity and mortality of both mother and child.

There are most of the mothers is underweight. They don't know their nutritional status, and also their BMI is so low. That's why I decided take their anthropometric measurement and dietary assessment. In developing countries most of the pregnant women suffering many diseases but common factor is most of the mother are underweight. Most of the pregnant women come into the government hospital because their economic condition is not good. That's why most of pregnant women suffering nutritional diseases.

Chapter-2

2.0: General objective

- Anthropometric measurement of nutritional status for pregnant women following dietary assessment attending in the hospitals of Dhaka city.

2.1: Objectives:

- The study to measures of pregnant women height weight for their dietary assessment.
- To assess the adequate nutritional status is essential for their health maintenance and nutritional situation.
- To assess the food consumption pattern and micronutrient and macronutrient intakes of pregnant women.
- To investigate the food habits and taboos of pregnant women.
- To assess the improvement of the anthropometric measurements of pregnant women.

Chapter-3

3.0: Method and materials

Study design: Hospital based descriptive cross-sectional study among pregnant mother. Data were collected by face to face interview**.**

Study period: December 1th to 15th, 2018

Study area: Data collection was done at Maternal and Child Health Training Institute, Azimpur.

Sampling: random sampling was used to perform survey. Total 60 respondents were interviewed for the quantitative data, where everyone was pregnant, some were adult some were teenage some are mother was normal weight, overweight also underweight. Because their dietary assessment was not good and also their BMI was very low. But most of the BMI was normal.

3.1: Data collection methods:

- Quantitative and observation data was largely used for situation analysis. There were collected quantitative data by face-to face interview using semi structure questionnaires and observations data were collected by using a standard pretested observation list.
- Invited to attend the study on a pre-arranged date, after received consent from subject, data were collected through a self-reported information questionnaire.
- Need some assessment for data collection such as. Height, weight, blood group, blood pressure also their weekly dietary assessment. These were used for the data collection.
- Data was collected from 100 pregnant women and asses the adequate status which is essential for pregnant women.
- This study was done cross conducted between 1 to 15th December 2018, at mohammadpur fertility center services and training center and maternal and child health training institute azimpur.
- It was conducted by a paper questionnaire where included their personal information, educational status, occupation, nutritional status, antenatal checkup report also food frequency.
- After collected data entered these data and analyzed by using SPSS IBM statistics 25 version.

3.2: Data collection tools:

Paper questionnaire were used for raw data collection. Measuring tape and height board, weighing machine were used also. Filled in questionnaires were enters into a data entry screen SPSS and also analyze the parameters. The sampling unit of the system was pregnant women.

3.3: Anthropometric measurements:

A portable weighing scale were used for measure the weight for pregnant women and to measure the height was used the height board. All anthropometric measurements were performed based on WHO guidelines.

4.0: Result:

How many pregnant women are within, below or above normal BMI range?

Table 1: **Below or above and normal BMI range of illiterate pregnant women who were attending in the ANC at MCHTL**

Nutritional status (BMI)	Frequency	percent	Valid percent	Cumulative percent
Underweight: (BMI is less than 18.5)	4	6.7	6.8	6.8
Normal weight: (BMI is 18.5 to 24.9)	34	56.7	57.6	64.4
Overweight: (BMI is 25 to 29.9)	18	30.0	30.5	94.9
Obese: (BMI is 30 or more)	3	5.0	5.1	100.0

Table 2: **Correlation among nutritional status (BMI), weight and height**

	Nutritional status (BMI)	Weight in kg	Height in cm
Pearson correlation	1	.711**	-.326
Sig. (1-tailed)		.000	.006

Correlation is significant at the 0.01 level, correlation is significant at the 0.05 level.

Table 3: Correlation between nutritional status and socio-economic condition

Nutritional status(BMI)	occupation	Occupation of husbands	Earning member	Home	condition	Family Member
(Pearson correlation) 1	-.066	-.058	-.093	-.190	-.251	104
Sig.(1-tailed)	.311	.332	.241	.075	.028	.217

Table 4: Income frequency (monthly)

Income	Frequency	Percent	Valid percent	Cumulative percent
5k-10k taka	5	8.3	8.3	8.3
11k-20k taka	26	43.3	43.3	51.7
21k-30k taka	25	41.7	41.7	93.3
31k-50k taka	4	6.7	6.7	100

Table 5: correlation between nutritional status and nutrition services who were attending in the ANC at MCHTI.

	Nutritional status (BMI)	First antenatal checkup	Total checkup
Pearson correlation	1	-.106	.130
Sig.(1-tailed)		.213	.164

Table 6.0: correlation between nutritional status and Food meat

	Nutritional status (BMI)	Beef	Chicken	liver
Pearson correlation	1	-.102	.-052	.202
Sig. (1-tailed)		.220	.348	.062

Table 6.1: Correlation between nutritional status and fish who were attending in the ANC at MCHTI

	Nutritional status (BMI)	Fish	hilsa	kachki	shing	magur	paggas	bual
Pearson correlation	1	.110	-.077	-.042	.-062	.030	-.074	-.041
Sig.(1-tailed)		.204	,281	.376	.320	.411	.288	.378

Table 6.2: Correlation between nutritional status and Cereals:

	Nutritional status	porota	Suji	Chatu	corn
Pearson correlation	1	-.066	-.207	.279	-.077
Sig.(1-tailed)		.309	.058	.016	.281

Table 6.3: Correlation between Nutritional status and Egg:

	Nutritional status (BMI)	Eggs
Pearson correlation	1	.058
Sig.(1-tailed)		.332

Table 6.4: correlation between nutritional status and Milk.

Variables are positively and negatively correlated with nutritional status.

	Nutritional status	Milk	Yogurt
Pearson correlation	1	-.006	.108
Sig.(1-tailed)		.481	.207

Table 6.5: correlation between nutritional status and Fruits:

Variables (apple, orange, hogplum, berries, coconut, and banana) are negatively and positively correlated with nutritional status. Below some fruits groups.

	Nutritional status (BMI)	Apple	Orange	Hogplum	Berries	Coconut	Banana
Pearson correlation	1	-.159	.174	-.091	-.060	.008	.117
Sig.(1-tailed)		.115	.094	.246	.327	.475	.189

Table 6.6: correlation between nutritional status and Vegetables:

Variables (cauliflower, cabbage, carrot, spinach, lentils, pulses) are positively and negatively correlated with nutritional status. Below some vegetables which are correlate with nutritional status.

	Nutritional status (BMI)	cauliflower	cabbage	carrot	spinach	lentils	pulses
Pearson correlation	1	-.198	-.066	.041	.066	-.062	-.066
Sig. (1-tailed)		.067	.309	.380	.310	.320	.309

Table: Frequency:

Table 7.0: Frequency of Beef

Questionnaire	Frequency	Percent
Yes	46	76.7
No	14	23.3

Table 7.1: Frequency of Chicken

Questionnaire	Frequency	percent
Yes	52	86.7
No	8	13.3

Table 7.2: Frequency of Liver

questionnaire	Frequency	percent
Yes	39	65
No	21	35

Table 7.3: Frequency of Fish

questionnaire	Frequency	percent
Yes	44	73.3
No	16	26

Table 7.4: Frequency of Hilsa

questionnaire	frequency	percent
Yes	40	66.7
No	20	33.3

Table 7.5: Frequency of Kachki

questionnaire	frequency	percent
Yes	43	71.7
No	17	28.3

Table 7.6: Frequency of Shing

questionnaire	frequency	Percent
Yes	45	75
No	15	25

Table 7.7: Frequency of Magur

questionnaire	frequency	percent
Yes	40	66.7
No	20	33.3

Table 7.8: Frequency of panggas

questionnaire	frequency	percent
Yes	34	56.7
No	26	43.3

Table 7.9: Frequency of Bual

questionnaire	Frequency	percent
Yes	31	51.7
No	29	48.3

Table 7.10: Frequency of Bread

Questionnaire	Frequency	percent
Yes	48	80
No	12	20

Table 7.11: Frequency of Biscuits

questionnaire	Frequency	percent
Yes	52	86.7
No	8	13.3

Table 7.12: Frequency of Puffrice

Questionnaire	Frequency	Percent
Yes	49	81.7
No	11	18.3

Table: 7.13: Frequency of Chira

Questionnaire	Frequency	percent
Yes	44	73.3
No	16	26.7

Table 7.14: Frequency of Chanachur

questionnaire	frequency	percent
Yes	52	86.7
No	8	13.3

Table 7.15: Frequency of Porota

questionnaire	frequency	percent
Yes	48	80
No	12	20

Table 7.16: Frequency of Suji

questionnaire	frequency	percent
Yes	43	71.7
No	17	28.3

Table 7.17: Frequency of Chatu

questionnaire	frequency	percent
Yes	34	56.7
No	26	43.3

Table 7.18: Frequency of Corn

questionnaire	frequency	percent
Yes	41	68.3
No	19	31.7

Table 7.19: Frequency of Milk

questionnaire	frequency	percent
yes	38	63.3
no	22	36.7

Table 7.20: Frequency of Yogurt

Questionnaire	frequency	percent
yes	24	40
no	36	60

Table 7.21: Frequency of Eggs

questionnaire	frequency	percent
yes	48	80
no	12	20

Table 7.22: Frequency of Apple

questionnaire	Frequency	percent
yes	50	83.3
no	10	16.7

Table 7.23: Frequency of Orange

questionnaire	Frequency	percent
yes	50	83.3
no	10	16.7

Table 7.25: Frequency of Hogplum

questionnaire	**Frequency**	**percent**
yes	**34**	**56.7**
no	**26**	**43.3**

Table 7.26: Frequency of Berries

questionnaire	frequency	percent
yes	41	68.3
no	19	31.7

Table 7.29: Frequency of Coconut

questionnaire	**frequency**	**percent**
Yes	**30**	**50**
No	**30**	**50**

Table 7.30: Frequency of Banana

questionnaire	frequency	persent
Yes	55	91.7
No	5	8.3

Table 7.31: Frequency of Grapes

questionnaire	Frequency	percent
Yes	58	96.7
No	2	3.3

Table 7.32: Frequency of Guava

questionnaire	Frequency	percent
Yes	51	85
No	9	15

Table 7.33: Frequency of Cauliflower

questionnaire	frequency	percent
Yes	52	86.7
No	8	13.3

Table 7.34: Frequency of cabbage

Questionnaire	frequency	percent
Yes	48	80
No	12	20

Table 7.35: Frequency of Carrot

Questionnaire	Frequency	percent
yes	49	81.7
no	11	18.3

Table 7.36: Frequency of Spinach

Questionnaire	Frequency	percent
Yes	50	83.3
No	10	16.7

Table 7.37: Frequency of Lantils

questionnaire	Frequency	Percent
yes	55	91.7
No	5	8.3

Table 7.38: Frequency of Pulses

Questionnaire	Frequency	Percent
yes	48	80
no	12	20

Chapter-5

5.0: Discussion

In my data every pregnant women are illiterate, some of socio- economic condition are much better, but some are very bad condition in my data study. Anthropometric indicators revealed into their current nutritional status and in pregnancy period it changes very rapidly.[5] in my study 56.7% of pregnant women are normal weight, 30.0% of pregnant women are overweight and 5% and 6.7 % are obese and underweight pregnant women. According to anthropometric assessment of nutritional status in pregnant women in different trimesters attending at the antenatal clinic of DMCH data also they found 42.04% women had normal BMI, where 20% were underweight, 30.20% overweight and 8% were obese. So there are quite similar data with them. Eventually I also said that those have normal BMI their relationship with socio-economic status are good as they said.[6]. We have seen that there are most of the pregnant women are normal weight but very less amount of pregnant women are underweight because of their socio-economic condition. In Dhaka city most of the lower level people are doing business and their monthly income above 30000taka. So that's why they effort their requirement. A significant correlation was found between nutritional status and weight in kg (p=.000), also nutritional status and height in cm (p=.006). My all data's correlation is a positively and negatively correlated but not significant. Also nutritional status and dietary assessment are positively and negatively correlated. According to dietary patterns among pregnant women in the west-north of Iran data they were selected urban areas large number pregnant women also their dietary pattern are low significant but not strongly significant.[7]. In my data I was using only attending government hospitals pregnant women data. That's why it is not strongly or low significant. Because in Dhaka city peoples are consumed all the food items, they also know that their nutrition requirement by many ways it might be television programme, social networks, NGO health worker etc. because they all are working with pregnant women, now a days all people are concern about their pregnancy. Dietary assessment are more affected on pregnant women for their fetus growth. There are 76.1% of pregnant women are intake meat (beef, chicken, liver) and 65.97% pregnant women consumed fish (bual, magur, shing, panggas, kachki, hilsa) , 51.5% consumed milk and milk products, 80% pregnant women consumed eggs, 84% are consumed vegetables, 77% are consumed fruits. Most of them BMI range are normal weight, so that's why p value is not significant but they are positively and negatively correlated.

5.1: Conclusion:

In Dhaka city those people are illiterate but their socioeconomic condition always good and their family income monthly above 30000taka, also they know the nutrition requirement because of the nutrition services of government hospitals. They know it from television programme, social networks, NGO health workers, hospitals etc. that's why my data was not significant but nutritional status with economic condition, food items and nutrition services were positively and negatively correlated in my data analysis.

References

1. Akther, L., Hossain, M. B., Awwal, A. A., & Nesa, A. (2015). Anthropometric Assessment of Nutritional Status in Pregnant Women in Different Trimesters Attending at the Antenatal Clinic of DMCH. *Anwer Khan Modern Medical College Journal*, *6*(1), 20-24..

2 . Esmaillzadeh, A., Samareh, S., & Azadbakht, L. (2008). Dietary patterns among pregnant women in the west-north of Iran. *Pakistan Journal of Biological Sciences*, *11* (5), 793.

3. Samareh, S., Esmaeilzadeh, A., Rahmani, K., Kalantari, N., Azadbakht, L., & KHOUSH, F. M. (2006). Food consumption pattern in pregnant women attending prenatal care centers in Maku.

4. Samareh, S., Esmaeilzadeh, A., Rahmani, K., Kalantari, N., Azadbakht, L., & KHOUSH, F. M. (2006). Food consumption pattern in pregnant women attending prenatal care centers in Maku.

5. Taleb, S., Kaibi, M., & Deghboudj, N. (2011). Assessment of Nutritional Status of Pregnant Women Attending the City Tebessa PMI (Algeria). *National Journal of Physiology, Pharmacy and Pharmacology*, *1*(2), 97.

6. Akther, L., Hossain, M. B., Awwal, A. A., & Nesa, A. (2015). Anthropometric Assessment of Nutritional Status in Pregnant Women in Different Trimesters Attending at the Antenatal Clinic of DMCH. *Anwer Khan Modern Medical College Journal*, *6*(1), 20-24.

7. Esmaillzadeh, A., Samareh, S., & Azadbakht, L. (2008). Dietary patterns among pregnant women in the west-north of Iran. *Pakistan Journal of Biological Sciences*, *11*(5), 793.

Given below the following questionnaire

Questionnaire
On
Anthropometric measurement of nutritional status of pregnant women following dietary assessment attending in hospital of Dhaka city.

Questionnaire ID: | | | |

Interviewee and interviewer details
Name of the hospital: Address: Mohallah: Thana: District
Name of interviewer:----------
Type of resident: Slum.....1 Non-slum 2
Start time of interview:		:		 (Use 24 hours format) HH : MM
Date of interview:						| Day Month Year
Results of the interview: Complete.....1 Incomplete .....2 Refusals.....3

Background characteristics and Socio economic characteristics			
Sl.No	Question	Response	Skip
1	How old are you?	----------(Completed years)	
2	What is your religion?	Islam.....1 Hindu.....2 Christian .....3 Buddhist .....4 Others(Specify) 7	
3	What is your level of educational qualification? (Completed years)	1-5 passed.....1 6-10 Passed .....2 HSC passed .....3 Graduate/Fazi passed .....4 Post graduate passed 5	
4	What is your primary occupation?	Housewife ..... 1 House maid..... 2	

		Business ..... 3 Service(Govt. or Non-Govt.)..... 4 Daily wager ..... 5 Others(Specify) 7	
5	What is the level of education of your husband?	1-5 passed..... 1 6-10 Passed ..... 2 HSC passed ..... 3 Graduate/Fazi passed ..... 4 Post graduate passed 5	
6	What is your husband's occupation?	Service (Govt. Non Govt.) ..... 1 Business ..... 2 Day laborer..... 3 Home maker/Household work ..... 4 Agriculture ..... 5 Others 7	
7	How many earning members in your family?	----------(Number)	
8	What is your monthly income?	Tk---------- 5k-10k taka (level-1) .....1 11k-20k taka (level-2) .....2 21k-30k taka (level-3) .....3 31k-50k taka (level-4) .....4 Above 50k taka (level-5).....5	
9	Which material is your home made?	Raw house ..... 1 Brick house..... 2 Tin ..... 3 Semi-tilled house..... 4	
10	What is your socioeconomic condition?	Good..... 1 Very good..... 2 Bad ..... 3 Very bad..... 4	
Reproductive history			
11	What is your marital status?	Married..... 1 Unmarried ..... 2 Separated..... 3 Divorce..... 4	
12	Do you have any child	Yes ..... 1 No..... 2	
13	If yes, then how many?	Number----------	
14	How many member in your family?	Number----------	
Antenatal related information			
15	Duration your pregnancy did you see anyone for antenatal checkup?	Yes ..... 1 No..... 2	
16	During your pregnancy period, what was the duration of your pregnancy at your first antenatal checkup?	---------- (Weeks)	
17	During your last pregnancy, total how many times did you receive antenatal checkup?	----------(Number)	
18	During your antenatal checkup, what complication(s) did you face?	No complication..... 1 Headache..... 2 Blurring of vision 3	

	(Multiple answers are acceptable)	High blood pressure ..... 4 Convulsion ..... 5 Anaemia ..... 6 Others (Specify) 7	

Food Frequency Question			
19			
Meat and Fish	Yesterday during the day or night, did you consume the following food items?		
Lamb	Yes------1	No----------2	Don't know----------8
Chicken or poultry	Yes------1	No----------2	Don't know----------8
Liver, liver pate	Yes------1	No----------2	Don't know----------8
Fish	Yes------1	No----------2	Don't know----------8
Dry fish	Yes------1	No----------2	Don't know----------8
Prawns	Yes------1	No----------2	Don't know----------8
Rui fish	Yes------1	No----------2	Don't know----------8
Hilsa fish	Yes------1	No----------2	Don't know----------8
Kachki fish	Yes------1	No----------2	Don't know----------8
Shing	Yes------1	No----------2	Don't know----------8
Magur	Yes------1	No----------2	Don't know----------8
Panggas	Yes------1	No----------2	Don't know----------8
Bual	Yes------1	No----------2	Don't know----------8
Snacks	Yes------1	No----------2	Don't know----------8
Bread and biscuits	Yes------1	No----------2	Don't know----------8
Puff rice	Yes------1	No----------2	Don't know----------8
Chira	Yes------1	No----------2	Don't know----------8
Chanachur	Yes------1	No----------2	Don't know----------8
Homemade snacks (pakora, bora etc)	Yes------1	No----------2	Don't know----------8
Chalvaja	Yes------1	No----------2	Don't know----------8
Cereals	Yes------1	No----------2	Don't know----------8
atta / moyda	Yes------1	No----------2	Don't know----------8
Suji	Yes------1	No----------2	Don't know----------8
Chatu	Yes------1	No----------2	Don't know----------8
Corn	Yes------1	No----------2	Don't know----------8
Potatoes/rice	Yes------1	No----------2	Don't know----------8
Potatoes	Yes------1	No----------2	Don't know----------8
White rice	Yes------1	No----------2	Don't know----------8
Brown rice	Yes------1	No----------2	Don't know----------8
Dairy products and fats	Yes------1	No----------2	Don't know----------8
Sour cream	Yes------1	No----------2	Don't know----------8
Clotted cream	Yes------1	No----------2	Don't know----------8
Yogurt	Yes------1	No----------2	Don't know----------8
Desserts	Yes------1	No----------2	Don't know----------8
Ice cream	Yes------1	No----------2	Don't know----------8
Nuts	Yes------1	No----------2	Don't know----------8
Fats/proteins	Yes------1	No----------2	Don't know----------8
Eggs	Yes------1	No----------2	Don't know----------8
Only yolk	Yes------1	No----------2	Don't know----------8

Only white part of egg	Yes------1	No----------2	Don't know----------8	
Soybean oil / mustard oil / sunflower oil	Yes------1	No----------2	Don't know----------8	
Fruits and Vegetables	Yes------1	No----------2	Don't know----------8	
Apple	Yes------1	No----------2	Don't know----------8	
Orange	Yes------1	No----------2	Don't know----------8	
Hog plum	Yes------1	No----------2	Don't know----------8	
BROCCOLI	Yes------1	No----------2	Don't know----------8	
Cauliflower	Yes------1	No----------2	Don't know----------8	
LANTILS	Yes------1	No----------2	Don't know----------8	
Cabbage	Yes------1	No----------2	Don't know----------8	
Pomegranate	Yes------1	No----------2	Don't know----------8	
BERRIES	Yes------1	No----------2	Don't know----------8	
WATERMELON	Yes------1	No----------2	Don't know----------8	
Coconut	Yes------1	No----------2	Don't know----------8	
BANANNA	Yes------1	No----------2	Don't know----------8	
Grapes	Yes------1	No----------2	Don't know----------8	
Guava	Yes------1	No----------2	Don't know----------8	
Pear	Yes------1	No----------2	Don't know----------8	
Carrot	Yes------1	No----------2	Don't know----------8	
SPINACH	Yes------1	No----------2	Don't know----------8	
Lentils	Yes------1	No----------2	Don't know----------8	
Pulses	Yes------1	No----------2	Don't know----------8	
Physical activities				
20	Did you perform physical activity?	Yes ..... 1 No..... 2		
21	What types of physical activity did you perform?	Light ..... Moderate ..... Heavy		
22	How did you spend your leisure time?	Watching television..... Listening radio ..... Social network..... Other(Specify).....		
23	Do you watch various health nutritional program on television?	Yes ..... 1 No..... 2		
Measurement				
24	Weight of the respondents (Kg)?	|___|____|____|.|____|____|		
25	Weight of the respondents (Cm)?	|____|____|____|.|____|		
26	What is your nutritional status?	Underweight: (BMI is less than 18.5) .....1 Normal weight: (BMI is 18.5 to 24.9).....2 Overweight: (BMI is 25 to 29.9).....3 Obese: (BMI is 30 or more) 4		
27	Blood pressure	Systolic |___|___|___| Diastolic |___|___|__		

28	Blood group	----------	
29	End time of interview	HH MM	
Thanks for giving your valuable time			