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## **Nutrition, Health and Demographic Survey of Bangladesh-2011**

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## **Foreword**

Nutrition, Health and Demographic Survey of Bangladesh-2011 (NHDSBD-2011) is the 4<sup>th</sup> national nutrition survey conducted in Bangladesh since independence. It is initiated after 17 years since recent past survey (1996) conducted by INFS, University of Dhaka. Institute of Nutrition and Food Science (INFS), University of Dhaka has conducted three national surveys (1975-76, 1981-82 and 1995-96) in limited households (700 to 1300 household), most of which focused on the nutrition aspects along with few health issues. The NHDSBD-2011 has been conducted on vast number of households (~7000 household comprising 31066 people) of both rural and urban settings among the representative mass population of the country including Chittagong Hill Tracts.

The INFS is playing a vital role in solving different national issues related to nutrition through its different community and laboratory researches. In the recent years the institute has conducted several national level nutrition research works covering both field and laboratory. The publication entitled "Nutrition, Health and Demographic Survey of Bangladesh-2011" being the appropriate testimony to this welcoming endeavour.

I do appreciate the continuing effort of the Institute in nation building through providing skilled personnel, revealing nutrition problems, designing appropriate nutrition intervention with strategies and approaches. These research findings are being used by the Government and NGO's in different social safety net work like the "*Ujjibito*" where nutrition is integrated in the national development program.

I strongly believe that the findings of this survey would essentially be useful for improving monitoring and assessment system as well as the development of Nutrition, Health and Population Sectors policies and programs. It will contribute immensely in attaining the Millennium Development Goals (MDGs) and Poverty Reduction Strategy (PRS) of Bangladesh.

**Professor Dr. A A M S Arefin Siddique**

Vice Chancellor  
University of Dhaka

## **Preface**

The Nutrition, Health and Demographic Survey of Bangladesh-2011 (NHDSBD-2011) is the newest ever leading comprehensive survey conducted in Bangladesh. It is a representative household sample survey, which is independently designed and implemented by a group of teachers of the Institute of Nutrition and Food Science (INFS), University of Dhaka, Bangladesh in collaboration with Tufts University, USA with a financial support of USDA. A large body of Research Team including Fahmida Aktar as a Research Associate was involved in this survey.

The NHDSBD-2011 attempts to address the most national concern of nutrition, health and demographic issues of the mass population of the country. It is the 5<sup>th</sup> survey of this line conducted in Bangladesh and is initiated after 17 years of the last survey (1996) conducted by INFS, University of Dhaka. Since its inception, the INFS, DU conducted 4 nationwide surveys (1964, 1975-76, 1982 and 1996) in limited households (700 to 1300 household), most of which focused on the nutrition aspects along with little health issues. The NHDSBD-2011 is conducted on vast number of households (~7000 household comprising 31066 people) of both rural and urban settings among representative mass population of the country. This survey provides up-to-date information on nutrition, health and demographic profile and social progress including *socioeconomic condition, food security, sanitation and hygiene, child and maternal health and nutrition, family planning, women empowerment, domestic violence, AIDS/STDs/STIs/TB/ NCDs related knowledge, attitude and prevalence.*

Members of the Technical Advisory Committee (TAC) consisting of experts from government, non-governmental and international organizations as well as researchers and professionals working in the Health, Nutrition and Population Sector, put forth their valuable opinion in major phases of the survey

We hope that the survey findings would essentially be useful for monitoring and assessment as well as development of Nutrition, Health Population Sectors Program and to attain the Millennium Development Goals (MDGs) and Poverty Reduction Strategy (PRS) of Bangladesh.

We express our thanks to TAC members, Research Team and USDA for their active efforts and supports in successful completion of the survey.

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## Acronyms

INFS	Institute of Nutrition and Food Science
DU	University of Dhaka
MDGs	Millennium Development Goals
PRS	Poverty Reduction Strategy
NHDSBD	Nutrition Health and Demographic Survey of Bangladesh
AIDs	Acute Immune Deficiency Syndrome
STDs	Sexually Transmitted Diseases
STIs	Sexually Transmitted Infection
TB	Tuberculosis
NCDs	Non Communicable Diseases
TAC	Technical Advisory Committee
USDA	United States Development Agency
ISRT	Institute of Statistical Research and Training
NFFPCSP	National Food Policy Capacity Strengthening Program
FAO	Food and Agriculture Organization
Kcal	Kilo calories
PAL	Physical Activity Level
TEE	Total Energy Expenditure
PAR	Physical Activity Ration
EPI	Expanded Program on Immunization
ORS	Oral Rehydration Solution
DPT	Vaccine for Diphtheria, Pertussis (Whooping cough) and Tetanus
BCG	Bacillus Calmatte-Guerin a vaccine against tuberculosis
ARI	Acute Respiratory Tract Infection
MMR	Maternal Mortality Rate
BMI	Basal Metabolic Index
BMR	Basal Metabolic Rate
NP	Non Pregnant
NPNL	Non Pregnant Non Lactating
CHT	Chittagong Hill Tracts
TFR	Total Fertility Rate
HIV	Human Immunodeficiency Virus
KAP	Knowledge Attitude and Practice
ANC	Antenatal Care
PNC	Postnatal Care
MR	Menstrual Regulation
MUAC	Mid Upper Arm Circumference
PSUs	Primary Sampling Units
HIES	Household Income and Expenditure Survey
HFSNA	Household Food Security and Nutrition Assessment
LPG	Liquid Petroleum Gas
IRRI	International Rice Research Institute
WHO	World Health Organization
UNU	United Nation University
NCHS	National Center for Health Statistics
BDHS	Bangladesh Demographic Health Survey
SD	Standard Deviation
MOHFW	Ministry of Health and Family Welfare
IUD	Intrauterine device
HPNSDP	Health, Population and Nutrition Sector Development Program
PIP	Population Investment Policy
NIPORT	National Institute of Population Research and Training
AHA	American Heart Association
BBS	Bangladesh Bureau of Statistics
IPHN	Institute of Public Health and Nutrition

## Key Findings

The NHDSBD-2011 is the fifth national survey addressing *nutrition, health and demographic* issues of the mass people of Bangladesh. It is the largest household survey comprising ~7000 households with 31066 populations. This survey provides updated information on nutrition, health and demographic profile, and social progress including *socioeconomic condition, food security, sanitation and hygiene, child and maternal health and nutrition, family planning, women empowerment, domestic violence, AIDS/STDs/STIs/TB/NCDs related knowledge, attitude and prevalence*.

### Socio-economic profile

**Household population:** Of the 31066 populations in the ~7000 households, 70% live in rural and 30% is in urban settings. Female constitutes 51.24% of the total population. The younger age group is substantially larger than the older ones for both sexes and urban and rural areas.

**Household age group:** About 54% of household population is in productive age group of 15-59 years. Above 41% population is U15 years of age, 21.9% is U5 year age and 5.1% is +60 years age. It is slightly less in the urban areas (5.0%) than in the rural (5.2%).

**Household member:** Seventy percent of the households (corresponding to 69.7% and 30.3% for rural and urban respectively) compose 3 to 5 members and average household size is 5 members.

**Household income-expenditure:** Mean monthly income and expenditure per household at current price is estimated taka 11839 and 8325 respectively. The major expenditure is on food.

**Household access to electricity and solar energy:** It is seen that 59.2% of the total households has access to electricity and the second one is kerosene light coverage being 43.7% in rural areas. Solar light is used only in 1.4% households.

**House building material:** The most common house material is tin (88% roof, 43.9% wall). Earth floor is almost universal (83%) in the rural area. Above 44% households use only one bed room and 35.7% household use two rooms that indicates the overcrowding of sleeping area.

**Cooking facilities:** It has been observed that 66.5% of the households do not have separate kitchen, they use open space for cooking; and 64.8% households use wood as a type of cooking fuel followed by Kharkuta.

**Access to media:** A good number of households have exposure to mass media. Women who reside in urban area are more likely to watch television and to some extent read newspaper.

### Food Security, Poverty and Agriculture

**Food Security:** At national level, 14.4% household sometimes and 11.2% household often face food shortage. Rural households are more likely to have food deficit than urban households (15.4% versus 11.9%). Eighty one percent households sometimes experience at least some sort of food shortage and 14% household often remain anxious about the next meal. About 77% of the households face the food shortage or deficit in a specific time of the year, which indicates transitory or current food insecurity. In severe food shortage, adults of 6% households often and of 76% households sometimes eat food less than 3 times a day. In most severe level of food insecurity, children of 3% households often and of 15% households sometimes have to eat food less than 3 times a day. Food deficit is more severe in rural households than that in the urban.

**Poverty level:** Poverty is the major cause of food insecurity. In the NHDSBD-2011, as estimated by direct calorie intake (DCI) method, 35.9% of household remain below hard core poverty line (per capita Kcal intake  $\leq$ 1805kcal) and 56.1% in absolute poverty (per capita kcal intake  $\leq$ 2122kcal).

**Agriculture:** About 87.8% of households own a homestead, while 22.6% own land for agriculture other than a homestead. Ownership of homestead or other land is more common in rural areas than that in the urban areas. Nationally, about 12% household have no land. About 29.1% of the households are directly involved in agriculture. Nearly 27.51% of total household produce cereal; 4.14% and 3.62% of households are involved in the production

of cash crop and vegetable respectively. On average 22.27% households produce different types of vegetables and fruits in their home yard.

**Fish and livestock production:** only 7.8% of the households are involved in cultivation of different varieties of fishes in ponds. About 38.2% of the households own chicken, 28% own cows, 19.6% own duck and 13.7% households own goat.

### **Food Consumption and Physical Activity**

In the NHDSBD-2011, information on dietary intake was collected to investigate the intake of energy and nutrients at individual and household level by 24 hour recall method.

**Food Intake:** In cereals group, the per capita per day intake is 461.1 g in which rice contributed 435.9 g, wheat 16.8 g and other cereals 7.8 g. The consumption of food items like vegetables, milk and milk products, meat, cereals, poultry, egg, fish and fruits vary according to residence. The consumption of meat/poultry/egg is less in rural areas (29.7%) than that in the urban areas (37.2%). Per capita per day consumption of fish is 126.7 g nationally. Per capita per day consumption of edible oil is 21.7 g. For milk and milk product, it is 16.9 g.

**Calorie and nutrient intake:** Overall Per capita per day calorie intake is 2222.1 kcal (male 2375.2 kcal and female 2086.8 kcal). It is seen that 53.3% households cannot fulfill per capita energy requirement on the basis of observed body weight (2076 kcal/capita/day), while on the basis of desired body weight requirement (2187 kcal/capita/day), 60.1% household cannot fulfill the energy requirement for all household members. It indicates that there is energy deficiency at household level. However, total average energy intake of the surveyed households is 2222.1 kcal. At national level, protein, fat and carbohydrate per capita per day intake are 61g, 31.1g and 416.8g respectively. Intake of calcium, iron, vitamin C, carotene and retinol are 528.7mg, 26.7mg, 66.9mg, 3892µg and 756 µg respectively.

**Physical activity level (PAL):** Among the adult male, the highest PAL value is observed in rickshaw/van-driver (PAL=2.8), followed by day labour including earth cutting (PAL=2.3), farmer/fisherman (PAL=2.0) and elderly/physically disabled (PAL=2.0). The lowest PAL value was observed for service holders (PAL=1.4) which was followed by for businessman, motor driver and jobless (PAL=1.6). And among the adult female, the highest PAL is noted in day labour including earth cutting (PAL=2.3) and the lowest PAL value is in the businessman and service holders (PAL=1.9). It is seen that irrespective of occupations, the PAL value for female (PAL=2.0) is higher than the PAL value for male (PAL=1.9).

**Energy Balance/Gap:** The overall energy consumption and expenditure are 2375.19 kcal and 2888.97 kcal respectively in male, and 2086.84 kcal and 2354.88 kcal respectively in female. The total energy balance or gap or deficit is -513.78 kcal in male and -268.03 kcal in female. Day labourer including earth cutting and Rickshaw/van driver have highest energy deficit (-500.58 kcal to -1052.63 kcal).

### **Water, Sanitation and Hygiene**

Safe water and proper sanitation or hygienic disposal of human waste can significantly reduce morbidity like diarrhea and infectious diseases.

**Water source:** About 94.4% household use taps or tube well water as drinking water. In rural areas, the rate was 95%, which is marginally higher than in urban areas (93.2%). It is noted that overall 75.1% households, tubewell is free from arsenic contamination, 10.1% households' tubewell is contaminated with arsenic, while arsenic status of 14.8% households' tubewell is not yet detected. About 85% respondents knew that tubewell water is the source of arsenic contamination and 80% respondents have knowledge about the common signs and symptom of arsenicosis. Nationally 76% households use tap/tubewell water for cooking and washing utensils. The second most common source of this water is pond or ditch (20%).

**Sanitation and hygiene:** On average 62.3% households have hygienic latrine (urban 70.9% versus rural 58.6%). The rest households use either 'specific ditch/chari/well' (27.9%) or 'hanging/open latrine' (6.9%). Overall 66.7% of the households have their own latrine and 29.2% use share latrine. About 85.4% households use shoe/sandle in latrine/dirty place. For disposal of U5 children feces, 19.8% households use latrine (pot), 19.6% use



hygienic latrine and children of 47.9% households defecates in open place, which is common in rural areas (49.8%) and in the urban (40.4%).

About 98.5% respondents think and 93.8% practice hand washing before cooking. And 97.8% respondents think and every member of 91.4% households wash hand before having food. On average 36.8 percent households have separate bathroom (rural 31.2% and urban 49.8%). About 57.7% households dispose household garbage in specific places and the rest disposes either in open space (40.6%) or in any place (1.4%).

### **Child Health and Nutrition**

Bangladesh is on the track to achieve the MDG 4 (reducing child mortality). Achieving MGD 4 is due to improvement in *the EPI, vitamin A supplementation, breastfeeding, use of ORS, diarrheal disease control, control of ARI.*

**Vaccination coverage:** About 92.2% of U5 children have immunization. It is almost similar in both urban and rural areas; the coverage for BCG, DPT and Polio vaccine is above 95% and that for measles and hepatitis B are 84% and 72.8% respectively. Only 1.7% of children aged  $\leq 5$  y have not received any childhood vaccinations.

**Childhood illness:** About 64.1% of U5 children are with suspected ARI or pneumonia. Nearly 4.5% of children have episodes of diarrhea in 2 weeks preceding the survey. About 87.3% of diarrheal children receive increased fluids, 67% take ORS, only 4.1% use homemade saline and 16.3% take antibiotics. Only 13.4% of diarrheal children get more foods.

**Nutritional status of children:** At national level the prevalence of stunting is about 40.2% in both  $\leq 5$  y girls and boys. It is higher (42%) in rural area than the urban (37%). Overall 17% children are severely stunted, which was higher in rural areas than that in the urban (about 18% vs 14%) for both sexes. Among divisions, highest percent of U5 children are stunted in Sylhet (boys 51.0% and girls 46.6%) followed by Chittagong (boys 40.9% and girls 48.8%). The prevalence of wasting at national level is 25.3% in girls and 22.3% in boys. Severe wasting is 6.5% in girls and 7.2% in boys. The prevalence of underweight at national level is about 45% in both boys and girls. It is higher (45%) in rural than that in urban area (43%) for both sexes. Severe underweight is 15.3 % in boys and 17.3% in girls.

Of the age group of age  $>5$  years to  $\leq 10$  years, nationally 36.5% boys and 30.6% girls are stunted. it is highest in Sylhet (boys 46.3% and girls 47.9%) and lowest in Rangpur (boys 28.9% and girls 22.0%). Underweight is highest in Chittagong (boys 61.0% and girls 50.4%). Wasting is 27.5% in girls and 23.7% in boys

**Breastfeeding vitamin A supplement:** The overall rate of exclusive breastfeeding to 6 months age is 63.4%; about 80.5% of children receives complementary food (mostly home-made: 66.4%) beside breastfeeding. About 92.3% of children aged 0-59 months receive a vitamin A supplement.

### **Maternal Health**

The targets of MDG 5 are to achieving the maternal mortality ratio (MMR) to 143 deaths per 100,000 live births and increasing skilled attendance at birth to 50% by 2015.

**Antenatal care:** Approximately 17% pregnant women do one visit, 18.2% two visits, 14.5% three visits and 26.8% do 4+ visits. In urban areas, the number of visit (4+) is higher (35%) than in the rural areas (23.1%). About 73.5% of women have a live birth. It is noted that 91.5% women have normal delivery; 85.2% normal per virginal delivery (urban 78.3% and rural 88.2%), 13.9% caesarean delivery (20.5% in urban and 11% in rural areas) and 0.9% with other delivery systems.

**Postnatal care:** It is revealed that 24.9% mothers receive postnatal care within 42 days after delivery. Postnatal care for children is more common and better (37.5%) than that for the mothers (24.9%).

**Prevalence of anemia:** Anemia prevalence in women is higher in rural areas (34.1%) than in the urban (29.1%). It is extremely high in women of Sylhet division (95.6%), which is followed by CHT division (93.5%). It is lowest in Dhaka division (4.4%). Nationally 32.6% women of 13-40 y age are anemic as categorized by hemoglobin level.

**Nutritional status:** Nationally 40.1% adolescent boys and 39.5% adolescent girls are stunting. Prevalence of long term malnutrition is highest in Sylhet division among the adolescent (boys 52.9% and girls 42.3%). It is seen that 9.9% boys and 2.8% girls are suffering from thinness (BMI for age Z score <-3SD), and 4.5% boys and 3.3% girls are obese (BMI for age Z score > +1SD). Sylhet division has the highest proportion of underweight adolescent boys (41.2%) and Chittagong has the highest proportion of underweight adolescent girls (16.3%). Obesity is significantly high in Chittagong in both adolescent boys (15.8%) and girls (8.3%).

Among adults (15 to <49 y), 60.4% women and 62.9% men have normal BMI (18.5-24.99), while 24.8% women and 25.3% men are suffering from chronic energy deficiency or thinness (BMI <18.5), and 14.9% women and 11.8% men are overweight or obese (BMI ≥25). Both rural and urban women are more likely to be obese (12.6% and 20% respectively), while both rural and urban men are obese (10.2% and 16% respectively). Prevalence of overweight and obesity (BMI≥25) is highest in CHT (men 17.5% and women 25.6%) and lowest in Sylhet (men 9.9% and women 6.9%).

Of the age group of 49 to <60 y, prevalence of under nutrition (BMI<18) for both sexes (men 43.8% and women 27.7%) is highest in Chittagong and lowest (men 15.0% to women 21.4%) in Khulna. About 47.5% women and 52.3% men of age ≥60 years group have normal nutritional status (BMI18.5-24.99), while 38.4% women and 38.5% men are undernourished or thin (BMI <18.5), while 14.2% women and 9.1% men are overweight or obese (BMI ≥25). Prevalence of under nutrition (BMI<18) for both sexes (men 71.4% and women 65.5%) is significantly higher in Sylhet compared to other divisions. The prevalence of overweight is highest in CHT (men 29.4% and women 14.3%).

**Common disease of old people:** It is observed that 32.4% of old age people have gastric problem, 12.1% have hazy vision, 11.2% have knee pain, 7.5% have diabetes, 3.6% have digestive complication, 3.5% have dental problem, 3% have urinary difficulties, 2.8% have heart disease and 2.4% have hearing difficulty. As regards diabetes, prevalence is higher in urban old age people than that in rural old age people (9.2% versus 6.8%). Prevalence of diabetes is highest in Dhaka (9.5%) followed by Chittagong (9.2%). As regards heart problem, self reported prevalence is highest in Sylhet (8.5%) followed by Barisal (5.4%).

### **Family Planning**

Bangladesh aims to achieve replacement level fertility by 2015. Using family planning, HPNSDP plans to reduce the Total Fertility Rate (TFR) to 2 children per woman by 2016.

**Use of contraception:** About 76% respondents currently use any one device of family planning method of their choice (urban 76.6% and rural 75.6%). Taking pill is the most widely used method (45.9% in both urban and rural) followed by injection for female (15.6%). Nationally about 72.2% women heard about menstrual regulation, while 7.3% women ever use it. The respondents know about the family planning through mass media. About 30.4% women often discuss of using contraceptive with their husband.

### **Domestic Violence**

Violence against women is a deeply entrenched problem in most societies. Violence against women is amongst the most serious threats to overall development and progress in Bangladesh. Domestic violence in family is a major societal problem in Bangladesh.

Wife beating is most common violence against women in Bangladesh. It is prevalently due to argument with husband (16%), going outside without telling husband (15%) and neglecting children care (15%). About 13% of women believe that it is justified if she disobeys the elders; nearly 11% violence against wife beating is due to refusal to have sex with husband. Urban women are less likely to accept wife beating for any reason than the rural ones. It is highest in Rangpur (40.8%) compared to other division.

Only 14% women discussed about the violence on them by their husband, 85.6% do not share it with others and 17% women get assistance from neighbour.

## **Women Empowerment**

It is financial autonomy, access to opportunities and resources and financial decision-making. Among the surveyed population, only 10% women are in employment; most of them are working in agriculture sector (27%) and others are in service (19%), of them 80% are working for whole the year and 14% working seasonally. Among employed women, 85% women earn cash, 9% receive both cash and kind and 2.4% women receive payment only in kind for their work. Women in urban areas are more likely get cash (91%) than that in rural areas (82%).

About 81% earning women share with their husband to use their earnings, while only 4.4% decide alone and 8% of women earning is used by their husband alone.

As regards freedom of movement, it is higher in rural areas (30%) than urban areas (27.8%). Only 23% women used go to health center or hospital alone; 60% women go with their husband and 19% are with their young children or family members. Movement restriction is higher in rural areas than the urban.

Only 9% women take decision independently about the household functions, 72% do it jointly with their husband.

## **AIDS/STDs/STIs/TB/NCDs**

**HIV/AIDS:** HIV prevalence in Bangladesh is 0.01%. Around half of the respondent women are aware about the modes of transmission, prevention and misconceptions of HIV to reduce the risk of getting HIV infection such as using condoms (49%), limiting sex to uninfected partner (54%) and being refraining sexual intercourse (50%) with others. Urban women have greater knowledge on HIV prevention methods than the rural women.

Fifty four women know unsterile needle or syringe use and 55% women know unsafe blood transfusion can transmit HIV. Only 39% women know that the AIDS virus cannot be transmitted by mosquito bite, 37% women know HIV cannot be transmitted or a person cannot be HIV infected by sharing food and 40% women believe a healthy-looking person can have AIDS virus.

**STDs/STIs:** About 34% of all respondent women know about STDs or STIs. STIs prevalence is very low among the respondents; it is revealed that only 4.4% of all respondent have bad smelling/abnormal genital discharge and only 2% have genital sore or ulcer. As regards STIs symptoms, prevalence is highest in Chittagong and Khulna and lowest in CHT and Barisal. Genital sore/ulcer is higher among women living in Sylhet.

**NCD:** It has been observed that 95% women have heard of TB and 88% respondent women believe that it is curable. Knowledge about TB cure is higher in urban (92%) than in rural areas (86%). Seventy five percent of the households have at least one person suffering from gastric complication. As far other NCDs, the percentage is 34% for high/low blood pressure, 8% for asthma, 8% for heart disease, 5.4% for diabetes and 4.4% for mental disease among the surveyed households.

**Diabetes and hypertension:** Fasting blood glucose level (mmol/L) indicates that 10% men and 13% women (age  $\geq 40$  years) are diabetic. The prevalence is higher in women (12.81%) than men (9.48%). Overall 35.89% of men and 34.39% of women are pre-diabetic. It is revealed that overall 46% of men and 37% of women are pre-hypertensive, 4.88% of men and 6% of women are hypertensive at Stage 1.

#### 1.1 Overview

The “Nutrition, Health and Demographic Survey of Bangladesh-2011”(NHDSBD-2011) under the project “Assessing and Improving the Consumption Effects of Agriculture Policies and Programs in Bangladesh” is a comprehensive survey. It incorporated the most important aspects related to population, health, nutrition, agriculture and food security. It deserves to be an endeavor made for the first time in Bangladesh. The NHDSBD-2011 was implemented and conducted by Dr. M. Akhtaruzzaman, Dr. Md. Nazrul Islam Khan, and Dr. Sheikh Nazrul Islam, Professors of the Institute of Nutrition and Food Science, University of Dhaka. A large body of Research Team including Fahmida Aktar as a Research Associate was involved in this survey. The research was financed by USDA Bangladesh.

This study is a nationally representative household survey. It is designed to provide detail information on the basic national indicators of socio-economic progress including demographic structure; household income-expenditure; housing condition; ownership of land and other resources; agricultural cropping pattern and production including fishery, livestock and poultry, vegetable production; food security (individual as well as household level); household food habit and food consumption pattern; seasonal variation in food consumption; nutritional status (especially under 5 children and women of reproductive age); light and alternative energy sources; smoking status; sanitation and hygiene; women empowerment; information awareness; livelihood security and participation in social work; domestic violence; daily physical activity level of adult men and women; KAP (Knowledge, Attitude and Practice) about nutrition; KAP about hygiene in cooking; drinking water and water purification; toilet facility and domestic waste management; lifestyle and dietary pattern of old age people; *child health including breastfeeding, primary health care coverage, vaccination, disease frequency and treatment, infant and young child feeding practices; adolescent health; disease frequency and treatment of family members; AIDS/STDs/STIs/TB/NCDs related KAP; maternal and reproductive health including health practices, antenatal care (ANC), vaccination, weight gain, care during delivery, postnatal care (PNC) of mother and newborn, birth outcome; family planning including knowledge, current use and sources of family planning methods, knowledge and use of menstrual regulation (MR), age of sterilization.*

The method of data collection was made by individual interviewing (women of the household) and observation in case of some information. Nutritional status was measured by both direct (anthropometric, biochemical and clinical) and indirect (dietary intake) methods. Blood and urine samples from specific age group of people were also collected to assess the acute nutritional status by biochemical indices.

Data on anthropometric parameters (height in cm, weight in kg and MUAC in mm) and clinical signs and symptom were collected from all of the household members. Among biochemical parameters, especially blood glucose (mmol/L) of men and women of  $\geq 40$  years of age and hemoglobin level (mmol/L) of women of 13-40 years of age were estimated. Urine samples were collected from children of U5 and women of  $\geq 50$  years of age. Clinical signs of hair, eyes, lips, gums, tongue, gland, skin, nail, skeletal, edema, lean and thin and others of the members of household were collected. Collection of blood and urine specimen and estimation of blood glucose and hemoglobin levels were made by paramedics under the supervision of a physician. Ethical permission was obtained from the Ethical Board of the Faculty of Biological Science, University of Dhaka.

In order to examine trends, the findings of this NHDSBD-2011 survey were compared with the findings of the previous nationally representative surveys of respective sectors like BDHS 2011, Health Bulletin 2012, Household Income Expenditure Survey 2010, and Agriculture Census 2008.

Moreover, this comprehensive huge data in nutrition, health and agriculture and food security of the mass population throughout the country could be used to investigate the epidemiological association or relationship among variables of different sectors. More specifically, the NHDSBD-2011 is intended to provide updated information on overall demographic situation; agriculture and food security; sanitation and hygiene; maternal, child

and geriatric health and nutrition; AIDS//STDs/STIS/TB/NCDs related KAP; women empowerment; domestic violence and family planning to meet the monitoring and evaluation need for policymakers and researchers for improving nutrition, agriculture, health and family planning services in the country.

## 1.2 Organization of the NHDSBD-2011

### 1.2.1 Sampling design

A two stage stratified random sampling technique was employed in drawing sample of the NHDSBD-2011 under the framework of Integrated Multipurpose Sample (IMPS) design developed on the basis of the sampling frame on the Population and Housing Census 2001. The IMPS design consisted of 1000 Primary Sampling Units (PSUs) throughout the country that comprises 640 rural and 360 urban PSUs. The PSU was defined as continuous two or more enumeration areas (EA) used in Population and Housing Census 2001. Each PSU comprised of around 200 households.

In the first stage out of the 1000 PSUs, 251 PSUs were drawn, which selected from seven division including Chittagong Hill Tracts. The number of PSUs selected from each district is proportional to the total number of PSUs of the corresponding district. Seventy percent PSUs was selected from rural strata and 30% from urban strata, thus making 176 rural PSUs and 75 urban PSUs. In the second stage, 30 households were selected from each of the rural PSUs and urban PSUs (located in the municipal areas). Considering the diversity of the household characteristics in the PSU is very low, 30 households were randomly selected from the frame of each selected PSU to have the representative households of the particular PSU area of BBS.

A household mapping/listing operation was carried out in all selected EAs from December 2010 to January 2011. The resulting lists of the households were used as the sampling frame for the selection of households in the second stage of sampling. The thirty households were selected from each of the PSU using an equal probability systematic sampling technique. In this way, 7,530 households were selected for the NHDSBD-2011 survey. Thus, a NHDSBD sample cluster was made for an EA. The survey was designed to obtain 7,530 complete interviews with women of the selected households. Accordingly 2,280 interviews were allocating to urban areas and 5,250 to rural areas. Women of the selected households were the eligible respondents for the questionnaire, but for some particular information like agricultural production, land ownership, male counterpart of the women was also interviewed. Table 1.2.1.a shows the number of sample PSUs covered in the NHDSBS-2011.

**Table 1.2.1.a: The number of sample PSUs covered in the NHDSBD-2011**

Sl. no.	Name of Division	Number of PSU selected		
		Urban PSU	Rural PSU	Total
1.	Dhaka	21	45	66
2.	Rajshahi	8	18	26
3.	Khulna	11	25	36
4.	Barisal	6	18	24
5.	Sylhet	4	10	14
6.	Rangpur	10	27	37
7.	Chittagong and Chittagong Hill Tracts (CHT)	13 3	23 9	36 12
<b>Total no. of PSU</b>		<b>76</b>	<b>175</b>	<b>251</b>

The total number of households in each BBS identified PSU is 200- 250.

## 1.2.2 Questionnaire development

A questionnaire was designed and prepared to record data on indicators of household socioeconomic and socio-demographic status, agriculture, household food security, lifestyle, health and nutrition, women empowerment, domestic violence and family planning. The NHDSBD-2011 questionnaire was categorized into major three components

*Section-A: Food production and consumption*  
*Section-B: Lifestyle and Demographic information*  
*Section-C: Nutrition and health*

The draft questionnaire was prepared and circulated to the members of Technical Advisory Committee, who reviewed and approved the questionnaire on 15<sup>th</sup> January 2011. The questionnaire was prepared in English and after approval it was translated into Bangla. It was then pre-tested in February 2011 for finalization.

## 1.2.3 Training and fieldwork

The questionnaire was pretested on 100 households in a rural area (Shaturia) and 100 households in an urban area in Dhaka district in February 2011. After pretesting some revisions were made based on the observations and feedback from the field and suggestions made by the pretesting teams.

Interviewers, data quality control officers and supervisors were recruited in last week of February 2011 having educational background and experiences in the same line of survey. Training for the survey team was conducted for three weeks from February 26, 2011 to March 19, 2011. The training included lectures and demonstration on how to ask questions to obtain the information, record and thus, the questionnaire was completed. Field practice was also exercised.

Towards the end of the training course, the trained enumerators spent several days in practice by interviewing households in various locations nearer to Dhaka. Fieldwork of the NHDSBD-2011 was carried out by four interview teams; each comprised one male supervisor, one data quality control officer, four female interviewers, one logistics staff member and a medical team including a physician and a paramedic. In the field, the completed questionnaires were checked by the data quality control officer and supervisor to ensure data quality. Any problem detected was addressed and the field team was asked to solve it. Data collection was started on the 25<sup>th</sup> March, 2011 and completed on the 24<sup>th</sup> March, 2012.

## 1.2.4 Data management and processing

After field level checking all questionnaires were periodically returned to Dhaka for data processing at Institute of Nutrition and Food Science. The data processing was started shortly after completion of fieldwork. It consisted of office editing, coding inserting food code, converting consumed food to edible portion, data entry and editing inconsistencies detected by the computer program. The data processing was done by eight data entry operators and four data entry supervisors. It was started on 1<sup>st</sup> June 2012 and ended on 31<sup>st</sup> October 2012. Finally, data analysis was carried out and tables were generated from the cleaned data using Microsoft Excel, Microsoft Access, STATA and SPSS.

## 1.2.5 Coverage of sample

Table 1.2.5.1 shows the results of the household interviews. A total of 7,530 households were selected for the survey but interviews were successfully completed in 6,274 households, or 83.32% of households. The principal reason for non-response among eligible interviewees was their absence at home and refusal for giving blood sample.

**Table 1.2.5.a: Coverage of household sample by residence**

Coverage of sample	Urban		Rural		Total	
	Number	Percent	Number	Percent	Number	Percent
Total Household selected	2,280	100.0	5,250	100.0	7,530	100.0
<b>Total Household occupied</b>	<b>1,900</b>	<b>84.4</b>	<b>4,374</b>	<b>83.3</b>	<b>6,274</b>	<b>83.3</b>
Household response rate		84.4		83.3		83.3

## Socio-economic Profile of Households

This chapter provides information on the social, economic and demographic characteristics of the households included in the NHDSBD-2011. It presents information on household population characteristics such as household composition, family size, housing condition, household income and expenditure, source of light and electricity. This information is intended to assist in the assessment of the representativeness of the survey.

In the NHDSBD-2011, a household is defined as a person or a group of related and/or unrelated persons who usually live in the same dwelling unit(s), have common cooking and eating arrangements and acknowledge one adult member as the head of the household. A member of the household is the person who lives in the household. A visitor is someone who is not a member of the household but stayed in the household in the night before the interview.

### 2.1 Household Population by Age, Sex, Residence and Division

The most important demographic variables are age and sex which are the primary basis of demographic classification in vital statistics, censuses and surveys. The distribution of the household population in the NHDSBD-2011 is shown in table 2.1.1.a by five year age group distribution, according to sex and urban-rural residence. The household population includes 31066 persons comprising 70% rural and 30% urban male and female. Females constitute 51.24% of the total population.

Table 2.1.1.a: Household population by age, sex and residence

Age group	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
<5	21.9	21.6	21.8	22.4	21.6	22.0	22.3	21.6	21.9
5-9	10.9	11.1	11.0	11.3	12.8	12.1	11.2	12.3	11.8
10-14	8.0	7.7	7.8	7.9	7.4	7.7	7.9	7.5	7.7
15-19	3.5	5.6	4.6	4.4	5.3	4.9	4.2	5.4	4.8
20-24	4.0	14.2	9.3	4.2	14.4	9.4	4.1	14.3	9.4
25-29	10.5	13.8	12.2	10.3	13.1	11.7	10.4	13.3	11.9
30-34	11.9	7.5	9.6	11.5	7.4	9.4	11.6	7.4	9.5
35-39	10.4	4.8	7.5	9.7	4.3	7.0	9.9	4.5	7.1
40-44	6.1	2.0	4.0	5.5	1.9	3.7	5.7	1.9	3.8
45-49	3.8	2.1	2.9	3.0	2.0	2.5	3.2	2.0	2.6
50-54	2.2	2.2	2.2	2.2	2.8	2.5	2.2	2.6	2.4
55-59	1.9	2.3	2.1	2.2	2.0	2.1	2.1	2.1	2.1
60-64	1.2	1.8	1.5	1.5	1.8	1.7	1.4	1.8	1.6
65-69	1.2	1.2	1.2	1.0	1.0	1.0	1.1	1.1	1.1
70-74	1.2	1.2	1.2	1.3	1.1	1.2	1.3	1.1	1.2
75-79	0.6	0.2	0.4	0.6	0.3	0.4	0.6	0.3	0.4
80 +	0.8	0.7	0.8	0.9	0.8	0.8	0.9	0.8	0.8
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Total population	4479	4840	9319	10668	11079	21747	15147	15919	31066

The overall proportion of the younger age groups is substantially larger than the older age groups for each sex and in both urban and rural areas. More than 41% of the household population is under 15 years of age and 21.9% is under 5 years. Persons above 60 years accounts for just 5.1% of the total population and the proportion of the population at age plus 60 years is somewhat lower in urban (5.0%) than rural (5.2%) areas. Persons of age 15-59 years, who are the productive human capital of the country, account for 53.5% of the total population.

Table 2.1.1.b: Household population by age, sex and division

age group	Dhaka		Chittagong <sup>a</sup>		CHT <sup>b</sup>		Rajshahi		Khulna		Rangpur		Barisal		Sylhet		All											
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male										
<5	23.7	22.6	23.1	22.2	22.0	22.1	21.4	21.0	21.2	18.9	18.8	17.8	23.4	23.8	23.6	21.1	20.3	20.7	21.1	22.1	21.6	24.7	22.0	23.3	22.3	21.6	21.9	
5-9	10.5	12.2	11.4	13.9	12.9	13.4	9.9	9.2	9.5	13.2	12.8	13.0	8.5	10.1	9.3	11.0	12.8	11.9	9.3	11.7	10.6	14.7	16.6	15.7	11.2	12.3	11.8	
10-14	7.8	7.0	7.4	9.1	7.7	8.4	5.7	7.4	6.6	8.2	8.9	8.5	6.3	6.8	6.6	7.7	7.1	7.4	9.0	8.4	8.7	8.7	8.4	8.6	7.9	7.5	7.7	
15-19	3.4	4.9	4.2	4.2	5.3	4.8	4.5	5.7	5.2	3.9	5.8	4.9	3.6	5.1	4.4	4.8	6.2	5.5	5.2	5.3	5.2	5.3	5.2	5.3	4.2	5.4	4.8	
20-24	3.3	14.4	9.0	3.6	13.8	8.7	4.8	10.3	7.7	4.1	16.6	10.5	4.7	15.3	10.2	4.7	15.8	10.4	5.0	12.6	8.9	4.4	12.1	8.3	4.1	14.3	9.4	
25-29	10.2	13.7	12.0	8.6	13.2	10.9	8.6	15.2	12.1	13.2	13.0	13.1	11.1	13.9	12.5	11.9	12.7	12.3	9.9	12.7	11.3	8.0	12.6	10.3	10.4	13.3	11.9	
30-34	12.7	8.4	10.5	10.3	6.6	8.4	14.6	9.2	11.8	10.5	6.3	8.4	12.7	7.2	9.8	11.5	7.1	9.3	10.9	7.4	9.1	8.7	6.9	7.8	11.6	7.4	9.5	
35-39	10.1	4.1	7.0	9.4	4.1	6.7	11.5	7.2	9.3	9.3	6.3	7.7	12.3	3.1	7.6	8.4	4.7	6.5	9.2	4.4	6.7	9.2	4.9	7.0	9.9	4.5	7.1	
40-44	6.3	2.0	4.1	5.8	1.7	3.7	5.4	2.3	3.8	6.2	2.4	4.2	4.6	1.3	2.9	5.5	2.0	3.7	5.4	1.7	3.5	5.6	2.6	4.1	5.7	1.9	3.8	
45-49	2.6	1.8	2.2	3.7	2.0	2.9	2.9	2.3	2.6	3.8	2.3	3.0	2.5	2.2	2.4	4.4	2.2	3.3	3.4	2.2	2.8	2.7	0.7	1.7	3.2	2.0	2.6	
50-54	2.2	2.4	2.3	2.3	2.5	2.4	2.2	3.2	2.7	2.2	2.4	2.3	2.0	3.1	2.6	1.9	3.2	2.6	2.3	2.4	2.3	2.9	1.9	2.4	2.2	2.6	2.4	
55-59	1.9	2.0	1.9	1.6	1.6	1.6	2.6	1.5	2.0	2.7	2.8	2.8	2.2	2.2	2.2	2.5	2.1	2.3	2.2	2.7	2.5	1.3	1.3	1.3	2.1	2.1	2.1	
60-64	1.3	1.3	1.3	1.1	2.4	1.8	1.5	2.0	1.7	0.9	1.7	1.3	1.3	2.0	1.6	2.0	1.8	1.9	2.3	2.2	2.2	0.6	1.9	1.3	1.4	1.8	1.6	
65-69	1.1	1.2	1.1	1.0	0.9	0.9	1.3	1.5	1.4	0.7	0.5	0.6	1.5	1.4	1.5	1.0	0.8	0.9	1.3	1.5	1.4	0.4	1.1	0.8	1.1	1.1	1.1	
70-74	1.2	1.1	1.1	1.6	1.7	1.7	1.6	1.2	1.4	1.2	0.9	1.1	1.4	1.5	1.5	0.9	0.5	0.7	1.4	1.1	1.2	1.2	1.4	1.3	1.3	1.1	1.2	
75-79	0.6	0.3	0.5	0.5	0.2	0.4	0.3	0.1	0.2	0.5	0.2	0.3	1.1	0.3	0.7	0.5	0.2	0.3	0.6	0.4	0.5	0.4	-	0.2	0.6	0.3	0.4	
80+	0.9	0.8	0.8	1.1	1.4	1.2	1.3	0.7	1.0	0.5	0.3	0.4	0.6	0.7	0.7	0.2	0.4	0.3	1.5	1.1	1.3	1.2	0.3	0.7	0.9	0.8	0.8	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	3887	4083	7970	2386	2442	4828	687	748	1435	1480	3037	2049	2195	4244	2210	2312	4522	1509	1603	3112	939	979	1918	15147	15919	31086		

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachari and Bandarban districts



## 2.2 Household Composition

Table 2.2.1.a shows that 70% of the households in Bangladesh are composed of 3 to 5 members. In HIES 2010 it was 65.2%. The corresponding figures for urban and rural areas are 30.3% and 69.7% respectively. Average household size is 5.0 members in Bangladesh; urban household size is slightly smaller than the rural household size.

**Table 2.2.1.a: Mean size of household by residence**

Number of member	Urban	Rural	Total
1		0.0	0.0
2	0.1	0.1	0.1
3	19.8	17.4	18.2
4	28.6	26.9	27.4
5	23.3	25.1	24.5
6	13.3	14.5	14.1
7	6.2	8.2	7.6
8	4.1	4.2	4.2
9+	4.6	3.5	3.8
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Mean size of HH	4.9	5.0	5.0
<b>Number of HH</b>	<b>1900</b>	<b>4374</b>	<b>6274</b>

Table 2.2.1.b presents household compositions according to divisions. Result shows that average size of household is biggest in Sylhet (5.5) followed by Chittagong (5.4) and Barisal (5.2).

**Table 2.2.1.b: Mean size of household by divisions**

Number of member	Dhaka	Chittagong	CHT	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
1	0.1	--	--	--	--	--	--	--	0.0
2	--	0.1	0.7	0.2	0.1	0.1	0.2	--	0.1
3	20.1	11.2	20.3	22.9	19.8	19.4	15.0	14.3	18.2
4	29.0	23.0	26.7	27.8	32.0	29.4	24.5	18.9	27.4
5	24.0	24.9	25.3	26.5	25.4	24.8	22.0	23.4	24.5
6	13.4	18.7	14.0	12.3	11.4	11.7	17.7	16.9	14.1
7	6.4	11.6	8.0	6.3	5.2	5.7	10.3	11.7	7.6
8	3.2	5.2	3.7	1.1	3.8	4.2	7.2	7.7	4.2
9+	3.8	5.3	1.3	2.9	2.2	4.8	3.2	7.1	3.8
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Mean size of HH	4.8	5.4	4.8	4.7	4.7	4.9	5.2	5.5	5.0
<b>Number of HH</b>	<b>1649</b>	<b>900</b>	<b>300</b>	<b>650</b>	<b>900</b>	<b>925</b>	<b>600</b>	<b>350</b>	<b>6274</b>

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachari and Bandarban districts

### 2.3 Household Income- Expenditure

Table 2.3.1.a provides information on monthly income and expenditure by the households and by per capita in urban, rural and national level. Average monthly income per household at current price was estimated at taka 11839. It was taka 11479 at the national level in 2011 (HIES 2010). Per capita monthly income was estimated of taka 2368, which is 8% less than the per capita monthly income (taka 2553) as estimated in HIES 2010 at national level. This difference may be due to sampling fluctuation and other issues related to methodology of data collection. Average monthly expenditure per household at current price was estimated of taka 8325 and per capita monthly expenditure was estimated of taka 1665 at national level.

**Table 2.3.1.a: Monthly income and expenditure of surveyed household by rural urban location in taka**

Income and expenditure	Urban		Rural		Total	
	Income	Expenditure	Income	Expenditure	Income	Expenditure
Mean (per household)	13728	9286	11018	7908	11839	8325
Mean (per capita)	2802	1895	2204	1582	2368	1665

Table 2.3.1.b presents monthly household income and expenditure per household and per capita income by administrative divisions from the present survey. The highest average monthly household income was recorded at taka14297 for Chittagong Hill Tract and the highest average per capita monthly income was recorded in the same area at taka 3076 followed by Dhaka (average monthly household income at taka 13742 and average per capita monthly income at taka 3000).Among the administrative divisions, Dhaka, Chittagong and CHT exceeded the national average household income of taka11839 in this survey. The lowest average monthly household income was recorded at taka8917 for Rajshahi and lowest average per capita monthly income was recorded at taka 1913 for Rangpur. It reflects the national economic picture of the country.

In case of expenditure, Chittagong hill Tract is the highest in terms of both average monthly household expenditure which is taka 10578 and average per capita monthly expenditure which is taka 2246. Rajshahi is the lowest in terms of both average monthly household expenditure which is taka 5921 and average per capita monthly expenditure which is taka 1285.

**Table 2.3.1.b: Monthly income and expenditure of surveyed household by division in taka**

Monthly income-expenditure	Dhaka		Chittagong <sup>a</sup>		CHT <sup>b</sup>		Rajshahi		Khulna		Rangpur		Barisal		Sylhet		Total	
	Income	Expenditure	Income	Expenditure	Income	Expenditure	Income	Expenditure	Income	Expenditure	Income	Expenditure	Income	Expenditure	Income	Expenditure	Income	Expenditure
Mean (Per HH)	13742	8914	13351	9983	14297	10578	8917	5921	11465	7859	9113	7564	11424	7762	11180	8001	11839	8325
Mean (Per capita)	3000	1871	2487	1847	3076	2246	2024	1285	2549	1687	1913	1554	2321	1550	2137	1503	2368	1665

<sup>a</sup> Chittagong includes CHT

<sup>b</sup>CHT includes only Rangamati, Khagrachari and Bandarban districts

Table 2.3.2.a provides the percentage distribution of monthly expenditure of the households. It is seen that food accounts for 66.6%, 67.1% and 66.9% of total expenditure at urban, rural and national level respectively. HIES 2010 reported 54.81% monthly food expenditure per household and it was 62% of total expenditure per household in HFSNA 2009 (Household Food Security and Nutrition Assessment in Bangladesh 2009). Therefore percentage of monthly food expenditure has increased significantly in both rural and urban settings and it may be due to rising of food prices.

**Table 2.3.2.a: Percentage distribution of monthly Expenditure of surveyed Household**

Monthly expenditure	Urban	Rural	Total
Food	66.6	67.1	66.9
Education	5.4	4.5	4.8
Medicine	4.1	3.6	3.8
Transport	5.0	4.2	4.5
Living	6.7	3.2	4.4
Clothes	6.2	5.3	5.6
Agriculture	2.4	9.2	6.9
Others	3.5	2.8	3.1
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Table 2.3.2.b shows the percentage distribution of monthly expenditure on various sections of the households according to division. People residing in Sylhet division spend highest amount (74%) on food compared with other division. The amount is lowest (61.1%) in Rangpur.

**Table 2.3.2.b: Percentage distribution of monthly expenditure of surveyed Household by division**

Monthly expenditure	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Food	69.9	62.9	62.1	70.5	68.0	61.1	68.7	74.0	66.9
Education	4.9	5.2	6.3	2.9	3.4	4.8	7.0	4.1	4.8
Medicine	2.7	6.1	2.1	2.3	3.5	4.9	4.0	3.5	3.8
Transport	4.0	4.9	7.9	3.1	4.0	5.1	3.6	4.9	4.5
Living	6.1	3.3	6.5	4.8	2.7	3.2	3.6	5.2	4.4
Clothes	5.0	7.7	4.8	4.2	4.8	7.5	4.2	4.8	5.6
Agriculture	6.3	3.5	8.0	10.1	10.4	8.5	7.0	2.6	6.9
Others	1.2	6.4	2.3	2.1	3.2	5.0	1.9	1.0	3.1
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari & Bandarban districts

## 2.4 Housing Condition and Cooking Facilities

The information about characteristics of households, including arrangement of lighting, main housing materials, number of bed room and the place and type of fuel used for cooking were also collected in this survey. In order to assess the general well-being and socioeconomic status of household members, these physical characteristics of a household are important.

Table 2.4.1.a presents information on household characteristics. It is seen that 59.2% of total households has access to electricity and the second most common lighting arrangement is kerosene light the coverage being 43.7% in rural areas and 36.4% at national level. One of the most practical indications of the extent of crowding in households is the number of rooms used for sleeping. Crowding in one sleeping room facilitates the risks of infection. It has been shown nationally that 44.2% households use only one room and 35.7% household use two rooms for sleeping. Pattern of using the number of bed room is almost same in both rural and urban residence.

The most common roof material is tin and 88.3% of households live in dwellings with tin roofs. In rural households, wall of the house is mostly made of tin (43.9%) while in urban households it is concrete or cement (38.3%). Nationally 66.1 percent households have walls made of tin or concrete. The type of material used for floor is an indicator of economic standing of the household as well as an indicator of potential exposure to disease-causing agents. The most commonly used floor materials in Bangladesh are clay or earth. Three out of four households use earth or clay as the main floor material; the average is 75.5% nationally. The other floor materials used in the country are cement or concrete. About 40.2% of urban households have concrete floors. Earth floor is almost universal in the rural areas (83%).

**Table 2.4.1.a: Household characteristics- Percent distribution of HH by housing characteristics by residence**

Household Characteristics	Urban	Rural	Total
<i>Arrangement of lighting in the house</i>			
Kerosene light	10.5	20.7	36.4
Electric light	77.1	51.4	59.2
Kerosene + electricity	1.0	1.0	2.0
Solar light	0.4	1.8	1.4
Generator light	1.1	1.1	1.1
Total	100.0	100.0	100.0
<i>No of bed room of the house</i>			
One	42.2	45.2	44.2
Two	30.4	30.3	35.7
Three	14.2	11.8	12.5
Four	5.6	4.0	4.4
Five and above	3.7	2.8	3.1
Total	100.0	100.0	100.0
<i>Roof materials of the house</i>			
Bamboo fencing/palm leaves/bamboo	2.2	4.0	3.0
Tin	85.4	89.6	88.3
Concrete	10.1	3.7	6.7
Taly	1.2	1.1	1.1
Others	0.9	1.8	1.0
Total	100.0	100.0	100.0
<i>Main material of the house wall</i>			
Bamboo fencing/palm leaves/bamboo	15.1	20.1	18.6
Tin	30.1	20.9	41.0
Concrete	38.3	18.4	24.5
Mud wall	9.1	15.0	13.2
Others	1.5	2.5	2.2
Total	100.0	100.0	100.0
<i>Main material of the house floor</i>			
Wood	0.4	0.4	0.4
Bamboo	0.7	0.9	0.9
Concrete	40.2	15.3	27.8
Ceramic tiles	0.6	0.4	0.4
Clay	58.2	83.0	75.5
Total	100.0	100.0	100.0
<i>Separate Kitchen in the house</i>			
Yes	82.4	80.7	81.2
No	17.6	19.3	18.8
Total	100.0	100.0	100.0
<i>If no Separate Kitchen then alternatives</i>			
Open space	56.9	70.3	66.5
Share with others	29.8	13.4	16.3
In the living room	16.8	13.4	14.3
Others	3.1	3.0	3.0
Total	100.0	100.0	100.0
<i>Type of fuel used for cook</i>			
LPG	2.7	0.8	1.3
Natural gas	10.4	2.7	6.0
Kerosene	1.2	1.2	1.2
Wood	11.8	10.0	10.9
Kharkuta	20.8	29.3	26.7
Total	100.0	100.0	100.0
<i>Type of burner use for cook</i>			
Natural gas burner	14.8	3.0	6.0
Kerosene burner	0.9	0.6	0.7
Wood burner	80.6	93.9	89.9
LPG	2.2	1.8	1.9
Friend burner	0.7	0.4	0.5
Electric burner	0.1	0.0	0.1
Others	0.1	0.3	0.4
Total	100.0	100.0	100.0

Nationally 81.2% households have separate kitchen for cooking. Those, who have no separate kitchen, usually cook in open space or share with others or do it in the living room. The indoor air quality and the degree to which household members are exposed to the risk of respiratory infections and other diseases is associated with the type of fuel used for cooking, the place where cooking is done and the type of stove or burner. Almost all rural households use solid fuels (95.3%) for cooking using wood and "kharkuta" which means agricultural crops, grass, straw, shrubs, animal dung, coal etc. In urban areas, 82.6% of the households use wood and "kharkuta". About 89.9% households use wood burner which do not have any system for ventilating the indoor pollution from cooking fumes. Liquid petroleum gas (LPG) and natural gas is mostly used in urban areas. Household characteristics vary significantly among different administrative divisions with some exception. In almost all divisions, electric light is the most common lighting arrangement except in Rangpur and Barisal. Tin is the most predominant roofing materials

in all divisions. Vast variation is observed in main material of the house wall and house floor in different divisions. People residing in CHT have the highest coverage (74%) for separate kitchen in the house compared with other division. The lowest coverage (69.1%) was in Rajshahi.

**Table 2.4.1.b: Household characteristics: Percent distribution of households by housing characteristics by division**

Household characteristics	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
<b>Arrangement of lighting in the house</b>									
Kerosene light	26.9	33.2	38.3	23.8	35.9	54.1	50.5	40.9	36.4
Electric light	71.3	65.1	53.3	72.5	61.2	32.5	46.3	54.3	59.2
Kerosene+electricity	0.1	0.0	0.0	0.5	0.0	12.9	0.0	0.0	2.0
Solar light	0.5	1.0	8.3	0.2	0.7	0.3	3.2	4.6	1.4
Generator light	1.2	0.7	0.0	3.1	2.2	0.2	0.0	0.3	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>No of bed room of the house</b>									
One	52.9	30.2	25.7	46.0	47.2	52.1	33.3	42.6	44.2
Two	33.3	40.7	46.0	42.5	33.8	30.1	31.2	41.1	35.7
Three	9.2	14.0	19.7	7.8	13.3	11.1	22.2	11.4	12.5
Four	2.9	9.0	7.0	2.2	3.0	4.2	6.5	3.1	4.4
Five and above	1.8	6.1	1.7	1.5	2.7	2.5	6.8	1.7	3.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Roof materials of the house</b>									
Bamboo fencing/palm leaves/bamboo	1.8	9.7	8.0	0.9	3.3	3.7	2.8	5.4	3.9
Tin concrete	92.0	83.9	82.3	91.2	78.8	93.5	90.7	88.3	88.3
Taly	5.9	6.1	7.3	5.7	8.0	2.6	5.7	4.3	5.7
Others	0.1	0.0	0.0	0.9	7.0	0.0	0.0	0.3	1.1
Others	0.3	0.3	2.3	1.2	2.9	0.2	0.8	1.7	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Main material of the house wall</b>									
Bamboo fencing/palm leaves/bamboo	8.7	27.3	57.0	10.8	16.0	28.3	6.8	25.4	18.6
Tin concrete	61.3	37.7	0.7	21.1	21.3	40.2	79.3	22.3	41.6
Mud wall	24.8	17.3	24.0	31.2	36.7	19.7	10.8	33.7	24.5
Others	4.1	16.3	16.7	36.0	20.2	9.5	0.2	16.0	13.2
Others	1.0	1.3	1.7	0.9	5.8	2.3	2.8	2.6	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Main material of the house floor</b>									
Wood	0.2	0.2	2.3	0.2	0.3	0.4	0.5	0.0	0.4
Bamboo	0.5	0.6	5.0	1.1	0.3	1.0	0.7	0.6	0.9
Concrete	32.9	18.1	44.3	14.8	22.3	14.5	13.5	23.1	22.8
Ceramic tiles	0.1	0.3	0.3	0.5	1.0	0.5	0.2	1.1	0.4
Clay	66.2	80.8	48.0	83.5	76.0	83.6	85.2	75.1	75.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Separate Kitchen in the house</b>									
Yes	85.2	75.8	90.7	69.1	86.9	78.1	86.7	74.9	81.2
No	14.8	24.2	9.3	30.9	13.1	21.9	13.3	25.1	18.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>If no Separate Kitchen then alternatives</b>									
Open space	70.1	26.1	28.6	94.5	54.2	89.2	77.5	59.1	66.5
Share with others	17.6	40.4	0.0	1.0	20.3	6.4	2.5	21.6	16.2
In the living room	10.2	24.8	71.4	3.5	21.2	3.9	16.3	19.3	14.3
Others	2.0	8.7	0.0	1.0	4.2	0.5	3.8	0.0	3.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Type of fuel used for cook</b>									
LPG	2.2	0.2	7.7	0.3	0.3	1.1	0.5	1.1	1.3
Natural gas	16.2	6.3	2.3	0.2	0.2	0.4	0.2	10.3	6.0
Kerosene	0.7	1.6	2.0	0.9	0.8	1.6	1.3	1.7	1.2
Wood	55.7	81.4	85.3	39.2	76.0	41.4	93.2	78.9	64.8
Kharkuta	25.2	10.4	2.7	59.4	22.7	55.5	4.8	8.0	26.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Type of burner use for cook</b>									
Natural gas burner	17.8	6.6	4.3	0.3	0.2	0.9	0.2	10.6	6.6
Kerosene burner	0.9	0.4	0.7	0.9	0.2	0.6	1.0	0.9	0.7
Wood burner	79.3	90.7	82.7	97.4	98.2	94.6	96.0	86.3	89.9
LPG	1.5	1.8	9.0	1.1	0.9	2.2	2.0	1.4	1.9
Friend burner	0.3	0.4	1.0	0.3	0.2	1.2	0.2	0.3	0.5
Electric burner	0.1	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.1
Others	0.2	0.1	2.0	0.0	0.1	0.5	0.7	0.6	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachari & Bandarban districts

## 2.5 Household Possessions

Ownership of durable goods is a strong and useful indicator of household socioeconomic status. The possession and use of different household durable goods have different effects and significance. Table 2.5.1.a shows the percent of households that possess various durable commodities by residence. Findings reveal that television is the common information device possessed by most households in both rural (36.9%) and urban (58.9%) areas. Ownership of mobile phone varies slightly according to residence (urban 70.5% and rural 61.1%). Nationally only 3.7% household possess a radio. Access to a radio or television exposes household members to update themselves about recent events, information, and educational materials. Nationally only 5.4% household have computer.

Refrigerator has become an important household good as it prolongs food storage and keeps food fresh and hygienic. Availability of refrigerator in households varies according to residence. About 20.5% of urban household and only 6.5% of rural household have refrigerator.

Among other durable goods nationally, percent of household which have almirah/wardrobe, table/chair, khat, chowki and clock are 42%, 71.2%, 28.9%, 66.3% and 5.4% respectively. Ownership of transportation allows greater access to services away from the local area and enhances social and economic activities. Bicycling is the most common means of transportation nationally (37.6%) and ownership vary according to residence (rural 33.9% & urban 46.2%). Nationally 20 percent of households own a motorcycle/tempo. Ownership of a car/truck is 4.2% nationally. Moreover about 3.4% households have paddy husking machine.

**Table 2.5.1.a: Percentage of households possessing various durable consumer goods by residence**

Durable goods	Urban	Rural	Total
Radio	2.9	4.0	3.7
Television	58.9	36.9	43.6
Mobile Phone	70.5	61.1	63.9
Land Phone	3.4	2.3	2.6
Computer	5.5	5.4	5.4
Refrigerator	20.5	6.5	10.7
Almirah /Wardrobe	52.9	37.3	42.0
Table/Chair	73.1	70.4	71.2
Khat	28.6	29.0	28.9
Chowki	74.1	62.9	66.3
Clock	5.4	5.4	5.4
Bicycle	46.2	33.9	37.6
Motor cycle/Tempo	17.5	21.0	20.0
Car / Truck	5.4	3.6	4.2
Animal pulled vehicle	0.9	0.4	0.6
Motor boat	0.0	0.1	0.1
Rickshaw/Rickshaw van	0.3	0.2	0.2
Tractor/Power Tiller	1.4	1.0	1.1
Hand sewing machine	0.3	0.7	0.6
Paddy Husking Machine	1.6	4.2	3.4
<b>Total</b>	<b>97.3</b>	<b>94.8</b>	<b>95.6</b>

## 2.6 Background Characteristics of Respondents

The demographic and socioeconomic profile of the respondents is important in the interpretation of findings and for understanding the level of knowledge and attitudes concerning different nutrition and health issues. The survey collected basic information on respondents' age, level of education, religion, residence and also some other information.

Results show that about 81% of the women are aged between 25 to 44 years and almost all respondent (98.7%) women are currently married. The majority of women (69.7%) reside in the rural areas. The total numbers of

respondents vary according to administrative divisions. The highest number of respondents (26.3%) lives in Dhaka.

Considering level of education, about 27.3% of respondent women have no education, 10.2 % did not complete primary education while 15.9% of women completed primary education. Moreover 34.4% did not complete secondary education and 12.2% of women completed secondary or higher-level education. The vast majority of the respondents (89.4%) are Muslims. Among the remaining women, 6.1% are Hindus, 3.8% are Buddhists and 0.6% are Christians.

**Table 2.6.1.a: Different characteristics of respondents**

<b>Characteristics</b>	<b>Number</b>	<b>Percent (%)</b>
<b>Age</b>		
15-19	2	0.0
20-24	230	3.7
25-29	1248	19.9
30-34	1574	25.1
35-39	1428	22.8
40-44	824	13.1
45-49	440	7.0
50 and above	528	8.4
<b>Marital Status</b>		
Currently Married	6192	98.7
Widow	48	0.8
Left / Separated	14	0.2
Divorced	20	0.3
<b>Residence</b>		
Urban	1900	30.3
Rural	4374	69.7
<b>Division</b>		
Dhaka	1649	26.3
Chittagong <sup>a</sup>	900	14.3
CHT <sup>b</sup>	300	4.8
Rajshahi	650	10.4
Khulna	900	14.3
Rangpur	925	14.7
Barisal	600	9.6
Sylhet	350	5.6
<b>Education</b>		
No education	1669	27.3
Primary incomplete	623	10.2
Primary completed	972	15.9
Secondary incomplete	2113	34.5
Secondary completed and higher	747	12.2
<b>Religion</b>		
Muslim	5612	89.4
Hindu	384	6.1
Buddhist	239	3.8
Christian	39	0.6
<b>Total</b>	<b>6274</b>	<b>100.0</b>

<sup>a</sup>Chittagong includes CHT

<sup>b</sup>CHT includes only Rangamati, Khagrachari & Bandarban districts

To increase people's knowledge and awareness of present or updated events, access to different types of mass media is a must. The present survey collects information about the level of access to media of respondents. Listening a radio, watching television, or reading newspapers or magazines are the most common way to get information about local, national, international or educational events.

In order to spread information about nutrition, health and related issues, it is important to know about the accessibility to different types of mass media of the target group of people.

Table 2.6.1.b presents that among all respondents 7.0% percent read a newspaper at least once a week, 53.4% watch television at least once a week and 4.3% listen to the radio at least once a week.

**Table 2.6.1.b : Percent distribution of respondents by exposure to mass media according to residence**

Mass media and communication devices	Urban	Rural	Total
Read newspaper at least once a week	10.8	5.3	7.0
Listen Radio at least once a week	4.6	4.2	4.3
Watch television at least once a week	68.1	46.9	53.4

Exposure of respondents to mass media varies significantly according to residence and television is the most common media. Women who reside in urban area are more likely to watch television and it is also true for reading newspaper.



### Food Security, Poverty, Agriculture, Food Consumption and Physical Activity

This chapter is described under two sections comprising section 3.1 Agriculture, Food Security and Poverty Level and section 3.2 Food Consumption and Physical Activity level.

#### 3.1 Food Security, Poverty Level and Agriculture

The concept of food security is a broader horizon encompassing a large number of aspects like agro-economic, infrastructural and social along with health and nutrition. Food security refers to physical and social access by all people at all times to enough food for a healthy productive life (FAO, 2000). Conversely, food insecurity exists when people lack transiently or persistently, access to sufficient quantities of safe and nutritious food required for normal growth and development and for an active and healthy life.

As per Millennium Development Goals one (MDG-1), Bangladesh by the year 2015 has to eradicate hunger, chronic food insecurity and extreme destitution. The essential elements of the concept of food security are availability of food, ability to acquire it from the market and the ability to utilize the consumed food in the body system.

The adequate supply or availability of food at national level is important but not enough for food security as there is high inequality in the distribution of income. Availability of food at the national or community level does not ensure its equitable access to all. At the household level, an individual can obtain food from different sources. Acquisition of food from the market is mainly determined by the household economic status. Utilization of the nutrients available from the consumed food depends on infection-free health situation which ensure the nutritional security as well.

Agriculture is linked to hunger and food insecurity both in direct and indirect manners. A number of factors are related with food security and adequate nutrition i.e. the availability of food, economic access to food and the way food is used including interactions between diet and disease. Agriculture has direct influence in the first two categories and has indirect effects (e.g. through income) on the third. Thus agriculture contribute to food security by increasing the availability of food at prices that the poor can afford and by providing jobs and incomes which will give poor people the means to access food.

##### 3.1.1 Household Food Security Status

Food insecurity is a complex and multidimensional phenomena. It varies through a continuum of successive stages as the condition becomes more severe. Each stage consists of characteristic conditions and experiences of food insufficiency to fully meet the basic needs of household members and of the behavioral responses of household members to these conditions. A variety of indicators is needed to capture the various combinations of food conditions, experiences and behaviors that, as a group, characterize each such stage. The full range of food insecurity and hunger cannot be captured by any single indicator.

Instead, a household level of food insecurity or hunger must be determined by obtaining information on a variety of specific conditions, experiences and behaviors that serve as indicators of the varying degrees of severity of the condition. Household surveys are usually used to get this qualitative measure of food insecurity.

In order to get a measure of a household food security, all respondents were asked whether they ever face any type of food shortage at any time of the year. It is revealed that 74.4% of all households never ever faced any kind of food shortage indicating that these households are apparently food secured at least in term of quantity of food.

At national level, 14.4% households sometimes and 11.2% households often face food shortage (table 3.1.1.1). Rural households are more likely to face food deficit sometimes in the year than urban households (15.4% versus 11.9%).

Table 3.1.1.1: Ever face food shortage at household level by residence

	Urban		Rural		Total	
	Number	%	Number	%	Number	%
Never ever	1480	77.9	3190	72.9	4670	74.4
Sometimes	227	11.9	674	15.4	901	14.4
Often	193	10.2	510	11.7	703	11.2
<b>Total</b>	<b>1900</b>	<b>100.0</b>	<b>4374</b>	<b>100.0</b>	<b>6274</b>	<b>100.0</b>

Households pass through different experiential and behavioral stages as food insecurity becomes more severe. Household food security measurement scales cover one or more of three main themes: (1) experiencing anxiety and uncertainty about the food supply, (2) altering quality of the diet and (3) reducing quantity of food consumption. A set of questions that describe behaviors in situations of increasing food insecurity are used in this survey.

In order to assess the degrees of severity of food insecurity condition among the households experiencing food shortage (total no 1604 or 25.6% of the surveyed household), the following questions are asked. Since this 'direct measure' of food insecurity is based on self-reporting behavior, it is often assumed that respondents' perceptions of the experience of food insecurity are fully reflected in their answers.

Among the households experiencing at least some sort of food shortage, 81% households sometimes and 14% household often remain anxious about the next meal (table 3.1.2.a). About 77% of the households face the food shortage or deficit in a specific time of the year which indicates transitory or current food insecurity. Transitory or current food insecurity exists when a population suffers a temporary decline in food consumption. It can be due to seasonal factors or unexpected external events such as natural disasters. Transitory food insecurity may lead to chronic food insecurity.

Table 3.1.1.2.a: Food security situation in households experiencing food shortage (percent distribution)

Food security	Urban	Rural	Total
<i>Remain anxious about what will eat in the next meal</i>			
Often	12.9	14.4	14.0
Sometimes	81.7	77.7	81.0
Never ever	4.5	4.4	4.4
Others	1.0	6.4	0.5
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<i>Face this food shortage in any specific time of the year</i>			
Yes	69.0	79.2	76.6
No	31.0	20.8	23.4
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<i>Feel that all member of the family is not getting balanced food</i>			
Often	9.3	11.7	11.1
Sometimes	74.4	74.0	73.4
Never ever	12.1	11.4	11.6
Others	3.1	3.8	3.9
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<i>Borrow food from neighbor</i>			
Often	7.9	10.1	9.5
Sometimes	79.9	77.3	82.4
Never ever	9.3	7.7	8.1
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<i>Eat food less than 3 times a day due to shortage of food</i>			
Often	6.0	6.1	6.0
Sometimes	77.8	76.5	75.8
Never ever	19.8	17.4	18.0
Others	6.5	0.0	0.1
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<i>Child have/had to eat less food (Less than three times a day)</i>			
Often	2.1	3.1	2.9
Sometimes	15.5	19.4	16.4
Never ever	81.9	77.3	78.5
Others	0.5	0.2	0.2
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<i>Duration of children getting less food to eat (Less than three times a day)</i>			
1 day	3.8	3.8	3.8
2 days	2.1	4.0	3.0
3 to 10 days	3.8	3.6	3.7
11 to 30 days	6.2	6.3	6.2
Not applicable	90.0	88.3	88
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Respondents were asked whether all household members are getting balanced food or not (after giving basic concept about balance food). Eleven percent said that all members of the family often and 73% members sometimes are not getting balanced food. About 10% household often and 82% household sometimes borrow food from neighbor as a coping strategy in food shortage situation.

In severe food shortage condition food intake for adults in the household has been found to reduce. Adults of 6% households often and 76% households sometimes eat food less than 3 times a day due to shortage of food. In most but not all food-insecure households with children, such reductions are not observed at this stage for children. In most severe level of food insecurity, children consume less food in all the households indicating that children experience hunger. Children of 3% households often and 15% households sometimes have to eat food less than 3 times a day and duration of this condition sometimes remain three to ten days (about 4%). In all levels, food shortage or deficit in rural households is more severe than that in the urban households.

Table 3.1.1.2.b presents division wise food security situation in households experiencing food shortage and the result shows that different stages of food insecurity vary significantly according to division.

**Table 3.1.1.2.b: Food security situation in households experiencing food shortage (% distribution) according to division**

Food security	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
<b>Remain anxious about what will eat in the next meal</b>									
Often	13.9	19.0	9.1	9.4	8.9	18.8	6.4	13.3	14.0
Sometimes	84.0	79.6	84.8	89.4	84.4	74.0	80.1	79.5	81.0
Never ever	1.5	1.4	3.0	1.1	6.1	6.3	12.8	6.0	4.4
Not applicable	0.5	0.0	3.0	0.0	0.6	1.0	0.7	1.2	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Face this food shortage in any specific time of the year</b>									
Yes	85.1	58.2	78.8	94.7	80.4	73.7	78.0	66.3	76.6
No	14.9	41.8	21.2	5.3	19.6	26.3	22.0	33.7	23.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Feel that all member of the family is not getting balanced food</b>									
Often	14.4	9.2	12.1	7.9	10.6	9.4	11.3	28.9	11.1
Sometimes	73.2	78.2	72.7	90.2	74.9	60.5	78.7	62.3	73.4
Never ever	2.1	4.1	12.1	1.5	10.6	29.6	9.2	8.4	11.6
Others	10.3	8.5	3.0	0.4	3.9	0.5	0.7	6.0	3.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Borrow food from neighbor</b>									
Often	9.8	11.9	3.0	4.5	8.4	11.8	12.1	4.8	9.5
Sometimes	85.1	86.1	78.8	94.7	77.7	77.6	76.6	69.9	82.4
Never ever	5.2	2.0	18.2	0.8	14.0	10.6	11.3	25.3	8.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Eat food less than 3 times a day due to shortage of food</b>									
Often	6.7	4.4	3.0	3.8	6.1	10.1	2.1	4.8	6.0
Sometimes	85.1	56.5	86.7	84.0	60.9	78.1	83.7	75.9	75.8
Never ever	8.2	39.1	30.3	2.3	32.4	11.8	13.5	19.3	18.0
Others	0.0	0.0	0.0	0.0	0.6	0.0	0.7	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Child have/had to eat less food (Less than three times a day)</b>									
Often	1.5	1.7	0.0	2.3	6.7	3.1	4.3	1.2	2.9
Sometimes	6.7	13.6	6.1	6.8	34.6	10.6	71.6	18.1	18.4
Never ever	91.8	84.7	93.9	90.9	57.5	86.0	24.1	79.5	78.5
Others	0.0	0.0	0.0	0.0	1.1	0.2	0.0	1.2	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Duration of children getting less food to eat (Less than three times a day)</b>									
1 day	0.0	0.7	0.0	0.8	15.6	1.7	15.6	0.0	3.8
2 days	0.5	1.0	0.0	0.4	6.7	2.7	19.1	1.2	3.5
3 to 10 ays	2.1	1.7	6.1	0.4	6.7	3.4	11.3	6.0	3.7
11 to 15 days	0.0	0.0	0.0	0.4	0.6	0.5	0.0	0.0	0.2
Not applicable	97.4	96.6	93.9	98.1	70.4	91.8	53.9	92.8	88.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachari and Bandarban districts

Inadequate household food security is one of the major underlying causes of malnutrition in Bangladesh. In order to improve the nutritional status, food security should be ensured at household level as well as in the individual level.

### 3.1.2 Ownership of Land and Livestock: Agricultural Assets

Land is one of the basic agricultural assets and livestock can be considered as output of agriculture as well as asset. In the rural settings, income and food security is often dependent on ownership or access to various natural and physical assets. A natural asset like land is not only a source of productivity and livelihood but also a determinant of security and shelter. Physical assets, both productive and non-productive, on the other hand, are essential for maintaining livelihood when natural assets are scarce or not available. Physical assets like livestock and poultry can help a household by increasing income through the sale of their products in the market. Moreover, these products can also be domestically consumed, thus creating an expenditure saving mechanism.

Table 3.1.2.1 presents the percent distribution of household by ownership of land. The result shows that about 87.8% of households own a homestead, while 22.6% own land for agriculture other than a homestead. Ownership of a homestead or other land is more common in rural than in urban areas. Nationally, about 12% household have no land.

**Table 3.1.2.1: Percent distribution of household by ownership of land**

Ownership of land	Urban	Rural	Total
Homestead land	78.7	91.8	87.8
<b>Agricultural land</b>	<b>9.5</b>	<b>28.4</b>	<b>22.6</b>
Others	9.6	18.9	16.1
<b>No land</b>	<b>21.2</b>	<b>7.8</b>	<b>11.8</b>

In the present survey, information on ownership of domestic and farm animals were also collected. The result shows (Table 3.1.2.2) that rural households are more likely than urban households to own each type of livestock as expected. Chicken are the most commonly owned type of livestock, which are owned by 38.2% of households. About 28% households own cows, and the third most common livestock is duck (19.6%) followed by goat (13.7%).

**Table 3.1.2.2: Percent distribution of household by ownership of farm animals**

Ownership of farm animals	Urban	Rural	Total
Cows	13.6	34.5	28.2
<b>Goats</b>	<b>8.1</b>	<b>16.2</b>	<b>13.7</b>
Sheep	0.8	0.6	0.7
<b>Buffalos</b>	<b>0.0</b>	<b>0.4</b>	<b>0.3</b>
Chicken	23.9	44.4	38.2
<b>Ducks</b>	<b>12.0</b>	<b>22.8</b>	<b>19.6</b>
Pigeons	1.2	2.2	1.9
<b>Pigs</b>	<b>1.3</b>	<b>1.0</b>	<b>1.1</b>
Horses	0.0	0.0	0.0
<b>Others</b>	<b>0.2</b>	<b>0.0</b>	<b>0.1</b>
No animal	61.6	32.9	41.6

### 3.1.3 Agricultural Production

Bangladesh is primarily called an agricultural country. Most of the people of the country are directly or indirectly involved in agricultural related activities and the performance of this sector has an overwhelming impact on employment generation, poverty alleviation, human resources development and food security. The GDP share of agriculture is around 22 percent and this section employs 48 percent of labor force (BBS, 2010). The major agricultural products are different types of cereals, pulses, oilseeds, vegetables, fruits, cash crop and spices.

The NHDSBD-2011 collects information regarding involvement of household in agricultural production. Table 3.1.3.1 presents the distribution of household by their land used for agriculture according to the ownership of land. The result indicates that, among 6274 surveyed household 29.1% households are directly involved in agriculture with the proportion of rural household being significantly higher than urban households (35.8%vs 13.7%). On the other hand, 4.7% of household possess land but that land is not used for agricultural purpose. Considering the ownership of land for agricultural use, 19.4%of household have their own land, 7.7% households rented the land and 0.1% households use government khash land. Moreover 2.5% of surveyed households rented out their own land which is being used for agricultural production. Overall mean size of the land being used for agriculture is 207.3 decimal.

**Table 3.1.3.1: Distribution of household by use of land by residence**

Household by land and agriculture	Urban				Rural				All			
	No of hh	% of hh	Mean land (decimal)	SD	No of hh	% of hh	Mean land (decimal)	SD	No of hh	% of hh	Mean land (decimal)	SD
Number of household involved in agriculture production and mean total land area being used for production	260	13.7	216.3	305.1	1566	35.8	205.8	289.9	1826	29.1	207.3	292.0
No. of household having land but not using for agricultural production	44	2.3	147.8	336.7	251	5.7	107.7	130.9	295	4.7	113.7	177.1
No. of household using <i>own land</i> for agriculture production and mean land area being used for production	135	7.1	234.4	320.9	1082	24.7	198.8	302.3	1217	19.4	202.7	304.5
No. of household using <i>rented land</i> for agriculture production and mean land area being used for production	71	3.7	142.9	144.7	410	9.4	142.4	163.2	481	7.7	142.5	160.5
No. of household using <i>govt.Khash land</i> for agriculture production and mean land area being used for production	0	0.0	0.0	0.0	7	0.2	339.0	536.6	7	0.1	339.0	536.6
No. of household <i>rented out his own land</i> and mean land area <i>rented out</i> being used for production	47	2.5	231.3	353.1	108	2.5	196.3	269.8	155	2.5	206.9	296.8

#### 3.1.3.1 Cereal, Vegetables and other Crops

In the present survey agricultural products are categorized as cereals (IRRI/BORO, Aush, Aman and wheat), cash crop (Jute, sugar cane and tobacco), oil seeds (Mustard), spices (Chili, dhania, onion and garlic), vegetables (Brinjal, radish, potato and cauliflower), fruits (Banana, mango, guava, lichi and jack fruit) and some others. Table 3.1.3.2 shows the household involved and mean land (all type of land i.e. own, rented and govt. khash land) used for the production of these crops. About 27.51% of total surveyed household produce cereal. The mean land area used for cereal production is 165.3 decimal and mean productions are 3416 kg per household. Moreover, 4.14% and 3.62% of households were involved in the production of cash crop and vegetable respectively.

**Table 3.1.3.2: Household yearly production by type of crops in all type of land (own, rented, khash)**

Household by crops	Urban				Rural				All			
	No. of hh	% of hh	Mean land area used (decimal)	Mean amount produced (kg) ± SD	No. of hh	% of hh	Mean land area used (decimal)	Mean amount produced (kg) ± SD	No. of hh	% of hh	Mean land area used (decimal)	Mean amount produced (kg) ± SD
Cereal (IRRI/BORO, Aush, Aman and Wheat)	257	4.10	178.6	3538 ± 5168	1469	23.41	163	3395 ± 5997	1726	27.51	165.3	3416 ± 5880
Cash crop (Jute, Sugar cane and Tobacco)	18	0.29	65.5	862 ± 823	242	3.86	82.8	1381 ± 3104	260	4.14	81.6	1349 ± 3014
Oil seeds (Mustard)	8	0.13	48.3	254 ± 217	38	0.61	71.8	296 ± 275	46	0.73	67.7	289 ± 264
Spices (Chilli, Dhania, Onion and Garlic)	8	0.13	78	544 ± 480	69	1.10	50	561 ± 1044	77	1.23	52.9	559 ± 1003
Vegetables (Brinjal, Radish, Potato and Cauliflower)	20	0.32	74	2157 ± 1755	207	3.30	68	2620 ± 4976	227	3.62	68.6	2581 ± 4786
Fruits (Banana, Mango, Guava, Lichi and Jack fruit)	2	0.03	73	1600	18	0.29	190.3	2450 ± 2325	20	0.32	178.6	2238 ± 1946
Others	1	0.02	20	160	154	2.45	79.1	1289 ± 2837	155	2.47	78.7	1281 ± 2829

Table 3.1.3.3 presents information on yearly production of different agricultural products by using only own land. About 18.07% of households use only own land for cereal production, while for cash crop and vegetable production the percentage is 2.96 and 2.82 respectively.

**Table 3.1.3.3: Distribution of households by yearly production of crops (by using own land only)**

Households by yearly production of crops	Urban				Rural				Overall						
	No. of hh	% of hh	Mean land area used (decimal)	Mean amount produced (kg)	Mean amount produced ± sd	No. of hh	% of hh	Mean land area used (decimal)	Mean amount produced (kg)	Mean amount produced ± sd	No. of hh	% of hh	Mean land area used (decimal)	Mean amount produced (kg)	Mean amount produced ± sd
Cereal	135	2.15	203.2	4218	6530	999	15.92	158.4	3428	6519	1134	18.07	163.8	3522	6523
Cash crop	7	0.11	66.7	677	460	179	2.85	78.4	1441	3534	186	2.96	78	1412	3470
Oil seeds	6	0.10	58.5	317	216	23	0.37	81.7	356	322	29	0.46	76.9	348	300
Spices	5	0.08	53.8	505	574	46	0.73	54.9	701	1246	51	0.81	54.8	685	1202
Vegetables	14	0.22	79.4	2572	1808	163	2.60	66.6	2760	5297	177	2.82	67.6	2746	5117
Fruits	2	0.03	73	1600	-	17	0.27	192.9	2183	1934	19	0.30	180.3	2038	1606
Others	1	0.02	20	160	-	105	1.67	70.8	1209	2855	106	1.69	70.3	1198	2842

### 3.1.3.2 Homestead Vegetable and Fruits

Regarding homestead gardening among 6274 surveyed households, only 1397 (22.27%) households produce different types of vegetables and fruits in their home yard (14.7% of urban households and 25% of rural households).

### 3.1.3.3 Fish

Fish is the most predominant source of the animal protein in the Bangladeshi diet. Information on fish production was also collected in the NHDSBD-2011 and the result reveals that among the surveyed 6274 households, only 488 (7.8%) households are involved in fish cultivation (3.6% of urban households and 9.6% of rural households). Out of the survey, it is found that households involved in fish production, sometime hold several ponds at a time. Thus total number of ponds is 794 with most of them (697) being located in rural area. Table 3.1.3.4 presents the number of pond, type of ownership of pond, minimum, maximum and mean size of the pond. Most of the ponds (61.46%) are households' own property. There are huge differences between the minimum and maximum size of the ponds.

**Table 3.1.3.4: Distribution of ponds used for fish production by ownership of pond**

Fish production Variable	Total Pond	Own pond	Rented pond	Govt. Khash pond
<b>Urban</b>				
No of pond	97	69	20	8
% of pond	12.22	8.69	2.52	1.01
Mean (Decimal) ± SD	10.6 ± 17.5	13.2 ± 19.6	5.2 ± 8.8	2.0 ± 1.3
Minimum (Decimal)	1.0	1.0	1.0	1.0
Maximum (Decimal)	100.0	100.0	40.0	5.0
<b>Rural</b>				
No of pond	697	419	190	88
% of pond	87.78	52.77	23.93	11.08
Mean (Decimal) ± SD	13.9 ± 38.4	16.1 ± 40.5	12.9 ± 40.4	5.4 ± 17.1
Minimum (Decimal)	1.0	1.0	1.0	1.0
Maximum (Decimal)	400.0	400.0	264.0	120.0
<b>All</b>				
No of pond	794	488	210	96
% of pond	100.00	61.46	26.45	12.09
Mean (Decimal) ± SD	13.5 ± 36.5	15.7 ± 38.2	12.2 ± 38.6	5.1 ± 16.4
Minimum (Decimal)	1.0	1.0	1.0	1.0
Maximum (Decimal)	400.0	400.0	264.0	120.0

Table 3.1.3.5 shows the amount of fish production by type of fish in kg per decimal of pond. Ruhi, katla, pangas, silver carp, grass carp and telapia are the most commonly cultivated fish among spreading the surveyed households engaged in fish production. About half of the ponds (51.51%) are used for the production of ruhi fish. The minimum, maximum and mean amount of different fish production vary significantly according to residence and type of fish.

**Table 3.1.3.5: Production of different types of fish in Kg per decimal of pond**

Type of fish, ponds and amount	Mean and range	Ruhi	Katla	Pangas	Silver carp	Telapia	Grass Carp	Others
<b>Urban</b>								
No of pond (97)		50	8	7	8	6	3	15
% of pond		6.30	1.01	0.88	1.01	0.76	0.38	1.89
Amount of production (kg/dec)	Mean ± SD	23.1 ± 30.2	13.2 ± 8.5	81.2 ± 185.0	14.3 ± 13.1	15.4 ± 18.9	5.0 ± 1.0	28.4 ± 35.7
	Min	0.3	0.3	0.6	0.6	0.9	4	0.5
	Max	120	20	500	37.5	50	6	120
<b>Rural</b>								
No of pond (697)		359	59	30	70	39	11	129
% of pond		45.21	7.43	3.78	8.82	4.91	1.39	16.25
Amount of production (kg/dec)	Mean ± SD	35.7 ± 223.6	14.4 ± 19.1	51.9 ± 88.4	28.4 ± 119.7	13.7 ± 13.3	13.4 ± 12.1	18.7 ± 43.1
	Min	0.1	0.3	0.1	0.5	0.3	4	0.1
	Max	4000	100	428.6	1000	50	40	400
<b>All</b>								
No of pond (794)		409	67	37	78	45	14	144
% of pond		51.51	8.44	4.66	9.82	5.67	1.76	18.14
Amount of production (kg/dec)	Mean ± SD	34.1 ± 209.7	14.3 ± 18.2	57.5 ± 110.1	26.9 ± 113.4	14.0 ± 13.9	11.6 ± 11.2	19.7 ± 42.4
	Min	0.1	0.3	0.1	0.5	0.3	4	0.1
	Max	4000	100	500	1000	50	40	400

Table 3.1.3.6 shows the average amount of annual fish production and their uses. In case of most of the fishes, household consumption is main way of utilization. The annual average production of pangas fish is highest (829.7 Kg) followed by that of silver carp (580.9 Kg) and rui fish (162.3 Kg) amongst production of other fish.

**Table 3.1.3.6: Type of fish produced and their uses according to residence**

Variable	Fish	Average amount (kg) of fish produced in whole year	Total Price* of fish produced in BDT	% of fish produced consumed at hh level	% of fish sale in the market	Total yearly income* by selling fish in BDT
Urban	Rui	117.8	11695	73.9	26.1	3502
	Katla	40.0	4675	60.0	40.0	2090
	Pangas	771.4	75700	75.0	25.0	72457
	Silver carp	48.9	4138	68.8	31.3	1110
	Telapia	39.2	3833	88.3	11.7	47
	Grass Carp	6.7	600	100.0	0.0	0
	Others	378.0	32491	63.3	36.7	8416
	Rui	168.5	16197	73.8	26.2	9483
	Katla	47.5	4318	81.4	18.6	1116
Rural	Pangas	843.3	73040	55.5	44.5	59628
	Silver carp	641.7	40402	81.5	18.5	35450
	Telapia	46.7	4344	88.1	11.9	674
	Grass Carp	29.2	2384	74.1	25.9	515
	Others	85.7	8439	77.2	22.8	3623
	Rui	162.3	15647	73.8	26.2	8751
	Katla	46.6	4361	78.9	21.1	1232
	Pangas	829.7	73543	59.2	40.8	62055
	Silver carp	580.9	36682	80.2	19.8	31928
All	Telapia	45.7	4276	88.1	11.9	591
	Grass Carp	24.4	2001	79.6	20.4	405
	Others	116.1	10944	75.8	24.2	4122

\*Price of fish is estimated in 2011-2012 market prices in Bangladeshi Taka (BDT)

### 3.1.4 Poverty measurement

Poverty is the major cause of food insecurity. Different measures (e. g. income, expenditure and calorie intake) provide different figures regarding its incidence. There are three available approaches to measure poverty-(i) a direct method using information on calorie consumption, (ii) an indirect method using data on income/expenditure and (iii) a qualitative method using the perception of the respondents. None of these methods are comparable to each other across time and space (Ravallion and Sen, 1996).

**Table 3.1.4.1: Percent of households below poverty line by division**

Division	Percent of households per capita Kcal intake $\leq$ 1805 kcal (Hard core poverty)	Percent of households per capita Kcal intake $\leq$ 2122 Kcal (Absolute poverty)
Dhaka	36.6	56.0
Chittagong	47.4	68.7
CHT	31.3	47.0
Comilla	44.8	68.6
Khulna	30.6	50.2
Rangpur	27.0	47.6
Barisal	24.3	43.8
Sylhet	46.6	66.9
Total	35.9	56.1

The direct calorie intake (DCI) method used in poverty measurement emphasizes only on average calorie intake. In the present survey, as documented by DCI, 35.9% of household remain below hard core poverty line (per capita Kcal intake  $\leq$ 1805kcal) and for absolute poverty (per capita kcal intake  $\leq$ 2122kcal) the figure is 56.1 percent. Percent of households below poverty line by district is also incorporated in annexure (Annex A).



### 3.2 Food Consumption and Physical Activity Level

In the NHSD-2011, detail information on dietary intake was collected to investigate intake of energy, protein and other important nutrients at individual and household level by 24 hours recall method. In this retrospective method, the individual were asked to provide estimates of the amount of food and drink they have consumed during the previous 24 hour period. The 24-hours recall method is greatly valued for its ability to estimate nutrient intakes of population groups. This method is used widely to compare nutrient intakes with specific dietary recommendations. The major limitation of recalls is that they are seldom representative of usual intake.

A set of standard measuring cups used for measuring the foods or for indicating the serving and amount (grams) were used to assess the quantity of consumption. The amount of food was collected both in raw and cooked form. Cooked food was then converted to raw food weight by using appropriate conversion factors (Ali, 1991). Nutrients values (protein, carbohydrate, fat, calcium, iron, vitamin C, carotene and retinol) were calculated per 100 gram of raw food consumed (edible portion only) by using the updated Food Composition database for Bangladesh (Islam *et. al.*, 2010).

#### 3.2.1 Food Intake

Table 3.2.1.1 present the amount of food in gram according to food groups. In the cereals group, the per capita per day intake is 461.1 gram in which rice contributed 435.9 gram, wheat 16.8 gram and other cereals 7.8 gram.

The consumption of food items like vegetables, milk and milk products, meat, cereals, poultry, egg, fish and fruits vary according to residence. For example, the consumption of meat/poultry/egg is lower in rural areas (29.7%) compared with that in urban areas (37.2%). Per capita per day consumption of fish is 126.7 gram nationally. Per capita per day consumption of edible oil is 21.7 gram. Per capita per day consumption of milk and milk product is 16.9 gram.

**Table 3.2.1.1: Food consumption (gm/Person/day) by food groups and residence**

Food group	Urban	Rural	Total
<b>Cereals</b>	<b>436.9</b>	<b>471.6</b>	<b>461.1</b>
Rice	406.3	448.7	435.9
Wheat	22.8	14.2	16.8
Others	7.2	8.1	7.8
Potato	0.5	0.5	0.5
<b>Vegetables</b>	<b>267.6</b>	<b>268.9</b>	<b>268.5</b>
Leafy vegetables	33.5	37.7	36.4
Non-Leafy Vegetables	234.0	231.2	232.1
<b>Pulses</b>	<b>18.5</b>	<b>14.7</b>	<b>15.9</b>
Mushoor	12.2	9.1	10.0
Kheshari	0.8	1.4	1.2
Others	5.6	4.2	4.6
<b>Meat/Poultry/Eggs</b>	<b>37.2</b>	<b>29.7</b>	<b>32.0</b>
Mutton/ beef /chicken / duck	0.5	0.1	0.2
Beef	8.8	7.2	7.7
Chicken / duck	15.7	13.9	14.5
Mutton	2.2	0.7	1.2
Eggs	8.6	6.5	7.1
Others	1.4	1.2	1.2
<b>Fish</b>	<b>137.0</b>	<b>122.2</b>	<b>126.7</b>
Small fish	15.9	15.4	15.5
Medium and large fish	56.2	50.3	52.1
<b>Edible oil</b>	<b>25.3</b>	<b>20.2</b>	<b>21.7</b>
<b>Fruits</b>	<b>22.5</b>	<b>18.5</b>	<b>20.4</b>
<b>Milk and milk product</b>	<b>17.1</b>	<b>16.8</b>	<b>16.9</b>
<b>Sugar/Molasses (Gur)</b>	<b>10.6</b>	<b>10.9</b>	<b>10.8</b>
Sugar	2.8	2.7	2.7
Molasses (Gur)	0.3	0.5	0.5
Miscellaneous	7.5	7.7	7.6
<b>Total</b>	<b>907.8</b>	<b>917.9</b>	<b>914.9</b>

### 3.2.2 Calorie and other Nutrient Intake

Per capita (per day) calorie intake is one of the most commonly used indicators for assessment of food insecurity and vulnerability at individual as well as household level. Result shows that overall per capita per day calorie intake is 2222.1 kcal. The value was 1868 kcal/capita/day in last Bangladesh National Nutrition Survey of 1995/96 by INFS of Dhaka University (Jahan K. 1998). In HIES 2010, the average calorie intake was estimated to be 2318.3 kcal per capita per day. This value is 4.1 percent higher than the calorie intake estimated in NHDSBD-2011. In the NHDSBD-2011, only "Edible portion" is converted into calorie and other nutrients rather than the "As purchase" portion. This may be a reason for difference or otherwise the difference may be due to sample fluctuation. Calorie intake differ due to residence in urban and rural settings (2238 kcal/capita/day in rural areas compared with 2198 kcal/capita/day in urban areas) and sex (male calorie intake is 2375.2 kcal/capita/day while female calorie intake is 2086.8 kcal/capita/day). Table 3.2.2.1 also shows that per capita calorie consumption slightly varies according to division. Among the divisions, per capita calorie consumption is highest in Chittagong Hill Tracts for both sexes (male 2654.6 kcal/capita/day and female 2414.0 kcal/capita/day) while surprisingly calorie intake is lowest in Chittagong for both sexes (male 2036.8 kcal/capita/day and female 1980.8 kcal/capita/day).

**Table 3.2.2.1: Calorie intake (kcal per capita per day) by sex, residence and division**

	Male	Female	Total
<b>Residence</b>			
Urban	2326.6	2086.8	2197.7
Rural	2395.7	2086.9	2237.7
<b>Division</b>			
Dhaka	2495.9	2055.2	2261.1
Chittagong	2036.8	1980.8	2006.5
CHT Hill tracts	2654.6	2414.0	2526.8
Rajshahi	2082.4	1906.4	1991.4
Khulna	2494.2	2140.9	2307.2
Rangpur	2580.9	2163.6	2364.1
Barisal	2464.0	2291.3	2369.4
Sylhet	2068.3	1893.0	1976.0
<b>Total</b>	<b>2375.2</b>	<b>2086.8</b>	<b>2222.1</b>

A recent study (Murshid et. al 2008) shows that energy requirement on the basis of observed body weight is 2076 kcal/capita/day and energy requirement on the basis of desired body weight is 2187kcal/capita/day for Bangladeshi population. About 53.3 percent households cannot fulfill per capita energy requirement based on observed body weight (i.e. 2076 kcal/capita/day) for all household members, while based on desired body weight basis requirement (i.e. 2187 kcal/capita/day), 60.1% household cannot fulfill the energy requirement for all household members. This result offers clearer scenario of energy deficiency at household level.

**Table 3.2.2.2: Percent of household that cannot fulfill per capita dietary energy requirement for all household members**

Ages and sex	Observed body weight basis requirement	Desired body weight basis requirement
	≤ 2076 Kcal <sup>*</sup>	≤ 2187 Kcal <sup>*</sup>
For all ages and sexes	53.3	60.1

\*Murshid et. al ,2008

Table 3.2.2.3 shows per capita per day intake of major nutrients according to residence and division. It is observed that there are significant differences in nutrient intake among divisions. Nationally the mean protein intake is 61 gm per capita per day (male 64.1gm and female 58.4gm). Among the division protein intake is highest among people living in Chittagong Hill Tracts for both sexes (male 88.5gm and female 82.8gm), while protein intake is lowest for both sexes (male 53.7gm and female 49.1gm) in population living in Rajshahi. As regards sex, intake of protein is more in male than female population in all divisions.

The mean daily per capita fat and carbohydrate intake is 31.1gm and 416.8gm respectively. As for calcium, per capita per day intake is highest for population living in Chittagong Hill Tracts (873.5gm), while calcium intake is lowest in population living in Rajshahi (301.7gm).

Iron intake varies significantly with the difference of sex in all divisions. The mean intake of iron among male is higher than that in female within each division. Among all divisions, per capita per day iron intake is lowest in Sylhet(21.7gm)division. Nationally per capita per day intake of vitamin-C, carotenes and retinol is 66.9gm, 3892.1 µg and 756.1µg respectively.

**Table 3.2.2.3: Calorie and other important nutrients intake (per capita per day) by sex, residence and division**

Household	Sex	Energy (kcal)	Protein (gm)	Fat (gm)	Carbohydrate (gm)	Calcium (mg)	Iron (mg)	Vitamin C (mg)	Carotenes (µg)	Retinol (µg)
Urban	Male	2326.6	65.6	36.2	427.8	560.8	27.9	70.9	3776.8	772.6
	Female	2086.8	59.4	33.6	381.6	511.5	25.0	69.8	3832.7	778.8
	Total	2197.7	62.2	34.8	402.9	534.3	26.3	70.3	3806.8	775.9
Rural	Male	2395.7	63.5	29.9	458.5	529.7	28.9	66.0	3921.5	743.4
	Female	2086.9	57.9	29.0	390.8	523.1	25.1	64.9	3935.7	751.2
	Total	2232.7	60.5	29.4	422.8	526.2	26.9	65.5	3929.0	747.5
Dhaka	Male	2495.9	63.9	34.7	471.4	505.2	29.1	68.9	4305.4	834.8
	Female	2055.2	56.3	33.6	375.1	499.9	24.0	70.2	4609.1	899.9
	Total	2261.1	59.9	34.1	420.1	502.4	26.4	69.6	4467.2	869.5
Chittagong	Male	2036.8	62.0	30.6	375.2	589.9	24.1	54.0	3299.8	627.7
	Female	1980.8	60.2	29.5	363.3	598.0	23.1	55.3	3440.8	645.3
	Total	2006.5	61.0	30.0	368.7	594.2	23.6	54.7	3376.1	637.2
CHT Hill Tracts	Male	2654.6	88.5	38.1	492.3	891.7	33.6	94.8	3578.5	783.8
	Female	2414.0	82.8	40.2	436.2	857.5	27.8	96.2	3869.9	875.3
	Total	2526.8	85.5	39.2	462.5	873.5	30.6	95.5	3733.4	832.4
Rajshahi	Male	2082.4	53.7	18.8	415.1	314.8	25.1	43.9	1730.5	332.1
	Female	1906.4	49.1	17.6	379.2	289.5	23.1	38.8	1656.6	311.7
	Total	1991.4	51.3	18.2	396.6	301.7	24.0	41.3	1692.3	321.6
Khulna	Male	2494.2	62.6	40.4	456.3	550.1	30.2	76.1	3797.0	709.3
	Female	2140.9	56.1	39.2	381.7	523.4	25.7	73.7	3750.1	706.6
	Total	2307.2	59.1	39.8	416.8	536.0	27.8	74.8	3772.2	707.9
Rangpur	Male	2580.9	64.1	26.7	510.1	409.5	31.6	69.3	5747.9	1072.9
	Female	2163.6	56.1	23.3	423.4	366.9	26.7	65.0	4978.0	937.2
	Total	2364.1	60.0	24.9	465.0	387.4	29.0	67.1	5347.9	1002.4
Barisal	Male	2464.0	72.5	38.7	445.0	798.4	32.8	87.2	4546.6	940.8
	Female	2291.3	66.5	34.8	417.4	703.7	30.9	84.5	4879.1	970.2
	Total	2369.4	69.2	36.6	429.9	746.5	31.7	85.7	4728.8	956.9
Sylhet	Male	2068.3	59.9	22.8	403.2	582.9	22.9	60.1	2021.7	433.6
	Female	1893.0	55.9	23.1	363.1	583.5	20.6	58.8	2041.1	461.1
	Total	1976.0	57.8	22.9	382.1	583.2	21.7	59.4	2031.9	448.1
Total	Male	2375.2	64.1	31.8	449.4	539.0	28.6	67.5	3878.5	752.1
	Female	2086.8	58.4	30.4	388.0	519.5	25.1	66.4	3904.2	759.6
	Total	2222.1	61.0	31.1	416.8	528.7	26.7	66.9	3892.1	756.1

### 3.2.3 Self-reported Physical activity in adult population

A certain amount of activity must be performed regularly in order to maintain overall health and fitness, to achieve energy balance and to reduce the risk of developing obesity and associated diseases, most of which are closely associated with a sedentary lifestyle (FAO/WHO/UNU, 2001). Tools and instruments for measuring physical activity are generally grouped into either direct (objective) measures such as accelerometers, or indirect (subjective) measures such as questionnaires. The most frequently used assessment method for physical activity was self-report, until the development of motion sensors. There are a large number of self-report approaches in use, including questionnaires, diaries and log books, with great variation in reliability and validity (Biddle et. al, 2011).

Despite some limitations (reliance on recalling activity from memory), self-report tools remain the most cost-effective option for population level surveillance, and the most practical option for public health evaluations of physical activity. Moreover, they are extremely useful for providing information on the type and context of physical activity: information which is not available through more direct assessment methods (Biddle et. al, 2011).

In the present survey, information on physical activity was collected from 8608 individuals (male 2623 and female 5985) aged 20-85 years by using a predesigned format for documenting all types of activities and duration of each activity over 24 hours. Responders were asked to include all physical activity at work, during transport, at home and during leisure time and the duration of each type of activity was totaled on a 24 hours basis for each respondent.

In the NHDBD-2011, physical activity level (PAL) was estimated by using the formula that is  $PAL = \text{Total Energy Expenditure (TEE) of a person} / \text{Basal Metabolic Rate (BMR) of that person at individual level}$ .

Basal metabolic rate (BMR) is the minimal rate of energy expenditure compatible with life. It is measured in the supine position under standard conditions of rest, fasting, immobility, thermo neutrality and mental relaxation. Depending on its use, the rate is usually expressed per minute, per hour or per 24 hours and in the present survey BMR is expressed as BMR per day or per 24 hours. Depending on age and lifestyle, BMR represents 45 to 70 percent of daily total energy expenditure and it is determined mainly by the individual's age, gender, body size and body composition (FAO/WHO/UNU, 2001; James and Schofield, 1990; WHO 1985).

**Table 3.2.3.1: Equation used for estimation of Basal Metabolic Rate (BMR) of adult at individual level (FAO/WHO/UNU 2001)**

Sex	Age range (year)	BMR (Kcal/day)
Male	18 - 30	15.057 (Weight in kg) + 692.2
	30 - 60	11.472 (Weight in kg) + 873.1
	> 60	11.711 (Weight in kg) + 587.7
Female	18 - 30	14.818 (Weight in kg) + 486.6
	30 - 60	8.126 (Weight in kg) + 845.6
	> 60	9.082 (Weight in kg) + 658.5

After BMR, physical activity is the most variable and the second largest component of daily energy expenditure. Total energy expenditure (TEE) is defined as the energy spent, on average, in a 24-hour period by an individual or a group of individuals. By definition, it reflects the average amount of energy spent in a typical day, but it is not the exact amount of energy spent each and every day. TEE for 24 hours expressed as a multiple of BMR. Energy expenditure for a specific physical activity is calculated as the product of duration in minute involved in that activity, PAR value of that particular activity and the BMR of that person. Thus energy expenditure for each activity in 24 hours has to be calculated to get TEE in 24 hours. In adult men and non-pregnant, non-lactating women, BMR times physical activity level (PAL) is equal to TEE or the daily energy requirement. Physical activity ratio (PAR) is the energy cost of an activity per unit of time (usually a minute or an hour) expressed as a multiple of BMR. It is calculated as energy spent in an activity/BMR, for the selected time unit.

The following table presents the distribution of adult male and female population by mean PAL value according to occupation and sex. The result indicates that PAL value varies significantly according to occupation and sex. Among male adults, the highest mean PAL was observed among rickshaw/van driver (PAL=2.8), followed by day labour including earth cutting (PAL=2.3), farmer/fisherman (PAL=2.0) and elderly/physically disabled (PAL=2.0). On the other hand, the lowest PAL value was observed for service holders (PAL=1.4) which was followed by that for businessman, motor driver and jobless (PAL=1.6). Among the female adults, the highest mean PAL was observed among day labour including earth cutting (PAL=2.3) and the lowest PAL value was observed for business and service holders (PAL=1.9). It is interesting that irrespective of occupation, the overall PAL value for female (PAL=2.0) is higher than the overall PAL value for male (PAL=1.9). Moreover PAL value for housewife (PAL=2.0 and about 95% of our female respondents fall in this category) is higher than the overall PAL value for male (PAL=1.9). This indicates that women are more engaged in physical work as compared with men; and thus energy expenditure of women is accordingly higher than that of men.

**Table 3.2.3.2: Distribution of adult male and female population by mean PAL value according to occupation and sex**

	N	%	Mean PAL	SD
<b>Male</b>				
Business	601	22.9	1.6	0.6
Day labour including Earth cutting	600	22.9	2.3	0.8
Farmer/Fisherman	549	20.9	2.0	0.7
Services	278	10.6	1.4	0.5
Rickshaw/Van driver	213	8.1	2.8	0.9
Motor driver	101	3.9	1.6	0.5
Elderly/Physically disabled	30	1.1	2.0	0.8
Job less	55	2.1	1.6	0.6
Others	196	7.5	1.9	0.7
<b>Total</b>	<b>2623</b>	<b>100.0</b>	<b>1.9</b>	<b>0.8</b>
<b>Female</b>				
Housewife	5706	95.3	2.0	0.6
Business/Service	125	2.1	1.9	0.5
Day labour including Earth cutting	76	1.3	2.3	0.7
Elderly/Physically disabled	10	0.2	2.1	0.4
Others	68	1.1	2.1	0.7
<b>Total</b>	<b>5985</b>	<b>100.0</b>	<b>2.0</b>	<b>0.6</b>

Energy requirements are highly dependent on habitual physical activity. According to FAO/WHO/UNU expert consultation, the intensity of a population's habitual physical activity fall into three categories and in contrast with the 1981 consultation (WHO, 1985), a range of PAL values, rather than a mean PAL value, was established for each category and the same PAL values were used to assign men and women to a PAL category.

The PAL values that can be sustained for a long period of time by free-living adult populations range from about 1.40 to 2.40. According to categories, the percent distribution of the male and female adult is shown in the table 3.2.3.3 and it also represents the different levels of activity associated with a population's lifestyle. Table 3.2.3.3 reveals that average adult people, including male and female living in rural area are more active than the average people living in urban area. As regards sex, sustainable PAL value (PAL= 1.40 to 2.40) for a long period of time is observed mostly in women (total of light, moderate and vigorous is 71.6%) compared with men (46.2%). Both in

rural and urban areas, percent of female who fall into vigorous activity is almost double of the percent male who are involved in vigorous activity. Almost a similar situation was observed in case of moderate activity.

Extremely low levels of energy expenditure allow for survival, but they are not compatible with long-term health, moving around freely, or earning a living. About 27.8% male and 12.1% female have PAL value under the lower limit (PAL=1.4) of the sedentary lifestyle range. On the other hand, high PAL values (PAL>2.4) was observed for 26% male and 16.2% female. However, such levels of energy expenditure are not sustainable in the long term. Thus the percent of male, with both low and high PAL value, is higher than that of female.

**Table 3.2.3.3: Percent distribution of adult male and female according to PAL value by residence and sex**

PAL value	Urban		Rural		Total	
	Male	Female	Male	Female	Male	Female
Low PAL (< 1.40)	34.7	13.0	25.2	11.7	27.8	12.1
<b>Sedentary or Light activity (1.40 - 1.69)</b>	<b>18.3</b>	<b>14.6</b>	<b>15.4</b>	<b>9.0</b>	<b>16.2</b>	<b>10.7</b>
Active or Moderate activity (1.70-1.99)	11.5	29.3	13.9	26.0	13.3	27.0
<b>Vigorous activity (2.00-2.40)</b>	<b>14.2</b>	<b>29.4</b>	<b>17.6</b>	<b>35.9</b>	<b>16.7</b>	<b>33.9</b>
High PAL (> 2.4)	21.3	13.6	27.9	17.4	26.2	16.2
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Physical activity in young and adult people has become a major issue in public health as evidence emerges on the important role of physical activity in many health conditions, including overweight and obesity, type 2 diabetes, cardiovascular disease risk, skeletal health, and mental health. Moreover to implement effective non-communicable disease prevention programmes, policy makers need data for physical activity levels and trends.

### 3.2.4 Energy Balance

Energy balance is achieved when input (i.e. dietary energy intake) is equal to output (i.e. total energy expenditure), plus the energy cost of growth in childhood and pregnancy, or the energy cost to produce milk during lactation. When energy balance is maintained over a prolonged period, an individual is considered to be in a steady state. This can include short periods during which the day to day balance between intake and expenditure does not occur. An optimal steady state is achieved when energy intake compensates for total energy expenditure and allows for adequate growth in children, and pregnancy and lactation in women, without imposing metabolic, physiological or behavioural restrictions that limit the full expression of a person's biological, social and economic potential (FAO/WHO/UNU, 2001).

In present study, information on individual, 24 hours food consumption and 24 hours physical activity were collected. Energy balance is thus estimated from energy consumption and energy expenditure for adult male and non-pregnant non-lactating female. The following table present data on mean energy expenditure, energy consumption and energy balance of adult population by occupation and it indicates that overall both male and female are in negative energy balance (male: -513.78 and female: -268.03). But to capture real situation, it is necessary to interpret the result according to occupation. Among male adults, day labour including earth cutting, rickshaw/van driver, elderly/physically disabled and other categories are in negative energy balance whereas persons involved in business, services and motor driving are mostly in positive energy balance. Among female adults, day labour including earth cutting, elderly/physically disabled and other categories are in negative energy balance.

**Table 3.2.3.4: Mean energy expenditure, energy consumption and energy balance (in kcal) of adult population by occupation**

	<b>Energy consumption (EC)</b>	<b>Energy Expenditure (EE)</b>	<b>Energy balance (EC-EE)</b>	<b>Number of male or female</b>
<b>Male</b>				
Business	3038.97	2429.42	609.55	601
Day labour including Earth cutting	2854.86	3372.37	-517.51	600
Farmer/Fisherman	3167.23	2891.57	275.66	549
Services	2859.71	2238.65	621.06	278
Rickshaw/Van driver	2995.87	4048.50	-1052.63	213
Motor driver	3100.68	2436.04	664.64	101
Elderly/Physically disabled	2342.24	2603.64	-261.40	30
Job less	2676.47	2306.22	370.25	55
Others	1741.64	2752.02	-1010.38	196
<b>Total</b>	<b>2375.19</b>	<b>2888.97</b>	<b>-513.78</b>	<b>2623</b>
<b>Female</b>				
Housewife	2459.23	2349.10	110.13	5706
Business/Service	2500.56	2362.71	137.85	125
Day labour including Earth cutting	2188.25	2688.83	-500.58	76
Elderly/Physically disabled	2106.09	2339.03	-232.95	10
Others	1593.01	2435.17	-842.17	68
<b>Total</b>	<b>2086.84</b>	<b>2354.88</b>	<b>-268.03</b>	<b>5985</b>

Nutrition-related chronic diseases are increasing globally as a result of changes in diets and lifestyles that are reflected in changing food cultures and physical activity patterns among all segments of society; not only among affluent groups or in the richest countries. To control the double burden of under and over nutrition, prevention may be the most feasible approach. Healthy diet and regular physical activity are two most relevant and powerful weapons to combat these health issues.

Safe water and proper sanitation or hygienic disposal of human waste can significantly reduce morbidity such as diarrhoeal disease, upper respiratory infections, blindness, skin disease and parasite infections. Like developing countries, people in Bangladesh are constantly battling a range of diseases related to lack of clean drinking water, sanitation and unhygienic practices.

#### 4.1 Water

Tubewells/tap water is the most common source of drinking water in both urban and rural areas. Nationally about 94.4% household use taps or tube well water as drinking water. In rural areas, the rate was 95%, which is marginally higher than in urban areas (93.2%). However, these figures do not reflect whether the water is arsenic free or arsenic contaminated.

Taking arsenic contamination into consideration and the proportion of households using tubewell water as drinking water source, it is noted that overall 75.1% households' tubewell is free from arsenic contamination, 10.1% households' tubewell is contaminated with arsenic. Arsenic status of 14.8% households' tubewell is not yet detected. About 85% respondents knew that tubewell water is the source of arsenic contamination and 80% respondents have knowledge about the common signs and symptom (like injury in hands/ feet/ body) of arsenicosis. Most of the households (94%) do not feel to treat water as they use tubewell water. Where applicable, boiling is the most common method (4%) of drinking water treatment.

Nationally 76% households use tap/tubewell water for cooking and washing utensils (like plate, pan etc) and second most common source of this water is pond or ditch (20%). As regards the use of pond or ditch water for cooking and washing utensils, the proportion of rural households is higher than the proportion of urban households (22% versus 16%).

**Table 4.1.1.a: Percent distribution of households by source of water, treatment of drinking water, arsenic situation and residence**

Water source	Urban	Rural	Total
<i>Main sources of drinking water</i>			
Tap/Tube well	93.2	95.0	94.4
Well	1.6	2.0	1.8
Pond/Ditch	3.4	1.9	2.4
River/Canal	0.9	0.3	0.5
Fountain	0.1	0.7	0.5
Bottle water	0.7	0.1	0.3
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<i>Arsenic status in household drinking water</i>			
Arsenic free	75.5	75.0	75.1
Arsenic contaminated	11.7	9.4	10.1
Not detected yet	12.8	15.6	14.8
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<i>Treatment of water before drinking</i>			
Boiling	4.6	3.6	3.9
Use water purifying tablet	0.1	0.0	0.0
Use Fitkeri	0.3	0.2	0.2
By filter	0.8	0.3	0.4
Don't purify	1.0	1.0	1.0
Tap/Tube well water so don't boil	93.2	95.0	94.4
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<i>Source water for cooking and utensils washing</i>			
Tap/Tube well	80.6	73.8	75.9
Well	0.8	1.3	1.2
Pond/Ditch	16.3	22.2	20.4
River/Canal	2.4	2.7	2.6
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>



Table 4.1.1.b presents the divisional scenario of water sources, water treatment and arsenic status of drinking water. It is revealed that there are some variations in respect of sources of drinking water among the divisions. Use of tap/tubewell water was reported to be the lowest (79% households) in Chittagong Hill Tracts and highest (97% household) in Dhaka division. It is to be noted that a significant proportion of households of Chittagong Hill Tracts (well 10.3% and river/canal 8.3%), Barisal division (well 3.2% and pond/ditch 5.5%), Khulna division (well 1.9% and pond/ditch 5%) and Sylhet division (pond/ditch 4.6%) reported to use unsafe well, pond/ditch, river/canal water for drinking.

It is further revealed that arsenic contamination is most common (27%) in Chittagong division followed by Khulna division (15.4%). In Rangpur division, arsenic status of about 38.4% household's tubewell has not been detected as yet.

Variation in the divisions regarding the source of water for cooking and washing utensils is also evident from the above table. It is observed that, a significant proportion of households of Barisal division (75.2%), Chittagong division (57.8%), Chittagong Hill Tracts (28.7%) and Sylhet division (26.3%) use unsafe well/pond/ditch/river/canal water for the purpose of cooking and washing utensils.

**Table 4.1.1.b: Percent distribution of households by source of water, treatment of drinking water, arsenic situation and divisions**

Water source	Dhaka	Chittagong	CHT	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
<b>Main sources of drinking water</b>									
Tap/Tube well	97.1	96.3	79.0	97.1	91.1	97.9	88.7	94.6	94.4
Well	0.9	0.7	10.3	2.2	1.9	1.5	3.2	0.0	1.8
Pond/Ditch	1.9	1.3	1.0	0.8	5.0	0.3	5.5	4.6	2.4
River/Canal	0.0	0.2	8.3	0.0	0.1	0.0	0.5	0.3	0.5
Fountain	0.0	1.3	0.7	0.0	0.6	0.0	2.0	0.6	0.5
Bottle water	0.1	0.1	0.7	0.0	1.3	0.2	0.2	0.0	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Arsenic status in household drinking water</b>									
Arsenic free	86.4	65.5	78.1	79.9	73.9	54.4	82.9	81.9	75.1
Arsenic contaminated	3.6	27.0	8.9	4.9	15.4	7.2	8.1	5.7	10.1
Not detected yet	10.0	7.5	13.1	15.2	10.7	38.4	9.0	12.4	14.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Treatment of water before drinking</b>									
Boiling	2.8	3.4	8.0	2.3	4.9	1.7	9.7	3.1	3.9
Use water purifying tablet	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Use Fitkeri	0.1	0.0	0.0	0.0	0.9	0.0	0.5	0.3	0.2
By filter	0.1	0.1	0.7	0.6	1.2	0.0	1.0	0.3	0.4
Don't purify	0.0	0.1	12.3	0.0	1.8	0.3	0.2	1.7	1.0
Tap/Tubewell water don't boil	97.1	96.3	79.0	97.1	91.1	97.9	88.7	94.6	94.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Source water for cooking and utensils washing</b>									
Tap/Tube well	90.7	42.1	71.3	98.2	78.6	99.4	24.8	73.7	75.9
Well	0.5	0.4	8.3	1.7	0.4	0.1	2.5	1.1	1.2
Pond/Ditch	8.4	56.3	2.7	0.2	18.4	0.2	63.0	22.3	20.4
River/Canal	0.4	1.1	17.7	0.0	2.6	0.3	9.7	2.9	2.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

b CHT includes only Rangamati, Khagrachhari and Bandarban districts  
a Chittagong includes CHT

Table 4.4.4.c reveals that percent distribution of households, source of water, treatment of drinking water and arsenic situation do not vary significantly for the variation of household income, expenditure and education.

**Table 4.1.1.c: Percent distribution of households by source of water, treatment of drinking water and arsenic situation by household income expenditure and education**

	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
<b>Main sources of drinking water</b>																
Tap/Tube well	93.6	94.2	94.5	94.8	95.0	94.0	93.3	93.9	95.1	95.9	93.7	93.6	95.8	94.8	94.8	94.5
Well	2.9	1.6	2.5	1.1	0.9	1.9	2.7	2.1	1.4	1.2	2.4	2.6	1.2	1.8	0.9	1.8
Pond/Ditch	2.1	2.6	2.1	2.5	2.7	2.7	2.7	2.4	2.1	1.9	1.9	2.6	2.0	2.3	2.9	2.3
River/Canal	0.6	0.7	0.3	0.6	0.4	0.6	0.2	0.7	0.6	0.4	1.0	0.3	0.2	0.4	0.3	0.5
Fountain	0.6	0.8	0.3	0.7	0.4	0.6	0.6	0.6	0.6	0.2	0.6	0.8	0.6	0.4	0.5	0.5
Bottle water	0.2	0.1	0.4	0.2	0.6	0.2	0.6	0.2	0.2	0.3	0.4	0.2	0.2	0.3	0.5	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Arsenic status in household drinking water</b>																
Arsenic free	68.4	70.7	76.7	76.9	81.1	71.0	76.1	75.7	75.2	77.5	71.8	74.6	74.8	76.3	79.8	75.1
Arsenic contaminated	10.5	11.8	10.4	9.7	8.3	9.3	8.5	11.4	11.0	10.2	10.2	11.3	10.8	9.6	8.8	10.0
Not detected	21.1	17.5	12.9	13.3	10.5	19.6	15.4	12.9	13.9	12.3	18.0	14.1	14.4	14.1	11.4	14.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Treatment of water before drinking</b>																
Boiling	4.6	3.5	4.2	3.7	3.5	4.4	4.6	4.2	3.6	2.7	3.9	4.3	2.9	3.8	4.3	3.8
Use water purifying tablet	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0
Use Filter	0.2	0.7	0.1	0.1	0.1	0.4	0.2	0.2	0.0	0.2	0.3	0.3	0.2	0.2	0.0	0.2
By filter	0.3	0.4	0.3	0.4	0.6	0.2	0.6	0.4	0.6	0.2	0.3	0.8	0.2	0.4	0.8	0.4
Don't purify	1.3	1.2	0.9	1.1	0.7	1.0	1.2	1.3	0.7	0.9	1.8	1.0	0.9	0.8	0.0	1.0
Tap/Tubewell water	93.6	94.2	94.5	94.8	95.0	94.0	93.3	93.9	95.1	95.9	93.7	93.6	95.8	94.8	94.8	94.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Source water for cooking and utensils washing</b>																
Tap/Tube well	79.4	75.7	72.3	73.6	78.6	78.9	75.0	72.4	75.7	77.4	75.7	67.9	73.6	76.5	84.7	75.9
Well	1.0	1.0	1.5	1.4	0.9	0.7	1.0	1.9	1.4	0.9	1.7	1.0	1.2	0.9	0.7	1.1
Pond/Ditch	17.1	20.8	22.8	22.1	19.0	17.6	21.5	23.2	19.4	20.1	19.1	28.1	22.7	20.3	13.7	20.3
River/Canal	2.5	2.5	3.5	2.9	1.6	2.8	2.5	2.5	3.6	1.6	3.6	3.0	2.5	2.4	0.9	2.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

## 4.2 Sanitation and Hygiene

An improved sanitation facility is defined as one that hygienically separates human excreta from human contact. As Bangladesh is one of the world's highest population densities, sanitation is a crucial issue here. According to the Government National Sanitation Strategy of 2005, hygienic sanitation coverage is defined as individual or shared by maximum two households. It is of the following types:

- Flushed and pour-flushed toilet/latrines to piped sewer system or septic tank*
- Pit latrines with slab and water seal or lid or flap*
- Ventilated Improved Pit Latrines*
- Composting latrines*

Thus, the Government considers a “hygienic” latrine to be one which confines faeces, has an intact water-seal or other tight pit closure and is shared by not more than two households. In the present survey, this national definition is adopted and termed as hygienic latrine. Though questions were asked the respondents about the sanitation facilities of the households, it was ensured by direct observation as and when possible.

Table 4.2.1.a shows that on average 62.3% households have hygienic latrine facility. The proportion of urban households having the facilities is much higher than the proportion of rural households (urban 70.9% versus rural 58.6%). The remainder use either ‘specific ditch/chari/well’ (27.9%) or ‘hanging/open latrine’ (6.9%). About 3% of households in Bangladesh do not have a toilet facility.

**Table 4.2.1.a: Percent distribution of the sanitation facilities of the surveyed households by residence**

<b>Sanitation facilities</b>	<b>Urban</b>	<b>Rural</b>	<b>Total</b>
<b><i>Type of latrine of the household</i></b>			
No Latrine	1.8	3.2	2.8
Open/Hanging latrine	4.1	8.1	6.9
Specific ditch/Well/Chari	23.1	30.0	27.9
Hygienic (Sanitary/Slab) Latrine*	70.9	58.6	62.3
Others	0.2	0.2	0.2
Total	100.0	100.0	100.0
<b><i>Ownership of latrine</i></b>			
Personal/Own	66.1	66.9	66.7
Govt. / NGO	0.7	1.0	0.9
Share with others	31.1	28.3	29.2
Others	2.1	3.8	3.3
Total	100.0	100.0	100.0
<b><i>Place of defecation of children less than 5 years old</i></b>			
In latrine (Pot)	20.3	19.6	19.8
In open/hanging latrine	2.5	5.0	4.3
Definite whole, well / Chari	3.5	4.1	3.9
Hygienic latrine (sanitary/Slab)	24.8	17.3	19.6
Open space	40.4	49.8	47.0
Beside the drain	0.1	0.1	0.1
Others	8.5	4.1	5.4
Total	100.0	100	100
<b><i>Way of cleaning when the children defecate in open space</i></b>			
Remove the stool and put it in latrine	91.8	94.3	93.6
Kept as it is	2.8	2.9	2.9
Others	5.5	2.8	3.6
Total	100	100	100
<b><i>All members use shoe/sandle while going to latrine/dirty place</i></b>			
Yes	89.4	83.6	85.4
No	10.6	16.4	14.6
Total	100.0	100.0	100.0

\*This category includes flushed and pour-flushed toilet/latrines to piped sewer system or septic tank, pit latrines with slab and water seal or lid or flap, ventilated improved pit latrines, composting latrines.

It has been seen that overall 66.7% of surveyed households have their own latrine and 29.2% households share latrine with others irrespective of type of latrine. All members of 85.4% household use shoe/sandle when they go to latrine/dirty place.

Disposal of infant/child excreta in latrine is an important indicator of household sanitation status. Regarding disposal of feces of children (under 5), 19.8% households use latrine (pot), 19.6% households use hygienic latrine and children of 47.9% household defecates in open place. Defecation of children in open places is more common in rural areas (49.8%), compared with 40.4% in urban areas. When the children defecate in open places, about 93.6% respondents remove the feces and dispose it into the latrine.

Household access to different types of sanitation facilities by division has been presented in table 4.2.1.b. It is observed that percent of household having sanitary or healthy latrine varies across divisions, ranging from 88% of households in Dhaka to 44.7% in Barisal. The percentage of households having no latrine is highest (5.4%) in Rangpur.

There are significant variations in respect of ownership of latrine among the divisions (Table 4.2.1.b). Percent of households having personal/own latrine is highest in Barisal (87.5%) and lowest in Chittagong (52.0%). In Chittagong highest percent (43.9%) of households share latrine with others and it is lowest (9%) in Barisal.

In Sylhet, children of most of the households (60.2%) defecate in open place followed by those in Rangpur (57.7%). Most of the households in all divisions clean the faeces and put it in latrine. All members of 73.1% households residing in Sylhet use shoe/sandle while going to latrine/dirty place. It is to be noted that this percentage is lowest among all other divisions which is lowest among all divisions.

**Table 4.2.1.b: Percent distribution of the sanitation facilities of the surveyed households by division**

Sanitation facilities	Dhaka	Chittagong	CHT	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
<b>Type of latrine of the household</b>									
No Latrine	2.7	1.9	3.3	2.8	1.3	5.4	3.0	0.9	2.8
Open/Hanging latrine	1.0	2.7	12.0	12.5	7.6	6.5	18.3	10.6	6.9
Specific ditch/Well/Chari	7.5	50.1	17.7	28.3	39.8	34.5	33.8	16.9	27.9
Healthy (Sanitary/Slab)									
Latrine	88.5	45.3	66.7	56.5	51.2	53.3	44.7	71.7	62.3
Others	0.2	0.0	0.3	0.0	0.1	0.3	0.2	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Ownership of latrine</b>									
Personal/Own	61.3	52.0	73.0	76.5	65.1	73.5	87.5	56.0	66.7
Govt. / NGO	0.7	1.4	1.0	0.6	1.0	1.0	0.7	1.4	0.9
Share with others	36.6	43.9	18.7	20.5	33.1	15.8	9.0	41.1	29.2
Others	1.4	2.7	7.3	2.5	0.8	9.7	2.8	1.4	3.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Place of defecation of children less than 5 years old</b>									
In latrine (Pot)	22.2	7.3	20.6	32.3	20.2	15.3	24.0	20.1	19.8
In open/hanging latrine	0.4	1.8	3.0	3.0	6.7	5.5	16.1	3.2	4.3
Definite whole, well / Chari	1.4	9.2	5.4	2.0	4.7	3.4	4.8	1.7	3.9
Hygienic latrine (sanitary/Slab)	20.8	22.4	15.5	23.1	21.8	13.2	21.2	11.5	19.6
Open space	48.5	49.6	49.3	39.5	39.3	57.7	32.9	60.2	47.0
Beside the drain	0.1	0.3	0.0	0.2	0.0	0.0	0.0	0.3	0.1
Others	6.5	9.5	6.1	0.0	7.2	4.9	1.0	3.2	5.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Way of cleaning when the children defecate in open space</b>									
Remove the stool and put it in latrine	93.9	93.6	93.9	95.7	92.3	91.7	93.5	97.1	93.6
Kept as it is	1.5	3.1	5.0	2.6	1.2	6.6	2.0	1.6	2.9
Others	4.6	3.4	1.1	1.6	6.5	1.6	4.5	1.2	3.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>All members use shoe/sandle while going to latrine/dirty place</b>									
Yes	79.6	77.3	90.3	96.2	88.8	88.2	96.7	73.1	85.4
No	20.4	22.7	9.7	3.8	11.2	11.8	3.3	26.9	14.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>1</sup> Chittagong includes CHT

<sup>2</sup> CHT includes only Rangamati, Khagrachhari & Bandarban districts

The use of sanitation facilities by the household vary significantly for the variation of household income expenditure and educational level. Household income expenditure and level of education were found to be positively associated with having sanitary latrine and negatively associated with sharing the latrine with others. Household of highest income expenditure quintile and highest education level have their own/personal latrine.

Percent of households using open space as place of defecation of children less than 5 years old decreases with the increase of household income expenditure and level of education. Percentage of using shoe/sandleby all members of households while going to latrine/dirty place was also positively associated with household income expenditure and educational level.

About 98.5% of the respondents think that the hand should be properly washed before cooking. However, about 93.8% respondents practice it. About 97.8% of the respondents think that the hand should always be washed before having food. It is noted that every member of 91.4% households wash hand before having food. On average 36.8 percent households have separate bathing facility. This facility differs significantly according to the residence with rural 31.2% and urban 49.8% (p<0.05).

**Table 4.2.1.c: Percent distribution of the sanitation facilities of the households by household income expenditure and education**

Sanitation facilities	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
<b>Type of latrine of the household</b>																
No Latrine	4.9	4.0	2.2	1.8	1.3	4.2	3.6	2.7	2.0	1.3	4.6	3.4	2.8	1.7	0.8	2.7
Open/Hanging latrine	10.9	8.5	7.8	5.5	2.2	10.9	8.1	7.8	5.2	2.5	10.1	8.2	6.0	5.8	2.3	6.8
Specific ditch/Well/Chari	34.1	32.2	29.8	23.9	20.5	29.4	33.3	30.0	27.4	19.6	32.6	39.0	24.5	27.1	15.4	28.0
Hygienic (Sanitary/Slab) Latrine*	49.9	55.2	60.1	68.5	75.8	55.4	54.7	59.4	65.3	76.5	52.5	49.3	66.6	65.3	81.5	62.4
Others	0.2	0.1	0.1	0.2	0.1	0.1	0.3	0.2	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Ownership of latrine</b>																
Personal/Own	55.2	57.0	66.2	72.3	79.7	60.5	58.7	62.2	69.3	82.5	59.6	60.7	65.7	69.0	81.7	66.6
Govt. / NGO	1.6	1.5	0.7	0.7	0.4	1.4	1.1	0.8	0.6	0.8	1.7	0.6	1.0	0.4	0.4	0.9
Share with others	35.8	37.7	30.0	25.9	18.9	31.8	36.6	33.8	28.3	15.4	32.1	35.6	31.2	28.7	16.9	29.3
Others	7.4	3.8	3.2	1.1	1.0	6.4	3.6	3.2	1.8	1.3	6.7	3.0	2.1	1.9	1.1	3.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Place of defecation of children less than 5 years old</b>																
In latrine (Pot)	16.4	20.0	21.6	19.6	20.8	17.2	21.2	19.6	21.6	19.2	19.9	18.3	19.6	18.7	23.5	19.8
In open/hanging latrine	5.8	6.5	3.3	4.1	2.6	7.9	4.7	3.5	2.7	2.5	3.7	5.8	5.3	4.6	2.2	4.3
Definite whole, well / Chari	4.4	4.0	4.7	3.6	2.7	2.9	3.8	4.3	4.9	3.5	4.9	4.3	4.0	3.5	2.3	3.9
Hygienic latrine (sanitary/Slab)	15.4	16.1	17.2	22.5	26.0	18.8	15.9	18.0	20.3	25.0	12.7	17.7	21.0	21.0	29.4	19.6
Open space	54.6	51.2	49.2	44.1	37.0	50.3	51.1	50.6	44.2	38.7	56.6	50.9	46.4	45.0	30.1	47.0
Beside the drain	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.2	0.1	0.2	0.0	0.1	0.0	0.1	0.1	0.1
Others	3.3	2.1	3.9	6.0	10.8	2.8	3.1	4.0	6.1	11.0	2.0	3.6	3.6	7.2	12.3	5.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Way of cleaning when the children defecate in open space</b>																
Remove the stool and put it in latrine	93.0	94.7	93.9	91.4	94.8	92.8	94.6	93.0	93.6	93.8	93.7	93.4	94.6	94.4	89.1	93.6
Kept as it is	4.8	2.4	3.0	2.5	1.4	4.8	3.0	2.4	2.5	1.6	4.9	3.2	2.0	1.9	1.9	2.9
Others	2.2	3.0	3.0	6.1	3.8	2.4	2.5	4.6	3.9	4.5	1.4	3.4	3.5	3.7	9.0	3.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>All members use shoe/sandle while going to latrine/dirty place</b>																
Yes	81.4	81.6	85.9	87.3	89.4	84.8	83.7	85.4	85.6	87.2	76.3	84.3	83.6	89.4	97.6	85.4
No	18.6	18.4	14.1	12.7	10.6	15.2	16.3	14.6	14.4	12.8	23.7	15.7	16.4	10.6	2.4	14.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

### 4.3 Household Garbage Disposal

As revealed in Table 4.3.1.a about 57.7% households dispose household garbage in specific ditch/places and the remainder dispose either in open space beside house (40.6%) or in any place (1.4%). The practice of disposing household garbage in specific ditch/place is significantly higher in urban areas (64.3%) than in rural areas (54.8%).

**Table 4.3.1.a: Disposal of household garbage by residence**

Garbage disposal	Urban	Rural	Total
Specific ditch/Place	64.3	54.8	57.7
Open space beside house	34.2	43.4	40.6
Here & there	1.2	1.5	1.4
Others	0.3	0.2	0.3
Total	100.0	100.0	100.0

Table 4.3.1.b shows the percent distribution of household garbage-disposal practices by division. It is observed that the practices of disposing household garbage vary significantly from division to division.

**Table 4.3.1.b: Disposal of household garbage by divisions**

Garbage disposal	Dhaka	Chittagong	CHT	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Specific ditch/Place	67.0	54.3	42.0	5.8	72.6	65.6	69.0	53.7	57.7
Open space beside house	31.5	42.2	57.3	92.9	25.1	33.2	29.8	46.3	40.6
Here & there	1.0	3.3	0.7	1.1	2.2	1.0	0.7	0.0	1.4
Others	0.5	0.1	0.0	0.2	0.1	0.2	0.5	0.0	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari & Bandarban districts

The highest percent (72.6%) of use of specific ditch/place for disposal of household garbage was observed in Khulna, followed by those in Barisal (69.0%), Dhaka (67.0%) and Rangpur division (65.6%). On the other hand, percent disposal of garbage in open space beside house was found to be highest (92.9%) among households in Rajshahi division followed by those in CHT (57.3%) and Sylhet (46.3%).

Table 4.3.1.c reveals that hygienic disposal of household garbage is strongly correlated with household income expenditure and education level.

Households from the highest income expenditure group and higher level of education are more likely to use specific ditch/place to dispose household garbage. Use of open place beside house for the purpose of domestic garbage disposal is negatively associated with household income expenditure and education level.

It can be concluded from the survey findings that sanitation and hygiene practices are directly related with education, household income and expenditure whereas use of safe water source is significantly reliant on geographical, residential or administrative divisional fluctuation.

Table 4.3.1.c: Disposal of household garbage by household income expenditure and education

Disposal of household garbage	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
Specific ditch/Place	44.4	51.9	55.4	64.9	70.4	45.7	53.6	57.1	62.9	69.2	47.8	53.9	58.6	61.3	73.2	57.7
Open space beside house	53.7	46.0	43.2	33.8	27.9	52.3	44.8	41.5	35.5	29.2	50.4	44.6	39.3	37.4	25.4	40.6
Here and there	1.7	1.9	1.2	1.1	1.2	1.9	1.5	1.2	1.4	1.0	1.7	1.3	1.7	0.9	1.1	1.4
Others	0.2	0.2	0.3	0.2	0.4	0.1	0.1	0.2	0.2	0.6	0.1	0.2	0.3	0.4	0.3	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Income group: Rank-1:taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka 14801 through high  
 Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

Bangladesh has made strong progress in the area of child health and now is on track to achieve Millennium Development Goal 4, that is, reducing child mortality. Factors contributing to rapid decline in under-5 and infant mortality include *impressive gains in the EPI (Expanded Program on Immunization), vitamin A supplementation, breastfeeding practice, use of ORS (Oral Rehydration Solution), diarrheal disease control, control of acute respiratory tract infections* that are accelerated by an improvement in the knowledge, attitude and practice regarding health issues.

### 5.1 Vaccination Coverage

In order to find out the status of vaccination coverage of the children, the NHDSBD-2011 has collected information from mothers of U5 children whether they have completed the course of vaccination of their children or not (according to age). It was found that about 92.2% of under five children has been immunized. Then mothers were asked whether they have vaccination card for their child and to show it to the interviewer. From the vaccination card, the completion of all doses of each vaccine was documented to the questionnaire. The vaccination coverage is almost similar in both urban and rural areas. The level of coverage for BCG, all three doses of DPT and polio vaccine is above 95%. Coverage is slightly lower (about 84%) for the measles vaccine. In case of Hepatitis B vaccine, coverage ranges from 72.8% for the first dose to 70% for the third dose. Only 1.7% of children age  $\leq$  5 years have not received any childhood vaccinations.

**Table 5.1.1.a: Percent distribution of vaccination coverage for children (age  $\leq$  5 years) by location of residence**

Vaccine coverage	Has Immunized but incomplete according to age			Completed all doses according to age		
	Urban	Rural	Total	Urban	Rural	Total
BCG	97.8	98.3	98.1	97.3	98.0	97.8
Polio	96.7	97.2	97.0	96.2	96.8	96.6
DPT	95.0	96.1	95.8	94.3	95.7	95.3
Measles	82.0	85.1	84.1	81.8	84.7	83.9
Hepatitis-1	73.3	72.9	73.0	72.7	72.9	72.8
Hepatitis-2	71.2	71.3	71.3	70.7	71.1	71.0
Hepatitis-3	70.4	70.4	70.4	69.8	70.1	70.0

Table 5.1.1.b presents the percent distribution of vaccination coverage of children (age  $\leq$  5 years) according to division. The coverage of BCG, Polio, and DPT is above 90% in all administrative division. In Sylhet division, coverage of BCG, Polio, and DPT is lower compared with other division but in case of Hepatitis vaccine opposite scenario is observed.



Table 5.1.1.b: Percent distribution of vaccination coverage for children aged ≤ 5 years by division

Vaccination coverage	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
<b>Has Immunized but incomplete</b>									
BCG	99.0	97.1	96.1	99.5	98.1	99.3	98.0	93.3	98.1
Polio	98.5	95.0	94.7	98.9	96.7	98.4	96.8	91.5	97.0
DPT	97.3	92.6	95.0	98.4	95.4	97.1	95.4	90.7	95.8
Measles	88.1	80.1	79.0	90.2	79.6	85.5	84.1	77.0	84.1
Hepatitis-1	62.5	91.9	90.0	96.2	49.4	87.6	43.0	90.4	73.0
Hepatitis-2	61.6	90.5	90.4	97.0	47.3	82.3	39.6	90.4	71.3
Hepatitis-3	61.4	89.5	90.4	96.9	45.4	81.6	36.7	90.4	70.4
<b>Completed all doses</b>									
BCG	98.5	97.0	96.1	99.4	98.0	98.6	97.3	93.3	97.8
Polio	98.0	93.9	94.7	99.1	96.7	97.9	96.1	91.5	96.6
DPT	96.7	91.6	95.0	98.6	94.7	96.8	95.1	89.8	95.3
Measles	88.0	79.4	79.0	89.9	79.4	85.3	83.8	76.1	83.9
Hepatitis-1	62.3	91.8	89.3	97.2	49.5	86.7	42.0	90.4	72.8
Hepatitis-2	61.5	90.2	90.4	97.0	47.4	81.7	38.6	90.4	71.0
Hepatitis-3	60.7	89.3	90.4	96.9	45.1	81.0	36.0	90.4	70.0

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari & ndarban districts

Table 5.1.1.c shows vaccination coverage rates among children aged ≤ 5 years by household income expenditure and education. Results indicate that vaccination coverage varies little or almost no by the household income expenditure and education. It reflects that vaccination programs reach to almost all of the children in Bangladesh.

Table 5.1.1.c: Percent distribution of vaccination coverage for U5 children by household income, expenditure and education

Vaccination coverage	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
<b>Has Immunized but incomplete</b>																
BCG	97.8	98.5	97.7	98.0	98.8	98.8	98.3	97.4	97.9	98.4	97.3	97.2	98.6	98.5	99.6	98.1
Polio	96.9	96.8	96.6	97.5	97.4	97.4	97.0	96.6	97.1	97.1	96.4	95.6	97.3	97.2	98.8	97
DPT	95.9	96.2	95.4	95.5	96.0	96.7	95.7	95.6	95.5	95.4	95.5	94.3	95.2	96.0	97.4	95.8
Measles	82.4	86.2	84.5	82.6	85.2	86.4	84.5	84.7	82.8	82.3	85.4	83.8	84.7	82.7	83.5	84.1
Hepatitis-1	82.6	75.4	68.2	68.8	71.4	78.2	72.9	69.7	71.8	72.5	76.2	70.3	73.9	71.6	72.6	73
Hepatitis-2	79.9	74.6	66.5	66.6	70.2	75.8	71.2	68.7	70.0	70.6	74.6	68.3	72.4	69.8	70.3	71.3
Hepatitis-3	78.7	73.4	65.9	65.6	69.6	75.0	70.1	67.9	69.2	69.7	73.7	66.9	71.5	69.1	69.3	70.4
<b>Completed all doses</b>																
BCG	97.4	98.2	97.5	97.4	98.4	98.4	98.1	97.1	97.4	97.9	96.6	96.9	98.2	98.3	99.3	97.8
Polio	96.6	96.6	96.5	96.7	96.8	97.3	96.8	96.4	96.4	96.2	95.9	95.3	97.0	96.7	98.6	96.6
DPT	95.2	95.8	95.3	94.7	95.4	96.4	95.3	95.2	94.7	94.8	95.0	93.8	94.7	95.3	97.4	95.3
Measles	82.2	85.9	84.0	82.6	84.8	86.3	84.3	84.3	82.7	81.7	85.1	83.4	84.7	82.4	82.9	83.9
Hepatitis-1	82.8	75.5	68.0	67.9	71.1	78.3	72.9	69.8	71.1	72.0	76.3	70.0	73.8	71.5	71.5	72.8
Hepatitis-2	79.7	74.7	66.4	65.9	69.7	75.5	71.2	68.8	69.5	70.1	74.5	67.9	72.0	69.7	70.0	71
Hepatitis-3	78.3	73.3	65.5	65.1	69.0	74.7	69.8	67.7	68.6	69.1	73.4	66.6	71.2	68.6	68.8	70

Income group: Rank-1:taka0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka14801 through high

Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5899, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

## 5.2 Childhood Illness

Diarrhea is one of the most common childhood illnesses in Bangladesh and contributes to malnutrition and death especially for children of U5 years of age. Most of the diarrhea related deaths in children is due to dehydration (loss of water and electrolytes from the body in liquid stools). According to the result, nearly 4.5% of children had episodes of diarrhea in the two weeks preceding the survey. Among the children with diarrhea, 36.1% children received advice or treatment from a healthcare provider and certified doctor. About 87.3% of children with diarrhea were given any form of increased fluids. Of the children with diarrhea 67% were given oral rehydration solution (ORS) or packet saline and only 4.1% used homemade saline. Among the other diarrheal treatment, 16.3% were given antibiotic.

In order to regain the normal health and nutritional status, mother should give increased amount of fluids and foods along with normal feeding to children with diarrhea. In the NHDSBD-2011 mothers who had a U5 child with a recent episode of diarrhea were asked about the change of feeding practices during the diarrheal episode compared with usual practice. Only 13.4% of children with diarrhea were given more foods than normal during diarrhea, 43.8% given less, 35.7% was as before and about 4% given no food at all.

**Table 5.2.1.a: Percent distribution of children aged ≤5 years, who had diarrhea in the two weeks preceding the survey by feeding practice during diarrhea and division**

Diarrheal management	Urban	Rural	Total
As before	29.5	38.0	35.7
<b>Gave less than regular</b>	<b>50.0</b>	<b>41.5</b>	<b>43.8</b>
Gave more than regular	12.8	13.7	13.4
Did not give any food	5.1	3.4	3.9
Can't remember	0.0	0.5	0.4
Others	2.6	2.9	2.8
Total	100.0	100.0	100.0

Table 5.2.1.b shows feeding practices during the diarrheal episode as compared with usual practice of under 5 children according to division. The result indicate that amount of food vary from division to division. In Chittagong Hill Tracts most of the children who have diarrhea (54.5%) were given foods as before. In contrast, about 56.5% of children age ≤5 year who had diarrhea in the two weeks preceding the survey were given less foods than normal during diarrhea. Children with diarrhea were given more food than normal during diarrhea mostly practiced in CHT (36.4%). In Rangpur about 8.7% children had given no food at all during diarrhea.

**Table 5.2.1.b: Percent distribution of children aged ≤5 years, who had diarrhea in the two weeks preceding the survey by feeding practice during diarrhea and division**

Prevalence of diarrhea and its management	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
As before	37.5	31.6	54.5	40.0	31.6	26.1	40.0	46.7	35.7
<b>Gave less than regular</b>	<b>37.5</b>	<b>52.6</b>	<b>9.1</b>	<b>53.3</b>	<b>55.3</b>	<b>56.5</b>	<b>33.3</b>	<b>23.3</b>	<b>43.8</b>
Gave more than regular	19.6	14.0	36.4	6.7	5.3	2.2	23.3	13.3	13.4
<b>Did not give any food</b>	<b>3.6</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>7.9</b>	<b>8.7</b>	<b>3.3</b>	<b>3.3</b>	<b>3.9</b>
Can't remember	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.4
Others	1.8	1.8	0.0	0.0	0.0	4.3	0.0	13.3	2.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari & Bandarban districts

From table 5.2.1.c it is evident that respondents of highest household income expenditure group and respondents who have completed secondary education or higher are more likely to give more food than regular during diarrhea as compared with other groups. Giving no food at all during diarrhea is negatively related to the household income expenditure and education level of respondents. Giving less food than normal during diarrhea is commonly found in lowest household income expenditure group.

**Table 5.2.1.c: Percent distribution of children aged ≤5 years, who had diarrhea in the two weeks preceding the survey, its management, household income, expenditure and education level**

Prevalence of Diarrhea and its management	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
As before	30.6	25.5	40.3	43.6	37.7	25.0	30.4	37.7	43.6	42.6	35.2	34.6	34.9	36.3	31.0	35.7
Gave less than regular	56.5	51.0	35.5	36.4	39.6	57.1	46.4	43.5	38.2	31.9	42.0	50.0	44.2	48.4	31.0	43.8
Gave more than regular	3.2	17.6	17.7	10.9	18.9	10.7	14.3	14.5	12.7	14.9	9.1	11.5	18.6	8.8	37.9	13.4
Did not give any food	6.5	3.9	3.2	3.6	1.9	5.4	3.6	1.4	5.5	4.3	8.0	3.8	0.0	3.3	0.0	3.9
Can't remember	0.0	0.0	1.6	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.4
Others	3.2	2.0	1.6	5.5	1.9	1.8	5.4	1.4	0.0	6.4	5.7	0.0	0.0	3.3	0.0	2.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Income group: Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka 14801 through high  
Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

Acute respiratory infection (ARI) is another leading cause of childhood morbidity and mortality worldwide. Fever, cough, difficult or rapid breathing, or chests indrawing are the most common signs and symptom associated with severe respiratory infection. Early diagnosis and treatment can prevent a large proportion of mortality from the ARI.

In the NHDSBD-2012, symptoms like cough with rapid or difficult breathing, or chest indrawing are used as a proxy indicator for ARI. Mothers with U5 children were asked whether their children had symptoms of cough, rapid/difficult breathing and chest indrawing) of acute respiratory illness during the two weeks preceding the survey. Result shows that 2.5% of U5 children were reported to have had symptoms of respiratory illness. About 64.1% of U5 children with suspected ARI or pneumonia had taken advice and treatment mostly from qualified physician (29%), NGO worker (27.5%) or traditional doctors (25.3%).

### 5.3 Nutritional Status of U5 Children

The nutritional status of children is a reflection of their overall health status. Good nutrition is the cornerstone for their survival, health and development. Well-nourished children perform better in school, grow into healthier adults and are able to give their own children a better start in life. Malnourished children are at high risk of morbidity and mortality. Malnutrition during early childhood impacts on mental development and learning ability later in life.

In the NHDSBD-2011, data was collected on anthropometric measurements (height and weight mainly) from all age people to assess the nutritional status. In this section nutritional status of children aged ≤5 years are presented. Evaluation of nutritional status is based on the rationale that in a well-nourished population, there is a statistically predictable distribution of children of a given age with respect to height and weight. The US National Center for Health Statistics (NCHS) standard is one of the most commonly used reference populations and it is recommended for use by the World Health Organization (WHO). This reference has been employed in present report. Three standard indices of physical growth that describe the nutritional status of children are *height-for-age (stunting)*, *weight-for-height (wasting)* and *weight-for-age (underweight)*. Indicators for nutritional status can be expressed in Z-scores, or Standard Deviation Unit (SD), which show how the children differ from the mean.

Height-for-age is a measure of linear growth. A child who is below -2SD from the median of the NCHS reference population in terms of height-for-age is considered short for his/her age, or "stunted". It is a condition reflecting the cumulative effect of chronic malnutrition. If the child is below -3SD from the reference median, then the child is considered to be severely stunted. A child between -2SD and -3SD is considered to be moderately stunted. Stunting reflects failure to receive adequate nutrition over a long period of time and may also be caused by recurrent and chronic illness. Height-for-age, therefore, represents a measure of the long-term effects of malnutrition in a population and does not vary appreciably according to the season of data collection.

Table 5.3.1.a shows the nutritional status of U5 children as measured by stunting (height for age) indicators and residence. At national level the prevalence of stunting is about 40.2 percent in both girls and boys and the prevalence is higher (42%) in rural area than urban area (37%) in case of both sexes. Overall 17% children are severely stunted and in rural areas prevalence is higher than that in urban areas (about 18% versus 14%) for both sexes.

**Table 5.3.1.a: Percent distribution of malnourished children aged ≤5 years by anthropometric indicator: height for age (stunting), residence and sex**

Cut off points (Z-scores)	Urban		Rural		Total	
	Male	Female	Male	Female	Male	Female
Severe (≤ -3SD)	14.5	14.4	17.6	17.8	16.7	16.8
Mild and Moderate (≤ -2SD)	22.2	21.8	24	24.1	23.5	23.4
Normal (> -2SD)	63.3	63.8	58.4	58.1	59.8	59.8
Mean (Z-scores)	-1.4	-1.5	-1.6	-1.6	-1.5	-1.5
Total	100	100	100	100	100	100
Total stunting (≤ -2SD and ≤ -3SD)	36.7	36.2	41.6	41.9	40.2	40.2

Among administrative divisions, the highest percent of U5 children are stunted in Sylhet (boys 51.0% and girls 46.6%) followed by Chittagong division (boys 40.9% and girls 48.8%).

**Table 5.3.1.b: Percent distribution of malnourished children aged ≤5 years by anthropometric indicator: height for age (stunting), division and sex**

Prevalence of malnutrition in children	Dhaka		Chittagong <sup>a</sup>		CHT <sup>b</sup>		Rajshahi		Khulna		Rangpur		Barisal		Sylhet		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Severe	18.2	14.3	16.0	20.5	10.8	12.2	15.0	12.4	12.3	16.0	19.0	20.8	16.7	19.1	22.4	17.6	16.7	16.8
Mild and Moderate	21.0	24.1	24.9	28.3	15.1	16.9	22.9	21.8	25.6	21.7	23.7	20.6	26.5	22.5	28.6	29.0	23.5	23.4
Normal	60.8	61.5	59.1	51.2	74.1	70.9	62.2	65.8	62.1	62.4	57.4	58.7	56.8	58.3	49.0	53.4	59.8	59.8
Mean (Z-Scores)	-1.6	-1.5	-1.7	-1.8	-1.3	-1.1	-1.5	-1.4	-1.4	-1.5	-1.5	-1.5	-1.5	-1.6	-1.9	-1.8	-1.5	-1.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total stunting (≤ -2SD and ≤ -3SD)	39.2	38.5	40.9	48.8	25.9	29.1	37.8	34.2	37.9	37.6	42.6	41.3	43.2	41.7	51.0	46.6	40.2	40.2

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamali, Khagrachhari & Bandarban districts

From the table 5.3.1.c, it is clear that malnutrition in the form of stunting of U5 children is negatively associated with household income expenditure and education level. As for example, lowest incidence of stunting was found in group having highest income-expenditure record, and in group having completed secondary and higher education.

**Table 5.3.1.c: Percent distribution of malnourished children aged ≤5 years by anthropometric indicator: height for age (stunting), household income expenditure and education**

Prevalence of malnourished U5 children	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
Severe	22.2	18.3	17.3	15.6	11.0	19.5	20.8	15.0	16.3	12.3	19.8	22.3	16.0	15.4	10.1	16.8
Mild and Moderate	26.1	24.6	24.3	22.5	19.8	24.1	25.2	26.5	21.8	19.4	25.3	26.2	26.5	21.9	16.7	23.4
Normal	51.7	57.1	58.5	61.8	69.2	56.4	54.0	58.5	61.9	68.3	54.9	51.5	57.5	62.7	73.2	59.8
Mean (Z-Scores)	-1.8	-1.6	-1.6	-1.5	-1.3	-1.8	-1.7	-1.5	-1.5	-1.2	-1.8	-1.8	-1.7	-1.4	-1.1	-1.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total stunting (≤ -2SD and ≤ -3SD)	48.3	42.9	41.5	38.2	30.8	43.6	46.0	41.5	38.1	31.7	45.1	48.5	42.5	37.3	26.8	40.2

Income group: Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka 14801 through high  
Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

Weight-for-height measures body mass in relation to body length and describes current nutritional status. Children with weight for height more than -2SD unit and below the mean weight for height of the reference population are classified as wasted, while those with weight for height more than -3SD unit and below the average of the reference standard are considered severely wasted. As wasting or thinness is usually the result of a recent illness or acute nutritional deficiency, prevalence of wasting may vary considerably by season.

The prevalence of wasting at national level is 25.3% in girls and 22.3% in boys. There was no significant difference between the prevalence of wasting in urban and rural area but it is higher in girls than boys (25 % versus 22%) in both rural and urban residence. The proportion of severely wasted children is 6.5% in girls and 7.2% in boys. Severe wasting condition increases the risk of mortality.

**Table 5.3.2.a: Percent distribution of malnourished children aged ≤5 years by anthropometric indicator: weight for height (wasting), residence and sex**

Cut off points (Z scores)	Urban		Rural		Total	
	Male	Female	Male	Female	Male	Female
Severe (≤ -3SD)	7.3	5.9	7.2	6.8	7.2	6.5
Mild and Moderate (≤ -2SD)	15.2	19	15	18.7	15.1	18.8
Normal (> -2SD)	77.5	75.2	77.8	74.5	77.7	74.7
Mean (Z scores)	-0.9	-0.8	-0.9	-1	-0.9	-0.9
Total	100	100	100	100	100	100
Total wasting (≤ -2SD and ≤ -3SD)	22.5	24.9	22.2	25.5	22.3	25.3

Among all administrative divisions, Dhaka has the lowest proportion of wasted children (boys 18.2% and girls 21.0%) and Rajshahi has the highest proportion of wasted children (boys 27.2% and girls 30.4%) as compared to all other divisions.

**Table 5.3.2.b: Percent distribution of malnourished children aged ≤5 years by anthropometric indicator: weight for height (wasting), division and sex**

Prevalence of malnutrition in children	Dhaka		Chittagong <sup>a</sup>		CHT <sup>b</sup>		Rajshahi		Khulna		Rangpur		Barisal		Sylhet		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Severe	4.6	4.9	7.2	6.5	6.4	6.7	10.7	7.8	7.9	6.2	7.7	7.2	8.2	9.5	9.0	5.6	7.2	6.5
Mild and Moderate	13.6	16.2	17.3	21.8	17.7	20.7	16.5	22.5	18.0	22.4	14.0	17.2	13.4	15.0	11.0	17.9	15.1	18.8
Normal	81.8	79.0	75.4	71.7	75.9	72.7	72.8	69.6	74.1	71.4	78.3	75.6	78.4	75.5	80.0	76.5	77.7	74.7
Mean (Z-Scores)	-0.8	-0.8	-1.1	-1.1	-0.9	-0.9	-1.1	-0.9	-1.0	-0.9	-0.9	-0.9	-0.8	-1.0	-1.1	-1.0	-0.9	-0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total wasting (≤ -SD and ≤ -3SD)	18.2	21.0	24.6	28.3	24.1	27.3	27.2	30.4	25.9	28.6	21.7	24.4	21.6	24.5	20.0	23.5	22.3	25.3

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari & Bandarban districts

Table 5.3.2.c reveals that household income, expenditure and educational level differentials for wasting are not consistent or not clear like the differentials for stunting.

**Table 5.3.2.c: Percent distribution of malnourished children aged ≤5 years by anthropometric indicator: weight for height (wasting), household income, expenditure and education level**

Prevalence of malnutrition in children	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
Severe	5.9	6.9	7.8	7.5	4.4	5.7	9.4	6.3	6.6	4.3	6.6	6.2	6.5	7.1	5.5	6.6
Mild and Moderate	21.3	19.7	18.1	15.9	19.1	19.5	20.5	18.7	18.2	17.0	19.2	19.6	16.0	19.3	18.6	18.7
Normal	72.8	73.5	74.1	76.6	76.5	74.8	70.1	75.0	75.1	78.7	74.2	74.2	77.4	73.5	75.9	74.7
Mean (Z-Scores)	-0.9	-1.0	-1.0	-0.9	-0.7	-0.9	-1.2	-0.9	-0.9	-0.7	-1.0	-0.9	-0.9	-0.9	-0.7	-0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total wasting (≤ -2SD and ≤ -3SD)	27.2	26.5	25.9	23.4	23.5	25.2	29.9	25.0	24.9	21.3	25.8	25.8	22.6	26.5	24.1	25.3

Income group: Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka 14801 through high  
Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

Weight for age is a measurement of both acute and chronic malnutrition. Children with weight for age more than -2SD unit and below the average weight of children of the same age in the reference population are considered moderately or severely underweight, while those with weight for age more than -3SD unit and below the standard mean are classified as severely underweight.

The prevalence of underweight (weight for Age) at national level is about 45% in both boys and girls. In rural area, the prevalence is higher (45%) than the prevalence in urban area (43%) for both sexes. The proportion of severely underweight children is 15.3 % in boys and 17.3% in girls.

**Table 5.3.3.a: Percent distribution of malnourished children aged ≤ 5 years by anthropometric indicator of nutritional status: weight for age (underweight), residence and sex**

Cut off points (Z scores)	Urban		Rural		Total	
	Male	Female	Male	Female	Male	Female
Severe ( $\leq -3SD$ )	15.8	15	15.1	18.4	15.3	17.3
Mild and Moderate ( $\leq -2SD$ )	27	27.6	29.9	27.4	29.1	27.5
Normal ( $> -2SD$ )	57.1	57.4	55	54.2	55.6	55.2
Mean (Z scores)	-1.6	-1.7	-1.6	-1.8	-1.6	-1.7
Total	100	100	100	100	100	100
Total underweight ( $\leq -2SD$ and $\leq -3SD$ )	42.8	42.6	45.0	45.8	44.4	44.8

Table 5.3.3.b shows that Chittagong has the highest proportion (boys 52.6% and girls 51.4%) of underweight children followed by Sylhet (boys 51.0% and girls 45.8%).

**Table 5.3.3.b: Percent distribution of malnourished children aged ≤ 5 years by anthropometric indicator of nutritional status: weight for age (underweight), division and sex**

Prevalence of mainnutrition in children	Dhaka		Chittagong <sup>a</sup>		CHT <sup>b</sup>		Rajshahi		Khulna		Rangpur		Barisal		Sylhet		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Severe	13.4	15.8	17.1	19.6	12.7	18.4	18.1	12.5	15.4	17.9	14.0	17.9	15.7	17.2	18.6	23.4	15.3	17.3
Mild and Moderate	27.0	26.4	35.5	31.9	26.8	19.1	26.7	31.1	30.0	29.1	29.4	26.0	25.1	27.8	32.4	22.4	29.1	27.5
Normal	59.6	57.8	47.4	48.6	60.6	62.5	55.2	56.4	54.6	53.0	56.7	56.1	59.2	55.0	49.0	54.2	55.6	55.2
Mean (Z-Scores)	-1.5	-1.6	-1.9	-1.9	-1.6	-1.4	-1.8	-1.6	-1.6	-1.7	-1.7	-1.7	-1.6	-1.7	-1.9	-1.9	-1.7	-1.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Uweight ( $\leq -2SD$ and $\leq -3SD$ )	40.4	42.2	52.6	51.4	39.4	37.5	44.8	43.6	45.4	47.0	43.3	43.9	40.8	45.0	51.0	45.8	44.4	44.8

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari & Bandarban districts

A negative relationship is observed between household income, expenditure and the percent of underweight children; children in the poorest households are more likely to be underweight (50%) compared with children in the highest income expenditure households. A similar negative association is observed between education level and prevalence of underweight in children with some exceptions.

**Table 5.3.3.c: Percent distribution of malnourished children aged ≤ 5 years by anthropometric indicator of nutritional status: weight for age (underweight), household income, expenditure and education level**

Prevalence of malnutrition in children	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
Severe	21.8	18.8	18.4	15.6	12.3	17.5	23.9	17.0	17.4	10.8	22.0	23.2	15.6	16.0	8.4	17.4
Mild and Moderate	30.2	29.7	27.4	26.6	24.1	31.6	29.9	26.5	25.3	24.2	26.5	27.0	30.0	28.3	24.3	27.5
Normal	48.0	51.5	54.1	57.9	63.6	50.9	46.2	56.5	57.4	65.1	51.5	49.9	54.4	55.7	67.4	55.1
<b>Mean (Z-Scores)</b>	<b>-1.9</b>	<b>-1.9</b>	<b>-1.8</b>	<b>-1.7</b>	<b>-1.4</b>	<b>-1.8</b>	<b>-2.0</b>	<b>-1.7</b>	<b>-1.7</b>	<b>-1.3</b>	<b>-1.9</b>	<b>-1.8</b>	<b>-1.7</b>	<b>-1.7</b>	<b>-1.3</b>	<b>-1.7</b>
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total underweight (≤ SD and ≤ -3SD)	52.0	48.5	45.9	42.1	36.4	49.1	53.8	43.5	42.6	34.9	48.5	50.1	45.6	44.3	32.6	44.9

Income group: Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka 14801 through high.  
Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high.

In present survey, the prevalence of both wasting and underweight are significantly higher than that reported in other recent surveys like BDHS 2012. The main reason may be seasonal variation in the survey time and/or may be due to sample fluctuation. The NHDSBD-2011 was conducted throughout the year from March 2011 to March 2012 that included two lean seasons (March to April and mid-September to November). In lean seasons, food intake decreases significantly especially in rural areas. On the other hand, wasting represents inadequate intake of nutrition in the period immediately preceding the survey and may be the result of inadequate food intake or recent episodes of illness causing loss of weight and the onset of malnutrition; whereas underweight reflects both recent and chronic malnutrition.

#### 5.4 Nutritional Status of >5 to ≤ 10 Years Old Children

The present survey also collected anthropometric data to measure nutritional status of children aged >5 years to ≤10 years. This period of life is also vulnerable for a child in terms of physical, mental, cognitive and social development issues. Same indicators were used for the measurement of nutritional status of this group as was used for under 5 children.

Nationally 36.5% boys and 30.6% girls of age >5 years to ≤10 years are stunted. Prevalence of stunting is slightly higher in both boys and girls who reside in rural area compared with those in urban area.

**Table 5.4.1.a: Percent distribution of malnourished children aged >5 years to ≤ 10 years by anthropometric indicator: height for age (stunting), residence and sex**

Cut off points (Z scores)	Urban		Rural		Total	
	Male	Female	Male	Female	Male	Female
Severe (≤ -3SD)	14.3	11.0	15.8	10.7	15.4	10.8
Mild and Moderate (≤ -2SD)	19.8	17.8	21.6	20.5	21.1	19.8
Normal (> -2SD)	65.8	71.2	62.5	68.8	63.5	69.4
<b>Mean (Z scores)</b>	<b>-1.4</b>	<b>-1.2</b>	<b>-1.5</b>	<b>-1.3</b>	<b>-1.5</b>	<b>-1.3</b>
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total stunting (≤ -2SD and ≤ -3SD)	34.2	28.8	37.5	31.2	36.5	30.6



In this age group, stunting is highest in Sylhet (boys 46.3% and girls 47.9%) followed by Barisal (boys 44.8% and girls 38.7%) and lowest in Rangpur (boys 28.9% and girls 22.0%).

**Table 5.4.1.b: Percent distribution of malnourished children aged >5 years to ≤ 10 years by anthropometric indicator: height for age (stunting), division and sex**

Cut off points (Z-scores)	Dhaka		Chittagong <sup>a</sup>		CHT <sup>b</sup>		Rajshahi		Khulna		Rangpur		Barisal		Sylhet		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Severe (≤ -3SD)	11.5	10.0	18.4	10.5	19.6	17.1	10.2	8.3	12.3	8.0	15.7	9.5	23.2	13.3	18.5	18.5	15.4	10.8
Mild and Moderate (≤ -2SD)	19.3	20.3	26.2	21.7	15.2	20.0	24.6	15.0	18.8	16.0	13.3	12.5	21.6	25.3	27.8	29.4	21.1	19.8
Normal (> -2SD)	69.2	69.6	55.5	67.8	65.2	62.9	65.3	76.7	68.8	76.0	71.1	78.0	55.2	61.3	53.7	52.1	63.5	69.4
Mean (Z scores)	-1.3	-1.3	-1.8	-1.5	-1.5	-1.6	-1.3	-1.1	-1.4	-1.2	-1.2	-1.0	-1.6	-1.5	-1.9	-1.8	-1.5	-1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total stunting (≤ -2SD and ≤ -3SD)	30.8	30.4	44.5	32.2	34.8	37.1	34.7	23.3	31.2	24.0	28.9	22.0	44.8	38.7	46.3	47.9	36.5	30.6

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari & Bandarban districts

Similar to stunting, prevalence of underweight is slightly higher in rural area. About 48.8% boys and 42.5% girls of this age group is underweight nationally.

**Table 5.4.2.a: Percent distribution of malnourished children aged >5 years to ≤ 10 years by anthropometric indicator: weight for age (underweight), residence and sex**

Cut off points (Z scores)	Urban		Rural		Total	
	Male	Female	Male	Female	Male	Female
Severe (≤ -3SD)	11.7	10.9	14.9	9.2	14.0	9.6
Mild and Moderate (≤ -2SD)	34.7	30.9	34.8	33.5	34.8	32.8
Normal (> -2SD)	53.6	58.2	50.3	57.3	51.2	57.5
Mean (Z scores)	-1.8	-1.7	-1.9	-1.7	-1.9	-1.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total underweight (≤ -2SD and ≤ -3SD)	46.4	41.8	49.7	42.7	48.8	42.5

Among all administrative divisions, the prevalence of underweight in both sexes is highest in Chittagong division (boys 61.0% and girls 50.4%). Within division, prevalence of underweight varies significantly with the difference of sex.

**Table 5.4.2.b: Percent distribution of malnourished children aged >5 years to ≤ 10 years by anthropometric indicator: weight for age (underweight), division and sex**

Cut off points (Z scores)	Dhaka		Chittagong <sup>a</sup>		CHT <sup>b</sup>		Rajshahi		Khulna		Rangpur		Barisal		Sylhet		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Severe (≤ -3SD)	14.6	10.2	16.2	8.1	6.7	5.4	8.3	5.1	12.6	11.5	11.7	8.4	16.7	11.6	18.6	13.8	14.0	9.6
Mild and Moderate (≤ -2SD)	32.6	31.9	44.8	42.2	28.9	37.8	38.0	36.8	32.2	26.4	31.0	22.7	27.3	36.8	34.5	31.7	34.8	32.8
Normal (> -2SD)	52.7	57.9	39.0	49.6	64.4	56.8	53.7	58.1	55.2	62.1	57.3	69.0	56.1	51.6	46.9	54.5	51.2	57.5
Mean (Z scores)	-1.8	-1.7	-2.1	-1.9	-1.6	-1.7	-1.7	-1.7	-1.9	-1.7	-1.8	-1.4	-1.9	-1.8	-2.1	-2.0	-1.9	-1.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total underweight (≤ -2SD and ≤ -SD)	47.3	42.1	61.0	50.4	35.6	43.2	46.3	41.9	44.8	37.9	42.7	31.0	43.9	48.4	53.1	45.5	48.8	42.5

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari & Bandarban districts

Among the age group, the prevalence of wasting at national level is 27.5% in girls and 23.7% in boys. There was no significant difference between the prevalence of wasting in urban and rural area, but it is higher among girls than among boys in both rural and urban residence. The proportion of severely wasted children is 6.1% in girls and 7.8% in boys.

**Table 5.4.3.a: Percent distribution of malnourished children aged >5 years to ≤ 10 years by anthropometric indicator: weight for height (wasting), residence and sex**

Cut off points (Z scores)	Urban		Rural		Total	
	Male	Female	Male	Female	Male	Female
Severe (≤ -3sd)	7.0	7.2	8.1	5.6	7.8	6.1
Mild and Moderate (≤ -2sd)	16.3	19.9	15.7	22.1	15.9	21.5
Normal (> -2sd)	76.7	72.9	76.1	72.3	76.3	72.5
Mean (Z scores)	-1.2	-1.2	-1.3	-1.3	-1.2	-1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total wasting (≤ -2sd and ≤ -3sd)	23.3	27.1	23.9	27.7	23.7	27.5

The highest prevalence (boys 27.3% and girls 32.0%) of wasting is observed in Khulna division and the lowest prevalence is in CHT (boys 13.6% and girls 13.8%).

**Table 5.4.3.b: Percent distribution of malnourished children age >5 years to ≤ 10 years according to anthropometric indicator: weight for height (wasting), division and sex**

Cut off points (Z scores)	Dhaka		Chittagong <sup>a</sup>		CHT <sup>b</sup>		Rajshahi		Khulna		Rangpur		Barisal		Sylhet		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Severe (≤ -3SD)	7.8	4.9	8.1	6.5	4.5		6.6	7.3	5.6	6.5	10.9	7.7	9.5	9.0	6.3	2.7	7.8	6.1
Mild and Moderate (≤ -2SD)	18.3	22.2	19.0	22.6	9.1	13.8	14.9	26.6	21.7	25.4	4.8	17.2	11.9	18.6	18.8	17.7	15.9	21.5
Normal (> -2SD)	73.9	72.9	72.9	71.0	86.4	86.2	78.5	66.1	72.7	68.0	84.2	75.1	78.6	72.4	75.0	79.6	76.3	72.5
Mean (Z scores)	-1.3	-1.3	-1.4	-1.5	-0.6	-0.8	-1.3	-1.3	-1.3	-1.3	-1.1	-1.2	-1.0	-1.2	-1.3	-1.0	-1.2	-1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total wasting (≤ -2SD and ≤ -3SD)	26.1	27.1	27.1	29.0	13.6	13.8	21.5	33.9	27.3	32.0	15.8	24.9	21.4	27.6	25.0	20.4	23.7	27.5

<sup>a</sup> Chittagong includes CHT<sup>b</sup> CHT includes only Rangamati, Khagrachhari & Bandarban districts

## 5.5 Breastfeeding

Breastfeeding is a unique source of nutrition and plays a crucial role in the growth, development and survival of infants. Essential care methods for newborns include initiation of breastfeeding within one hour of birth, giving no prelacteal feeds, exclusive breastfeeding for the first six months of life and providing complementary foods from six months of age with continued breastfeeding up to 2 years of life.

The respondents consisted of women who have at least one child of age ≤5 years during the survey of breastfeeding. The present survey shows that 97.8% of women fed colostrum to their baby just after birth and 85.3% of women started breastfeeding within one hour of birth, whereas 8.3% of women started breastfeeding within 24 hours.

**Table 5.5.1.a: Percent distribution of children (age ≤5 years during the survey) who received various liquid food other than breast milk (prelacteal liquid) after 3 days of birth by residence**

	Urban	Rural	Total
Milk other than breast milk	24.9	27.4	26.6
Plain water	5.8	7.2	6.8
Sugar/Glucose water	27.5	34.3	32.2
Fruit juice	4.7	1.2	2.2
Water mixed with sugar and salt	3.5	3.1	3.2
Tin food	13.7	6.7	8.9
Honey	18.4	17.5	17.8
Others	1.5	2.6	2.2
Total	100	100	100

About 78.7% of respondents women did not give any liquid food other than breast milk after three days of birth. Among the children of age ≤ 5 years during the time of survey who received various liquid foods other than breast milk after 3 days of birth, the most common item used to eat was sugar/glucose water (32.2%), followed by milk other than breast milk (26.6%), honey (17.8%) and some other prelacteal liquids.

The practice of giving various liquid foods other than breast milk after three days of birth varies significantly with variations of divisions. Most frequently given liquid foods are sugar/glucose (51.5%) in Dhaka; honey (43.5%) in Chittagong; honey (35.3%) in CHT; milk other than breast milk (28.6%) in Rajshahi; milk other than breast milk (31.1%) in Khulna; milk other than breast milk (33.3%) and honey (33.3%) in Rangpur; honey (60.7%) in Barisal and sugar or glucose water (46.9%) in Sylhet.

**Table 5.5.1.b: Percent distribution of children (aged ≤5 years during the survey) who received various liquid food other than breast milk (prelacteal liquid) after 3 days of birth by divisions**

Prelacteal liquid intake by U5 children	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Milk other than breast milk	31.6	6.5	14.7	28.6	31.1	33.3	20.2	10.9	26.6
Plain water	3.0	7.4	17.6	0.0	15.8	0.8	3.6	23.4	6.8
Sugar/Glucose water	51.5	13.9	17.6	14.3	15.3	9.2	7.1	46.9	32.2
Fruit juice	0.6	3.7	0.0	19.0	6.8	0.0	1.2	1.6	2.2
Water mixed with sugar and salt	1.4	5.6	0.0	9.5	1.1	15.0	0.0	1.6	3.2
Tin food	7.1	11.1	5.9	28.6	16.9	5.0	7.1	1.6	8.9
Honey	4.5	43.5	35.3	0.0	11.3	33.3	60.7	7.8	17.8
Others	0.4	8.3	8.8	0.0	1.7	3.3	0.0	6.3	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>a</sup> Chittagong includes CHT<sup>b</sup> CHT includes only Rangamati, Khagrachhari & Bandarban districts

There is no significant association between the practices of giving various liquid foods other than breast milk after three days of birth and household income expenditure and education level.

**Table 5.5.1.c: Percent distribution of children (age ≤5 years during the survey) who received various liquid food other than breast milk (prelacteal liquid) after 3 days of birth by prelacteal liquid intake, household income-expenditure and education**

Prelacteal liquid intake by U5 children	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
Milk other than breast milk	24.9	22.0	29.7	25.8	28.9	24.1	26.3	25.1	29.0	28.4	24.7	21.0	23.9	28.2	34.8	26.6
Plain water	7.8	9.0	7.8	6.3	3.9	8.9	6.5	5.6	8.1	5.3	7.8	6.7	5.7	7.3	5.2	6.8
Sugar/Glucose water	34.1	33.9	30.5	32.1	31.3	34.6	35.5	31.1	32.3	27.9	38.2	37.1	32.1	29.1	21.7	32.2
Fruit juice	2.4	1.7	2.0	2.3	2.7	3.7	0.9	2.8	2.0	1.9	1.1	3.8	1.3	3.1	2.6	2.2
Water mixed with sugar and salt	4.9	5.1	3.9	1.4	1.6	3.1	4.1	5.6	1.6	1.4	4.0	7.6	4.4	2.0	0.0	3.2
Tin food	7.3	4.0	5.5	9.0	16.8	6.8	3.7	7.2	8.9	18.3	5.2	2.9	6.9	9.8	25.2	8.9
Honey	17.1	22.6	18.4	20.4	12.1	17.3	22.6	19.9	14.9	13.9	17.0	18.1	23.9	18.2	8.7	17.8
Others	1.5	1.7	2.3	2.7	2.7	1.6	0.5	2.8	3.2	2.9	2.0	2.9	1.9	2.5	1.7	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Income group: Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka 14801 through high  
 Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

Exclusive breastfeeding for the first six months of life can help protect newborns and infants from different diseases, reduce the risk of mortality and promote healthy development. In present survey, overall rate of exclusive breastfeeding to six months of age is 63.4%; and about 80.5% of children were given complementary food (mostly home-made: 66.4%) beside breastfeeding.

### **5.6 Vitamin A supplement**

Vitamin A deficiency impairs the immune system of infants and young children increasing their chances of dying from common childhood infectious diseases. Bangladesh has made very good progress in reducing vitamin A deficiency among U5 children through vitamin A supplementation.

In the present survey, mothers who have U5 children were asked whether their child ( $\leq 5$  years) had received a vitamin A capsule within the six months preceding the survey. It was found that about 92.3% of children aged 0-59 months had received a vitamin A supplement in the last six months.

The Government of Bangladesh is committed to achieving its targets for Millennium Development Goal 5: reducing the maternal mortality ratio (MMR) to 143 deaths per 100,000 live births by 2015 and increasing skilled attendance at birth to 50%. The reproductive health care services that a mother receives during her pregnancy and at the time of delivery are important for the well-being of the mother and her child.

### 6.1 Antenatal care

Antenatal care (ANC) includes prophylaxis, early screening and treatment of diseases for the mother and the fetus. Antenatal care from a medically trained provider is important to monitor the pregnancy and reduce the risks for the mother and child during pregnancy and at delivery. In order to determine the quality of antenatal care, women who gave birth to children during the two preceding years of survey were interviewed. The result shows that 73.5% of women who had a live birth in two years preceding the survey received antenatal care from a healthcare provider (trained or untrained) at least once for the most recent birth.

WHO recommends a minimum of four antenatal visits based on a review of the effectiveness of different models of antenatal care. WHO guidelines are specific on the content on antenatal care visits, which includes: blood pressure measurement, urine testing for bacteria and proteinuria, blood testing to detect syphilis and severe anemia and weight/height measurement (optional).

The result shows that 23.5% of the respondent women do not go for antenatal care visit, 17% go for one visit, 18.2% go for two visits, 14.5% go for three visits and 26.8% go for 4+ visits. In urban areas, the ideal no of visit (i.e. 4+) is higher (35%) than in the rural areas (23.1%).

**Table 6.1.1.a: Percent distribution of women who gave birth to children in the two years preceding the survey by number of antenatal care (ANC) visits and residence**

No of ANC visit	Urban	Rural	Total
0	18.9	25.6	23.5
1	13.6	18.6	17.0
2	18.0	18.2	18.2
3	14.5	14.6	14.5
4+	35.0	23.1	26.8
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

Among administrative divisions, percent of mothers who go for 4+ ANC visits is highest (38%) in Chittagong Hill Tracts and lowest in Sylhet (15.4%).

**Table 6.1.1.b: Percent distribution of women who gave birth to children in two years preceding the survey by number of antenatal care (ANC) visits and division**

No of ANC visit	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
0	22.7	22.0	20.2	25.3	22.9	23.1	26.6	29.0	23.5
1	14.9	15.6	10.1	31.0	14.3	17.5	17.0	25.3	17.0
2	20.3	18.8	12.4	13.8	17.8	16.1	21.4	17.9	18.2
3	16.1	13.7	19.4	9.2	15.1	13.5	14.8	12.3	14.5
4+	26.0	29.8	38.0	20.7	29.9	29.9	20.1	15.4	26.8
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

a. Chittagong includes CHT

b. CHT includes only Rangamati, Khagrachari & Bandarban districts

Table 6.1.1.c shows that there is a significant positive association between the ideal number of ANC visit (i.e. 4+) and household income, expenditure and education of the mothers. The result reveals that mothers of highest income expenditure group and mothers who have completed secondary or higher education are more likely to go for 4+ ANC visits (43.9%, 43.2% and 53.3% respectively).

**Table 6.1.1.c: Percent distribution of women who gave birth to children in two years preceding the survey by number of antenatal care (ANC) visits and household income expenditure and education**

No of ANC visit	Income					Expenditure					Education				Total	
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete		Secondary complete and higher
0	26.9	24.6	27.9	23.1	15.8	27.9	24.2	29.3	21.0	15.7	33.4	31.4	26.3	17.3	12.7	23.5
1	21.2	22.1	16.9	15.6	11.7	23.2	19.7	15.4	15.6	12.3	22.0	20.8	19.6	15.0	6.3	17.0
2	17.9	20.7	18.4	20.4	14.8	17.8	20.3	16.4	21.2	15.5	20.2	18.8	21.7	16.5	14.0	18.2
3	15.3	14.0	16.1	13.1	13.8	14.6	15.3	15.2	14.3	13.4	10.7	12.5	10.2	19.5	13.7	14.5
4+	18.7	18.5	20.7	27.8	43.9	16.5	20.5	23.6	27.9	43.2	13.7	16.5	22.3	31.7	53.3	26.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

**Income group:** Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka 14801 through high  
**Expenditure group:** Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

Knowledge about pregnancy related complications is important to avoid their life threatening consequences for both mother and fetus. About 67% of respondent women know about the **five danger signs** of pregnancy and 86% women have knowledge that it is **essential to eat more than normal diet** during pregnancy period.

During the ANC visits, blood pressure (39.3%) and weight (49%) were measured; collection of blood (26.3%) and urine (31.3%) samples and testing of ultrasonogram (28.2%) of the pregnant respondent women were performed during their last recent pregnancy.

**Table 6.1.2.a: Percent distribution of women who gave birth to children in the two years preceding the survey by at least one check up of the listed parameter and residence**

	Urban	Rural	Total
Body weight	56.7	45.6	49.0
Blood pressure	47.7	35.6	39.3
Urine	38.9	27.9	31.3
Blood	34.9	22.5	26.3
Ultra sonogram	36.8	24.4	28.2

Table 6.1.2.b presents the division wise percent distribution of women who gave birth to children in two years preceding the survey by at least one check up of the body weight, blood pressure, urine, blood and ultra-sonogram. It has been revealed that amongst the women varies slightly due to the variation of divisions concerned.

**Table 6.1.2.b: Percent distribution of women who gave birth to children in two years preceding the survey by at least one checkup of the listed parameter by division**

ANC checkup	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Body weight	56.1	43.0	34.1	57.5	47.5	51.5	44.5	40.7	49.0
Blood pressure	48.7	42.2	33.3	24.7	47.2	23.1	40.6	29.0	39.3
Urine	39.8	29.0	26.4	5.2	36.7	23.4	38.4	27.2	31.3
Blood	35.3	26.9	21.7	2.3	30.9	15.2	32.8	21.6	26.3
Ultra sonogram	37.7	29.8	21.7	2.3	35.4	14.9	30.6	26.5	28.2

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari & Bandarban districts

As depicted in table 6.1.2.c, there is a positive association between percent of women who go for at least one checkup of the listed parameter (among those who have given birth to children in the two years preceding the survey) and background characteristics such as household income, expenditure and educational level.

**Table 6.1.2.c: Percent distribution of women who gave birth to children in the two years preceding the survey by at least one checkup of the listed parameter by household income, expenditure and education level**

ANC checkup	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
Body weight	43.0	47.1	47.0	48.2	57.8	42.5	48.5	45.1	50.9	57.2	34.9	40.4	46.4	57.1	65.7	49.0
Blood pressure	27.1	33.3	37.1	41.8	53.6	26.2	34.7	37.5	43.6	52.6	24.7	34.1	34.3	46.7	59.3	39.3
Urine	18.7	22.7	28.8	34.7	46.9	19.1	26.4	26.5	36.2	46.2	16.5	24.7	23.9	37.9	57.0	31.3
Blood	14.1	17.9	23.9	29.3	41.8	14.6	21.4	21.9	29.3	42.5	11.4	20.8	16.9	32.9	54.0	26.3
Ultra sonogram	15.9	19.3	25.3	32.0	44.0	15.7	23.1	23.4	32.9	44.0	12.4	20.0	21.4	35.5	54.3	28.2

Income group: Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka 14801 through high

Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

Neonatal tetanus is one of the principal causes of death among infants in many developing countries. It can be prevented by giving tetanus toxoid injections to mother during pregnancy. Usually a pregnant woman should receive at least two doses of tetanus toxoid to achieve protection for herself and for her newborn baby.

The NHDSBD-2011 collected data for the last birth in last two years preceding the survey to know whether the mother received any **tetanus toxoid vaccinations** during that pregnancy. It estimates the extent of tetanus coverage during pregnancy. It was observed that 63.8% of respondent women have taken at least two doses of tetanus toxoid during the period of last pregnancy.



## 6.2 Delivery Information

The provision of assistance by skilled attendants during delivery can greatly improve birth outcomes and benefit the health of neonate and mother. It can be achieved by facilitating technically appropriate delivery procedures and also by accurate and quick diagnosis and treatment of complications that may arise. Having a skilled attendant at delivery is defined as assistance provided by a doctor, nurse, midwife or auxiliary midwife. In this survey, where women who gave birth within the past two years were asked whether their first delivery was normal or not, 91.5% women answered it to be normal. When same respondent women were investigated about the delivery method of their last child, 85.2% delivery was found to be normal per vaginal (urban 78.3% and rural 88.2%) and overall 13.9% delivery was caesarean (20.5% in urban and 11% in rural areas); while 0.9% were others.

## 6.3 Postnatal Care of Mother and Newborn

Postnatal care is an important component of maternal and reproductive health and is essential for safe motherhood and neonatal health. A large proportion of maternal and neonatal deaths occur during the 24 hours following delivery. In addition, the first two days following delivery are critical period for monitoring complications for both mothers and the newborns.

The NHDSBD-2011 finding reveals that 24.9% of respondent mothers had received postnatal care from a medically trained healthcare provider within 42 days after delivery. Postnatal checkup for children is more common and better (37.5%) than that for the mothers (24.9%).

As revealed in the present survey, blade of delivery kits (24.9%) and blade from other sources (61%) are the most common instruments used to cut the umbilical cord. About 1.4% use bamboo strips to cut the cord. In case of 72% births, the instrument used to cut the cord was boiled before use and in 47.2% birth, no medication or other was applied to the cord after cutting and knotting it.

In present survey, respondent women were inquired whether they had received vitamin A capsule during the first two months after the birth of their last child or not. It was observed that overall 23.5% (urban 27.4% and rural 21.8%) of women had received a vitamin A dose during this period of time.

## 6.4 Prevalence of Anemia in Women

Anemia is one of the public health problem and a key health status indicator for maternal nutrition in both developed and developing countries. Despite heaps of endeavors set for prevention and control of anemia, such as iron supplementation and fortification programs prevalence of anemia in women of reproductive age is still alarming.

In NHDSBD-2011, blood sample was collected from women of age 13-40 years to measure hemoglobin level which is the standard and common index for screening anemia. Cyanmethhaemoglobin method using Boerringer Mannheim (Mannheim, Germany) kits was employed to determine the hemoglobin level among 5418 respondent women. Venous blood collected from antecubital vein was used for this purpose. Table 6.4.1 shows the anemia prevalence based on hemoglobin levels according to different background characteristics like age, residence and divisions.

It has been shown that prevalence of anemia varies according to residence and division. Anemia prevalence is higher in rural areas (34.1%) than in the urban (29.1%). It is extremely high in women who live in Syihet division (95.6%), which is followed by CHT Hill Tracts division (93.5%) and it is lowest in Dhaka division (4.4%). Nationally 32.6% women of this age group are anemic as categorized by hemoglobin level.

**Table 6.4.1: Percent distribution and degree of anemia (Hb level) amongst non-pregnant women (NP) of age 13-40 years by age, residence and division**

Anemia prevalence	Severe anemia	Moderate anemia	Mild anemia	Any level of anemia	Number of women
	NP <7.0 g/dl	NP (7.0-9.9) g/dl	NP (10.0-11.9) g/dl	NP <12.0 g/dl	
<b>Age</b>					
13-18	4.4	11.1	16.3	31.8	478
>18-40	4.1	12.1	16.4	32.6	4940
<b>Residence</b>					
Urban	3.5	11.1	14.5	29.1	1636
Rural	4.4	12.5	17.2	34.1	3782
<b>Division</b>					
Dhaka	0.2	1	3.2	4.4	1705
Chittagong	8.1	16.8	22	46.9	838
CHT Hill tracts	20.1	56.8	16.6	93.5	169
Rajshahi	1.3	6.7	22.1	30.1	629
Khulna	1	11.3	27.1	39.4	619
Rangpur	5.7	12.6	23	41.3	913
Barisal	1.5	15.7	22	39.2	337
Sylhet	24	56.7	14.9	95.6	208
All	4.2	12	16.4	32.6	5418

In Sylhet, it appears from the dietary consumption that iron intake is low compared to the other regions. In case of CHT, no dietary or sanitary practice was seen to have any relation. However, other factors may cause this problem, which needs further in depth study.

The present survey also collected data on iron and folic acid supplementation. Finding revealed that overall 61.6% of the respondent women received iron supplementation and 23.4% of women received folic acid during their most recent pregnancy.

Adequate micronutrient intake by women has important benefits for both women and their children. Breastfed children benefit from micronutrient supplementation that mothers receive, especially vitamin A. Finally, iodine deficiency is related to a number of adverse pregnancy outcomes including abortion and stillbirth, as well as fetal brain damage and congenital malformation. In Bangladesh, micronutrient deficiency among pregnant and lactating mothers is a common public health problem.

## Nutritional Status of the Household Members (Adolescent, Adult, Old Age)

Malnutrition is a public health problem in the developing third world countries. Young children and mothers are mostly affected by malnutrition. Because of inability to cope with morbidity, malnourished children are much more vulnerable than the malnourished adult. Good health and nutritional status of mothers is crucial for the children as well as for themselves. Besides, good nutritional status of all age groups is also important for their healthy and productive life. Therefore, in most of the national and international health and/or nutrition survey, young children and mothers are commonly included to address this health issue.

In order to determine the nutritional status, the NHDSBD-2011 measured the height and weight of all age group people. The Body Mass Index (BMI) is used to measure thinness or obesity and is calculated by dividing weight in kilograms by the square of height in meter ( $\text{kg}/\text{m}^2$ ). A cutoff point of BMI  $<18.5$  is used to define thinness or chronic energy deficiency; and BMI  $\geq 25$  usually indicates overweight and BMI  $\geq 30$  indicate obesity for adult population.

### 7.1 Nutritional status of Adolescents

WHO identifies adolescence as the period in human growth and development that occurs after childhood and before adulthood i.e. from ages of 10 to 19 year? It represents one of the critical transitions in the life span and is characterized by a tremendous pace in growth and change that is second only to that of infancy. Total nutrient needs are higher during adolescence than any other time in the lifecycle. Nutrition and physical growth are integrally related; optimal nutrition is a requisite for achieving full growth potential.

In the present study, nutritional status of adolescent girls and boys are measured by anthropometric indicators i.e. height for age and BMI for age by using Anthro Plus software (WHO 2009). Indicators for nutritional status can be expressed in Z-scores, or Standard Deviation Unit (SD), which show how the children differ from the mean. The weight-for-age curve enables countries that routinely measure only weight to monitor growth throughout childhood. In older children, i.e. above 10 years, weight-for-age is not a good indicator as it cannot distinguish between height and body mass in an age period where many children are experiencing the pubertal growth spurt and may appear as having excess weight (by weight-for-age) when in fact they are just tall. BMI-for-age is the recommended indicator for assessing thinness, overweight and obesity in children 10-19 years of age (WHO 2006).

Height-for-age represents a measure of the long-term effects of malnutrition in a group of population. It does not vary appreciably with the change of the season of data collection. Table 7.1.1.a present the nutritional status of adolescents aged 10-19 years with reference to height for age, residence and sex. It is observed that prevalence of long term malnutrition is slightly higher in adolescents who live in rural areas compared to adolescents who live in urban areas. It is for both the sexes. When considering sex, prevalence of malnutrition is significantly higher in boys compared to that in girls (nationally boys 16.1% and girls 10.3%). But there is no significant difference in prevalence of overall stunting nationally due to the difference of sex (boys 40.1% and girls 39.5%).

**Table 7.1.1.a: Percent distribution of malnourished adolescents aged 10-19 years by anthropometric indicator: height for age (stunting), residence and sex**

Cut of point (Z score)	Urban		Rural		Total	
	Male	Female	Male	Female	Male	Female
Severe stunted ( $Z < -3SD$ )	14.1	8.5	17.0	11.2	16.1	10.3
Moderate stunted ( $-3SD \leq Z < -2SD$ )	21.7	28.0	25.0	29.7	24.0	29.2
Normal ( $-2SD \leq Z \leq +2SD$ )	64.3	63.5	57.0	58.8	59.2	60.3
Overweight ( $Z > +2SD$ )	-	-	1.0	0.2	0.7	0.1
Mean (Z score)	-1.64	-1.65	-1.79	-1.82	-1.75	-1.77
Total	100	100	100	100	100	100
Total stunting (Severe and Moderate)	35.7	36.5	42.0	40.9	40.1	39.5

Among the administrative divisions, prevalence of long term malnutrition is highest in adolescent girls and boys (boys 52.9% and girls 42.3%) who live in Sylhet division. Though prevalence of severe stunting varies according to division, but in all divisions adolescent boys are more malnourished than adolescent girls.

**Table 7.1.1.b: Percent distribution of malnourished adolescent age 11-19 years according to anthropometric indicator: height for age (stunting) by divisions and sex**

Cut of point (Z score)	Dhaka		Chittagong <sup>a</sup>		CHT <sup>b</sup>		Rajshahi		Khulna		Rangpur		Barisal		Sylhet		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Severe stunted (Z<-3SD)	11.0	8.9	22.5	10.7	15.8	10.0	17.6	13.6	10.3	4.1	16.3	11.8	14.9	12.0	29.4	16.7	16.1	10.3
Moderate stunted (-3SD≤Z<-2SD)	24.9	29.7	26.8	33.5	26.3	30.0	16.7	23.9	22.7	30.9	25.9	32.5	23.8	22.5	23.5	25.6	24.0	29.2
Normal (-2SD≤Z≤+2SD)	62.7	61.4	50.7	55.8	52.6	60.0	65.7	62.5	67.0	64.9	57.1	55.7	60.4	64.1	47.1	57.7	59.2	60.3
Overweight (Z>+2SD)	1.4	-	-	-	5.3	-	-	-	-	-	0.7	-	1.0	1.4	-	-	0.7	0.1
Mean (Z score)	-1.58	-1.76	-2.05	-1.86	-1.80	-1.67	-1.66	-1.68	-1.52	-1.55	-1.76	-1.98	-1.74	-1.68	-2.12	-1.96	-1.75	-1.77
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total stunting (Severe and Moderate)	35.9	38.6	49.3	44.2	42.1	40.0	34.3	37.5	33.0	35.1	42.2	44.3	38.6	34.5	52.9	42.3	40.1	39.5

<sup>a</sup> Chittagong includes CHT

<sup>b</sup>CHT includes only Rangamati, Khagrachari & Bandarban districts

In 2007 the World Health Organization (WHO) published a growth reference of BMI for children aged 5-19 years (de Onis *et al.*, 2007). BMI does not normally increase with age as do weight and height individually. BMI-for-age is useful in screening for overweight and obesity. For children aged 5-19 years, the +1SD in the WHO reference (equivalent to the 85<sup>th</sup> percentile) is the cut-off for overweight and the +2SD (equivalent to the 97<sup>th</sup> percentile) is the recommended cut-off for obesity. For thinness and severe thinness the cut-offs are -2 and -3 SD, respectively (Dinsdale *et al.*, 2011).

Table 7.1.2.a shows the nutritional status of adolescents of both sexes and aged 10 to 19 years by residence. It is shown that 9.9% boys and 2.8% girls are suffering from thinness (BMI for age Z score <-3SD) and 4.5% boys and 3.3% girls are overweight or obese (BMI for age Z score > +1SD).

Rural boys and girls are more likely to be undernourished or thin than the urban boys and girls, but the prevalence of overweight or obese in both sexes is significantly higher in urban areas compared to the rural areas. In both urban and rural areas boys are more likely to be thin (25.7% and 29.0% respectively) than girls of both urban and rural areas (10.9% and 13.7% respectively).

**Table 7.1.2.a: Percent distribution of malnourished adolescents aged 11-19 years by anthropometric indicator: BMI for age (thinness), residence and sex**

Cut off points (Z scores)	Urban		Rural		Total	
	Male	Female	Male	Female	Male	Female
Severe thinness (Z < -3SD)	8.3	2.4	10.5	3.0	9.9	2.8
Mild and Moderate thinness (-3SD ≤ Z < -2SD)	17.4	8.5	18.5	10.8	18.1	10.0
Total thin	25.7	10.9	29.0	13.7	28.0	12.8
Normal (-2SD ≤ Z ≤ +1SD)	66.4	84.8	68.0	83.5	67.5	83.9
Overweight (+1SD < Z ≤ +2SD)	5.7	3.7	2.3	2.6	3.3	2.9
Obesity (Z > +2SD)	2.3	0.7	0.7	0.2	1.1	0.3
Total overweight or obesity	7.9	4.3	3.0	2.8	4.5	3.3

As shown in Table 7.1.2.b nutritional status of this age group varies significantly shows according to administrative divisions. Sylhet division has the highest proportion of underweight adolescent boys (41.2%) and Chittagong has the highest proportion of underweight adolescent girls (16.3%). The prevalence of overweight or obesity is significantly higher in adolescent of both sexes (boys 15.8% and girls 8.3%) in Chittagong as compared to other divisions.

**Table 7.1.2.b: Percent distribution of malnourished adolescent age 11-19 years by anthropometric indicator BMI for age (thinness), division and sex**

Cut off points (Z scores)	Dhaka		Chittagong <sup>a</sup>		CHT <sup>b</sup>		Rajshahi		Khulna		Rangpur		Barisal		Sylhet		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Severe thinness (Z < -3SD)	10.4	3.2	16.9	3.3	5.3	-	4.9	2.2	10.3	3.1	4.1	1.9	10.8	3.5	13.7	3.8	9.9	2.8
Mild and Moderate thinness (-3SD ≤ Z < -SD)	19.0	10.9	19.7	13.0	5.3	3.3	13.7	8.2	20.6	11.9	12.8	9.4	21.6	7.0	27.5	10.3	18.1	10.0
Total thin	29.4	14.1	36.6	16.3	10.5	3.3	18.6	10.3	30.9	14.9	16.9	11.3	32.4	10.5	41.2	14.1	28.0	12.8
Normal (-2SD ≤ Z ≤ +1SD)	64.9	82.5	62.7	81.9	73.7	88.3	79.4	86.4	62.9	81.4	77.7	85.0	60.8	87.4	58.8	83.3	67.5	83.9
Overweight (+1SD < Z ≤ +2SD)	4.3	3.2	0.7	1.9	15.8	6.7	1.0	3.3	4.1	3.1	4.1	3.3	4.9	1.4	-	2.6	3.3	2.9
Obesity (Z > +2SD)	1.4	0.3	-	-	-	1.7	1.0	-	2.1	0.5	1.4	0.5	2.0	0.7	-	-	1.1	0.3
Total overweight or obesity	5.7	3.4	0.7	1.9	15.8	8.3	2.0	3.3	6.2	3.6	5.4	3.8	6.9	2.1	0.0	2.6	4.5	3.3

<sup>a</sup>Chittagong includes CHT

<sup>b</sup>CHT includes only Rangamati, Khagrachari & Bandarban districts

Because adolescence is a time of tremendous biological, psychosocial and cognitive growth and development, nutrition interventions need to be tailored to the developmental level of each individual adolescent.

## 7.2 Nutritional Status of Adults

Age range-15 to 49 years is commonly considered as reproductive age (WHO, 2006). Table 7.2.1.a shows the nutritional status of household members of both sexes and age 15 to <49 years by residence. Overall nutritional status of 60.4% women and 62.9% men of age 15 to <49 years is normal (BMI 18.5-24.99), while 24.8% women and 25.3% men are suffering from chronic energy deficiency or thinness (BMI <18.5) and 14.9% women and 11.8% men are overweight or obese (BMI  $\geq$  25).

Nutritional status of this age group varies significantly due to the difference in sex and residence. Rural men and women are more likely to be undernourished or thin than the urban men and women, but in case of overweight or obesity the scenario is totally reverse. The proportion of overweight and/or obese in both sexes is significantly higher in urban areas compared to the rural areas. Women of both rural and urban areas are more likely to be overweight or obese (12.6% and 20% respectively) than men of both rural and urban areas (10.2% and 16% respectively).

**Table 7.2.1.a: Nutritional status (BMI criteria) of household members (age 15 to < 49 years) by sex and residence**

BMI categories	BMI (kg/m <sup>2</sup> ) cut off point	Urban		Rural		Total	
		Male	Female	Male	Female	Male	Female
Moderate and severe thin	<17	8.2	10.2	8.8	9.9	8.6	10.0
Mild thin	17-18.499	13.9	13.1	17.7	15.6	16.7	14.8
Total thin	<18.5	22.1	23.3	26.5	25.5	25.3	24.8
Normal	18.5-24.99	62.0	56.8	63.3	62.0	62.9	60.4
Overweight	25-29.99	14.3	16.7	9.6	10.9	10.9	12.7
Obese	$\geq$ 30	1.6	3.3	0.6	1.7	0.9	2.2
Total Overweight obese	$\geq$ 25	15.9	20.0	10.2	12.6	11.8	14.9

Table 7.2.1.b presents nutritional status of household member aged 15 to < 49 years by sex and division. It has been observed that nutritional status varies significantly across the divisions. For instance, prevalence of undernutrition or thinness (BMI <18) is highest for both sexes (men 36.4% and women 34.3%) in Sylhet. Among other divisions, interestingly prevalence of thinness is highest (men 32.7% and women 28.7) in Chittagong and lowest (men 11.9% to women 11.9%) in CHT.

Considering total overweight and obesity (BMI  $\geq$ 25), prevalence is highest in CHT (men 17.5% and women 25.6%) and lowest in Sylhet (men 9.9% and women 6.9%). In case of obesity, prevalence in men is highest in Rajshahi and Barisal (1.5%) and prevalence in women is highest in CHT, Khulna and Barisal (2.6%). As is common, women are more likely to be obese or overweight than men.

**Table 7.2.1.b: Nutritional status (BMI criteria) of household members (age 15 to < 49 years) by sex and division**

BMI categories	BMI (kg/m <sup>2</sup> ) Cut off point	Dhaka		Chittagong <sup>a</sup>		CHT <sup>b</sup>		Rajshahi		Khulna		Rangpur		Barisal		Sylhet		Total	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Moderate & severe thin	<17	9.1	10.2	11.6	12.3	4.2	2.3	7.0	8.8	9.3	11.2	4.9	7.5	12.5	11.9	13.2	12.7	8.6	10.0
Mild thin	17-18.499	17.0	14.6	21.1	16.4	7.7	9.6	16.2	14.1	15.6	13.7	16.0	14.7	15.1	14.1	23.1	21.6	16.7	14.8
Total thin	<18.5	26.1	24.8	32.7	28.7	11.9	11.9	23.2	22.9	24.9	24.9	20.9	22.2	27.7	26.0	36.4	34.3	25.3	24.8
Normal	18.5-24.99	61.8	59.4	54.6	58.7	70.6	62.5	62.6	60.0	65.2	60.2	68.8	64.6	61.6	59.0	53.7	58.8	62.9	60.4
Overweight	25-29.99	11.4	13.4	11.6	11.0	16.8	23.0	12.7	14.9	9.1	12.3	9.8	11.0	9.2	12.3	9.9	6.6	10.9	12.7
Obese	$\geq$ 30	0.7	2.3	1.0	1.7	0.7	2.6	1.5	2.2	0.8	2.6	0.5	2.2	1.5	2.6	--	0.2	0.9	2.2
Total >weight/obs	$\geq$ 25	12.1	15.7	12.6	12.7	17.5	25.6	14.2	17.1	9.9	14.9	10.3	13.2	10.7	15.0	9.9	6.9	11.8	14.8

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachari & Bandarban districts

Table 7.2.2.a depicts the nutritional status of household members of age 49 to < 60 years by sex and residence. About 56% women and 63.4% men of this age group have normal BMI (18.5-24.99%), while 25% women and 26.2% men are undernourished or thin (BMI<18.5), and 19.4% women and 10.4% men are overweight or obese (BMI ≥25).

In urban areas men are more likely to be undernourished or thin than the women (27.6% and 20.3%), but in rural areas women are more likely to be undernourished or thin than men (27% versus 25.7%). The proportion of overweight and/or obese in both sexes is significantly higher in urban areas compared to the rural areas. Women of both rural and urban areas are about two times more likely to be overweight or obese (16.5% and 27% respectively) than the men of both rural and urban areas (9.7% and 12.4%). In case of the obesity only, women are about 4 times more obese than the men (3.1% and 0.7% respectively).

As regard to the nutritional status of adults (age ≥15 years), rural people are suffering more from chronic energy deficiency or thinness as compared to the urban people. In contrast, urban people are more likely to be overweight and obese than rural ones. The proportion of overweight or obese women is higher than men in both rural and urban residence.

**Table 7.2.2.a: Nutritional status (BMI criteria) of household members (age 49 to <60 years) by sex and residence**

BMI category	BMI (kg/m <sup>2</sup> ) cut off point	Urban		Rural		Total	
		Male	Female	Male	Female	Male	Female
Moderate and severe thin	<17	12.4	12.1	12.0	12.6	12.1	12.4
Mild thin	17-18.499	15.2	8.2	13.7	14.3	14.1	12.6
Total thin	<18.5	27.6	20.3	25.7	26.9	26.2	25.0
Normal	18.5-24.99	60.0	52.7	64.5	56.7	63.4	55.6
Overweight	25-29.99	12.4	22.7	8.7	13.9	9.7	16.3
Obese	≥30	--	4.3	1.0	2.6	0.7	3.1
Total Overweight and obese	≥25	12.4	27.0	9.7	16.5	10.4	19.4

Nutritional status of household members aged 49 to <60 years by sex and division is presented in table 7.2.2.b. It was revealed that prevalence of undernutrition or thinness (BMI<18) for both sexes (men 43.8% and women 27.7%) is highest in Chittagong and lowest (men 15.0% to women 21.4%) in Khulna.

As regard prevalence of total overweight and obesity (BMI≥25) of this age group is the highest in Rajshahi (men 11.8% and women 26.2%), while prevalence among onle male is highest in Chittagong Hill Tracts. Prevalence of obesity for male is highest in CHT (8.3%), while prevalence for women is highest in Khulna (6.8%).

**Table 7.2.2.b: Nutritional status (BMI criteria) of household members (age 49 to <60 years) by divisions and sex**

BMI category	BMI (kg/m <sup>2</sup> ) cut off point	Dhaka		Chittagong <sup>a</sup>		CHT <sup>b</sup>		Rajshahi		Khulna		Rangpur		Barisal		Sylhet		Total	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
		Moderate and severe thin	<17	17.5	9.1	25.0	18.5	-	14.8	11.8	6.0	6.7	5.1	5.6	16.9	4.4	14.0	21.4	29.0
Mild thin	17-18.49	12.6	12.1	18.8	9.2	33.3	7.4	13.7	13.1	8.3	16.2	16.9	11.0	13.3	17.4	7.1	9.7	14.1	12.6
Total thin	<18.5	30.1	21.2	43.8	27.7	33.3	22.2	25.5	19.0	15.0	21.4	22.5	28.0	17.8	31.4	28.6	38.7	26.2	25.0
Normal	18.5-24.99	55.3	57.0	52.1	54.6	50.0	63.0	62.7	54.8	76.7	51.3	64.8	57.6	75.6	57.0	71.4	51.6	63.4	55.6
Overweight	25-29.99	13.6	20.0	4.2	15.1	8.3	11.1	11.8	21.4	8.3	20.5	11.3	13.6	6.7	9.3	--	6.5	9.7	16.3
Obese	≥30	1.0	1.8	--	2.5	8.3	3.7	--	4.8	--	6.8	1.4	0.8	--	2.3	--	3.2	0.7	3.1
Total Overweight /obese	≥25	14.6	21.8	4.2	17.6	16.7	14.8	11.8	26.2	8.3	27.4	12.7	14.4	6.7	11.6	0.0	9.7	10.4	19.4

<sup>a</sup> Chittagong includes CHT

<sup>b</sup>CHT includes only Rangamati, Khagrachari & Bandarban districts

### 7.3 Nutritional Status of Old Age People

The ageing of population is an indicator of improving global health. In almost every country, the proportion of people aged over 60 years is growing faster than any other age group. This indicates both longer life expectancy and declining fertility rate. At the same time, the specific need of older populations is increasing which draw attention to address their requirements separately and comprehensively. For a developing country like Bangladesh, this large population puts a lot of socioeconomic and health challenges. However, the existing information regarding this issue is not sufficient. Hence to explore the exact health and nutritional status of elderly people and their wants, the present survey collect information about the lifestyle, dietary pattern, disease prevalence and nutritional status of this older population.

Nutritional status of the older people (age  $\geq 60$  years) by sex and residence is shown in the table 7.3.1.a. About 47.5% women and 52.3% men of this age group have normal BMI (18.5-24.99), while 38.4% women and 38.5% men are undernourished or thin (BMI <18.5) and 14.2% women and 9.1% men are overweight or obese (BMI  $\geq 25$ ). Nutritional status of old age people significantly varies according to sex and residence. Rural men and women are more likely to be undernourished or thin (40.3% and 41.7% respectively) than the urban men and women (33.6% and 31% respectively). The proportion of overweight and/or obese in women is significantly higher (about two times) in urban areas compared to rural areas (22.3% versus 10.6%). Urban men are more likely to be overweight and/or obese than the rural men. As regard obesity (BMI  $\geq 30$ ), urban women are about three times more obese than the rural women (5.8% and 1.6% respectively), and surprisingly there was found no man in both rural and urban who was obese.

**Table 7.3.1.a: Nutritional status (BMI) of old age (age  $\geq 60$  years) household members by sex and residence**

BMI category	BMI (kg/m <sup>2</sup> ) cut off point	Urban		Rural		Total	
		Male	Female	Male	Female	Male	Female
Moderate and severe thin	<17	19.6	17.3	21.8	27.6	21.2	24.4
Mild thin	17-18.49	14.0	13.7	18.5	14.1	17.3	14.0
Total thin	<18.5	33.6	31.0	40.3	41.7	38.5	38.4
Normal	18.5-24.99	55.1	46.8	51.3	47.8	52.3	47.5
Overweight	25-29.999	11.2	16.5	8.4	9.0	9.1	11.3
Obese	$\geq 30$	--	5.8	--	1.6	--	2.9
Total Overweight and obese	$\geq 25$	11.2	22.3	8.4	10.6	9.1	14.2

Among administrative divisions, prevalence of under nutrition or thinness (BMI<18) for both sexes (men 71.4% and women 65.5%) is significantly higher in Sylhet compared with other divisions. The prevalence of overweight is highest in CHT (men 29.4% and women 14.3%). Considering only female, prevalence of overweight is highest in Rajshahi (18.8%). About 9.5% female of CHT are obese. No man of this age group is found to be in obese category.



**Table 7.3.1.b: Nutritional status (BMI) of old age (age ≥60 years) household members by sex and divisions**

BMI category	BMI (kg/m <sup>2</sup> ) cut off point	Dhaka		Chittagong <sup>a</sup>		CHT <sup>b</sup>		Rajshahi		Khulna		Rangpur		Barisal		Sylhet		Total	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Moderate & severe thin	<17	22.0	27.3	20.3	25.3	5.9	23.8	13.9	12.5	18.3	27.0	21.3	16.2	20.4	18.5	57.1	37.9	21.2	24.4
Mild thin	17-18.499	13.0	7.4	15.3	20.5	11.8	9.5	27.8	12.5	21.1	9.5	19.1	8.1	16.7	24.1	14.3	27.6	17.3	14.0
Total thin	<18.5	35.0	34.7	35.6	45.8	17.6	33.3	41.7	25.0	39.4	36.5	40.4	24.3	37.0	42.6	71.4	65.5	38.5	38.4
Normal	18.5-24.99	57.0	52.9	55.9	43.4	52.9	42.9	41.7	53.1	52.1	51.4	55.3	62.2	53.7	38.9	28.6	20.7	52.3	47.5
Overweight	25-29.99	8.0	9.9	8.5	9.6	29.4	14.3	16.7	18.8	8.5	8.1	4.3	10.8	9.3	14.8	--	13.8	9.1	11.3
Obese	≥30	--	2.5	--	1.2	--	9.5	--	3.1	--	4.1	--	2.7	--	3.7	--	--	--	2.9
Total Overweight /obese	≥25	8.0	12.4	8.5	10.8	29.4	23.8	16.7	21.9	8.5	12.2	4.3	13.5	9.3	18.5	0.0	13.8	9.1	14.2

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachari&Bandarban districts

#### 7.4 Prevalence of Common Diseases among Old Age Persons

In order to assess the prevalence of common diseases, 1066 old age persons were inquired whether they have any disease. It is observed that 32.4% of the old age people have gastric problem, 12.1% have hazy vision, 11.2% have knee pain, 7.5% have diabetes, 3.6% have digestive complication, 3.5% have dental problem, 3% have urinary difficulties, 2.8% have heart disease and 2.4% have hearing difficulty. As regards diabetes, prevalence is higher in urban old age people than that in rural old age people (9.2% versus 6.8%).

**Table 7.4.1.a: Percent distribution of common diseases of old age people (self -reported) by residence**

	Urban	Rural	Total
Diabetes	9.2	6.8	7.5
Heart disease	2.5	2.9	2.8
Kidney disease	0.3	0.7	0.6
Urine problem	4.4	2.4	3.0
Bone decay problem	0.6	0.8	0.8
Pain in knee	8.3	12.4	11.2
Bronchial asthma	1.6	1.5	1.5
Teeth problem	2.5	3.9	3.5
Peptic ulcer	0.3	0.1	0.2
Digestion problem	2.5	4.0	3.6
Hazy vision	15.2	10.8	12.1
Hearing problem	1.9	2.7	2.4
Gastric	33.3	32.0	32.4
Diabetes+Heart problem	0.0	0.3	0.2
Diabetes+Kidney problem	0.0	0.1	0.1
Diabetes+Heartproblem+Kidney problem	0.3	0.0	0.1
Others	16.8	18.8	18.2
Total	100.0	100.0	100.0

Administrative division wise there are some variations in the prevalence of diseases among old age people. Gastric is the most predominant disease in all divisions. Prevalence of diabetes is highest in Dhaka (9.5%) followed by Chittagong (9.2%). As regards heart problem, self reported prevalence is highest in Sylhet (8.5%) followed by Barisal (5.4%).

**Table 7.4.1.b: Percent distribution of common diseases of old age people (self -reported) by division**

Prevalence of chronic disease	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Diabetes	9.5	9.2	3.9	3.8	6.3	6.7	7.7	5.1	7.5
Heart problem	1.8	3.1	2.0	2.6	1.7	1.0	5.4	8.5	2.8
Kidney problem	1.1	1.0	0.0	0.0	0.6	0.0	0.0	0.0	0.6
Urine problem	3.6	0.0	5.9	2.6	2.3	8.7	3.1	0.0	3.0
Bone decay problem	0.7	0.0	2.0	1.3	2.3	0.0	0.0	0.0	0.8
Pain in knee	15.7	5.6	17.6	11.5	10.9	10.6	8.5	10.2	11.2
Bronchial asthma	1.5	1.5	0.0	0.0	1.7	2.9	2.3	0.0	1.5
Teeth problem	5.8	1.5	7.8	2.6	1.7	4.8	2.3	1.7	3.5
Peptic ulcer	0.0	0.0	0.0	1.3	0.6	0.0	0.0	0.0	0.2
Digestion problem	3.6	2.1	2.0	3.8	4.6	1.9	5.4	5.1	3.6
Hazy vision	14.6	10.3	11.8	3.8	10.3	14.4	7.7	28.8	12.1
Hearing problem	1.8	2.6	3.9	1.3	2.3	2.9	3.1	3.4	2.4
Gastric	29.9	29.7	17.6	38.5	37.7	30.8	39.2	28.8	32.4
Diabetes+Heart problem	0.0	0.5	0.0	1.3	0.0	0.0	0.0	0.0	0.2
Diabetes+Kidney problem	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.1
Diabetes+Heart problem +Kidney problem	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Others	10.2	32.3	25.5	25.6	17.1	14.4	15.4	8.5	18.2
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachari & Bandarban districts

Table 7.4.1.c present self reported prevalence of common diseases according to household income, expenditure and education and result reveal that there is no significant association between background characteristics and prevalence of diseases specified in the following table.

**Table 7.4.1.c: Percent distribution of common diseases of old age people (self -reported) by household income, expenditure and education**

Prevalence of chronic disease	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
Diabetes	2.7	6.4	6.0	9.5	8.7	5.7	4.4	4.3	9.2	9.6	3.5	2.9	7.5	8.8	11.3	7.5
Heart problem	5.4	1.1	1.4	3.2	3.1	2.3	2.2	3.8	2.0	3.1	2.2	2.9	1.3	2.8	3.4	2.8
Kidney problem	0.0	2.1	0.5	0.4	0.5	1.1	1.5	0.0	0.8	0.3	1.8	1.4	0.0	0.3	0.0	0.6
Urine problem	1.8	3.2	3.7	3.6	2.6	2.3	3.0	3.4	2.8	3.1	1.3	4.3	3.8	3.0	2.3	3.0
Bone decay problem	0.9	3.2	0.5	0.0	0.8	1.1	0.7	1.4	0.8	0.3	0.0	0.0	1.3	1.0	1.1	0.8
Pain in knee	11.6	9.6	10.1	11.5	11.8	9.2	14.8	13.0	11.6	9.1	9.2	5.7	11.9	13.3	10.2	11.2
Bronchial Asthma	0.0	1.1	1.4	1.2	2.3	0.0	0.7	1.4	2.4	1.6	1.8	1.4	0.6	2.0	1.1	1.5
Teeth problem	4.5	1.1	4.1	4.0	3.1	1.1	4.4	3.8	4.4	2.8	5.7	2.9	1.9	3.5	2.3	3.5
Peptic ulcer	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.4	0.3	0.0	0.0	0.6	0.3	0.0	0.2
Digestion problem	7.1	1.1	4.1	2.8	3.3	3.4	3.7	2.4	3.2	4.4	3.5	4.3	2.5	4.5	2.3	3.6
Hazy vision	8.0	13.8	10.6	10.3	14.9	11.5	9.6	10.6	10.8	14.8	13.6	8.6	13.2	12.5	10.2	12.1
Hearing problem	4.5	0.0	4.1	1.6	2.1	3.4	2.2	2.4	3.2	1.8	0.9	2.9	2.5	3.3	2.3	2.4
Gastric	33.0	37.2	35.0	32.4	29.5	41.4	33.3	32.2	30.0	31.6	37.3	38.6	38.4	28.1	29.9	32.4
Diabetes + Heart problem	0.0	1.1	0.0	0.4	0.0	0.0	0.7	0.0	0.4	0.0	0.0	0.0	0.6	0.3	0.0	0.2
Diabetes + Kidney problem	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.6	0.1
Diabetes +Heart +Kidney problem	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.1
Others	20.5	19.1	17.5	18.6	17.4	17.2	18.5	21.2	17.6	17.1	18.9	24.3	13.8	16.5	23.2	18.2
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Income group: Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800. Rank-5: taka14801 through high  
 Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

In Bangladesh like other developing countries, the geriatric population is in gradual increase and their problems are also increasing day by day. So more attention and extensive health care services, especially for non-communicable diseases like cataract and gastroenteritis, etc is becoming felt-need for the aged people.

## Chapter – 08

### Family Planning

According to the National Population Policy, Bangladesh aims to achieve replacement level fertility by 2015 (MOHFW, 2009). Additionally, the Health Population Nutrition Sector Development Program (HPNSDP) plans to reduce the Total Fertility Rate (TFR) to 2.0 children per woman by 2016 (MOHFW, 2011). Use of family planning is one of the major factors which can lower fertility.

The present survey collects information on contraceptive use and related information. This chapter presents findings regarding ever use and current use of contraceptives, use of different family planning methods, contact with family planning workers, discussion of family planning with the spouse, and other related issues associated with family planning.

#### 8.1 Current Use of Contraception

In the NHDSBD-2011, all of the respondents were asked whether they have adapted any kind of family planning method or not. If the answer is yes, then they were asked which method they have adapted currently for family planning and which one they prefer most.

The survey reveals that 76% respondents currently use one kind of family planning method of their choice (urban 76.6% and rural 75.6%) and most of them use modern methods of family planning. Taking pill is the most widely used method (45.9% in both urban and rural) followed by injection for female (15.6%), male condom (5%), ligation (4.5%), vasectomy (1.3%) and IUD (1.1%). Use of male condom is higher in urban area compared to the rural area (8.4% versus 3.6%).

**Table 8.1.1.a: Percent distribution of currently adapted method for family planning by residence**

	Urban	Rural	Total
Taking pill	45.9	45.9	45.9
IUD	1.4	1.0	1.1
Injection for female	14.0	16.3	15.6
Male condom	8.4	3.6	5.0
Ligation	4.1	4.6	4.5
Vasectomy	1.2	1.4	1.3
Natural	0.3	0.9	0.7
Others	1.3	2.0	1.8
Don't use any method	23.4	24.4	24.0
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

When respondents use more than one method then only most effective method was counted in this table.

As presented in table 8.1.1.b that there are some variations in the current use of family planning method according to division. It is indicated that percent of respondents who currently do not use any one kind of family planning method is highest in Sylhet (33.4%) followed by Chittagong (33.2%) and CHT (32.7%). Use of male condom is highest in Dhaka (8.2%) followed by Khulna (6.1%). Taking pill is the most widely used method in all divisions.

**Table 8.1.1.b: Percent distribution of currently adapted method for family planning by division**

Family planning method	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Taking pill	50.2	39.7	38.0	59.7	45.6	45.9	37.5	37.7	45.9
IUD	0.5	2.1	0.7	2.0	1.4	0.4	1.3	0.6	1.1
Injection for female	12.6	18.0	6.7	10.3	16.2	21.3	21.3	14.0	15.6
Male condom	8.2	2.6	3.7	5.1	6.1	3.0	4.5	0.9	5.0
Ligation	4.9	3.3	1.0	2.8	5.3	4.9	5.7	6.0	4.5
Vasectomy	1.4	0.7	0.3	0.8	1.3	1.5	2.0	1.1	1.3
Natural	0.0	0.0	12.7	0.3	0.0	0.1	0.0	1.4	0.7
Others	2.1	0.4	4.3	0.5	2.9	1.0	1.0	4.9	1.8
Don't use any method	20.1	33.2	32.7	18.6	21.1	21.8	26.7	33.4	24.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>a</sup>Chittagong includes CHT<sup>b</sup>CHT includes only Rangamati, Khagrachari & Bandarban districts

As shown in table 8.1.1.c, there is a small variation in contraceptive use due to the variation of respondent's household income, expenditure and education level, except for male condom and injection for female. Use of injection for female decreased with the increase of household income, expenditure and education level. On the other hand, use of male condom increased with the decrease of household income expenditure and education level.

**Table 8.1.1.c: Percent distribution of currently adapted method for family planning by household income, expenditure and education**

Family planning method	Income					Expenditure					Education				Total	
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete		Secondary complete and higher
Taking pill	45.0	46.0	45.5	48.0	45.3	46.7	45.7	44.4	46.2	46.5	42.0	43.7	48.4	49.6	45.8	45.9
IUD	1.4	1.3	1.1	0.8	0.9	0.7	1.0	1.8	1.3	0.7	1.0	1.4	0.7	1.2	1.2	1.1
Injection for female	17.4	19.4	17.4	13.3	11.1	18.2	17.7	16.6	13.8	11.5	18.6	21.2	17.1	14.7	7.2	15.6
Male condom	2.5	2.7	4.4	5.4	9.5	2.7	3.6	3.9	5.7	9.3	1.9	1.6	4.0	5.6	14.9	5
Ligation	4.6	5.1	4.6	4.2	4.0	4.5	3.8	4.1	4.7	5.2	5.9	4.5	3.9	3.7	2.8	4.5
Vasectomy	1.4	1.4	1.4	1.3	0.7	1.7	1.5	1.3	0.7	1.0	1.4	1.9	1.5	0.8	0.9	1.3
Natural	0.2	0.7	0.5	0.9	1.3	0.4	0.2	0.8	1.1	1.2	0.5	0.5	0.2	0.6	2.3	0.7
Others	2.1	2.3	1.7	1.7	1.4	1.9	2.0	2.1	1.9	1.0	2.3	2.1	2.5	1.2	1.5	1.8
Don't use any method	25.5	21.1	23.4	24.5	25.8	23.2	24.5	25.1	24.6	23.6	26.4	23.1	21.7	22.5	23.4	24
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100

Income group: Rank-1:taka0-5500 , Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka14801 through high

Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

## 8.2 Sources of Family Planning Methods

In order to investigate the sources of family planning method they use, the respondents were asked from where they have known about the methods for the last time. It has been observed that pharmacy/shop (38.7%) is the most common source, followed by health center (14.6%) and health worker (12.8%). In rural area, healthcare center and health worker are more common source of family planning method compared to urban area.

**Table 8.2.1.a: Percent distribution of sources of last contraception method adapted by residence**

Source of Contraception	Urban	Rural	Total
Hospital/Medical College	6.6	6.1	6.2
Family Welfare Centre	0.5	0.8	0.7
Health Center	13.7	15.0	14.6
Satellite clinic	1.6	1.3	1.4
Maternal and Child Welfare Centre	3.4	1.6	2.2
EPI Centre	1.2	1.6	1.5
Health worker supplied	9.7	14.2	12.8
Bought from Pharmacy/Shop	42.9	36.8	38.7
Others	2.1	2.3	2.2
Did not adapt any methods	18.3	20.2	19.6
Total	100.0	100.0	100.0

Table 8.2.1.b represents the percent distribution of sources of last contraception method adapted by administrative divisions. It has been observed that there are some variations in sources due to variation of divisions. In Dhaka, most common source is pharmacy/shop (38.4%) followed by health worker (25.2%). In Rangpur, the first common source of contraception method is pharmacy/shop (29.6%) and the second one is health center (26.6%).

**Table 8.2.1.b: Percent distribution of sources of last contraception method adapted by division**

Sources of contraception method	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Hospital/Medical College	5.0	8.9	3.0	4.9	5.2	9.1	3.8	9.4	6.2
Family Welfare Centre	0.5	0.1	0.0	0.3	0.3	3.1	0.3	0.0	0.7
Health Center	9.6	12.2	4.3	14.2	19.1	26.6	13.5	11.7	14.6
Satellite Clinic	1.6	0.2	0.0	0.8	2.1	1.2	1.0	5.7	1.4
Maternal and Child Welfare Centre	1.4	1.2	1.3	0.5	2.4	5.6	2.0	2.6	2.2
EPI Centre	1.6	2.2	0.0	0.0	2.4	0.1	4.2	0.0	1.5
Health worker supplied	25.2	9.4	9.7	4.3	14.3	6.1	7.5	5.1	12.8
Bought from Pharmacy/Shop	38.4	41.2	34.7	59.5	35.4	29.6	38.5	30.3	38.7
Others	1.9	1.7	3.0	0.2	3.4	3.4	2.8	1.4	2.2
Did not adapt any methods	14.7	22.8	44.0	15.4	15.1	15.2	26.3	33.7	19.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>a</sup>Chittagong includes CHT

<sup>b</sup>CHT includes only Rangamati, Khagrachari & Bandarban districts

Sources of contraception method do not show any association with household income, expenditure and education level, except for bought from pharmacy/shop. Respondents of highest household income expenditure group and

having completed secondary or higher education are more likely to buy contraception method from pharmacy/shop.

**Table 8.2.1.c: Percent distribution of sources of last contraception method adapted by household income expenditure and education**

Sources of contraception method	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
Hospital/Medical college	6.5	7.4	6.5	4.7	6.2	5.5	4.6	8.1	5.7	7.2	7.8	7.1	6.5	5.2	4.6	6.2
Family Welfare Centre	0.6	0.9	1.1	0.3	0.7	0.3	1.1	0.6	0.9	0.7	0.8	0.5	0.9	0.6	0.7	0.7
Health center	18.4	18.6	15.5	11.8	9.5	19.1	16.7	14.4	12.9	9.8	18.2	18.1	15.1	13.0	8.6	14.6
Satellite clinic	1.4	1.8	2.0	1.1	0.8	1.9	1.4	1.3	1.7	0.8	1.7	1.8	1.9	1.1	0.7	1.4
Maternal and Child Welfare Centre	2.0	2.5	2.1	2.2	2.2	2.4	1.5	2.5	2.1	2.2	2.0	2.4	2.5	2.2	2.0	2.2
EPI centre	1.6	2.6	1.5	1.3	0.8	1.8	2.1	1.5	1.5	0.6	1.0	1.6	2.0	2.0	0.4	1.5
Health worker supplied	12.2	14.4	14.0	14.0	10.1	12.0	15.7	14.8	12.1	9.7	15.8	14.1	14.3	11.8	7.9	12.8
Bought from Pharmacy /shop	34.6	32.8	36.0	41.3	47.2	35.7	34.1	35.2	40.9	47.3	29.2	33.2	37.8	44.4	50.6	38.7
Others	3.4	1.4	1.3	2.7	2.4	2.1	2.3	2.4	2.5	2.0	1.9	3.0	1.7	1.9	3.7	2.2
Did not adapt any methods	19.2	17.6	20.0	20.7	20.2	19.2	20.5	19.3	19.6	19.6	21.5	18.1	17.4	17.8	20.9	19.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Income group: Rank-1: taka0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka14801 through high  
Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

### 8.3 Knowledge and Use of Menstrual Regulation

In order to collect the information on the knowledge and use of Menstrual Regulation (MR), women were asked if they have ever heard of or ever use MR or not. Nationally about 72.2% women heard about menstrual regulation, while 7.3% women ever used MR. Women who reside in urban area are more likely to use MR than women who reside in rural areas.

**Table 8.3.1: Percent distribution of women by Knowledge and use of MR by residence**

Knowledge and use of MR	Urban	Rural	Total
Ever heard about MR	76.6	70.3	72.2
Ever undergone for MR	8.2	6.9	7.3

### 8.4 Exposure to Family Planning Messages

In Bangladesh, mass media play an important role in communicating messages about importance of nutrition, health and family planning issues. In present survey, respondents were asked whether they get any messages about family planning on the radio, on television, in a newspaper or magazine, on billboard, poster, or leaflet, or at a community event in the month before the survey.

Table 8.4.1.a presents the percent distribution of respondents who had heard or seen such a message from a media source, by residence. Television is the most popular source for family planning messages in Bangladesh with 40% of respondents having seen a family planning message in this media. About 24.3% of women saw a family planning message either in poster, billboard, or leaflet, and 16.3% of women read about family planning in a newspaper or magazine. In the case of radio broadcasts, 22.0% women have more exposure to family planning messages on radio.

Respondents residing in urban areas are much more likely to have been exposed to family planning messages in any media than their rural counterparts. This is significantly true for messages on television and in print media.

**Table 8.4.1: Percent distribution of women who had heard or saw a family planning message in the media by residence**

Types of media	Urban	Rural	Total
Radio	23.7	21.3	22.0
Television	47.6	36.7	40.0
Magazine/Newspaper	20.4	14.5	16.3
Poster/Leaflet/billboard	28.5	22.5	24.3

## 8.5 Discussion about Family Planning between Spouses

Discussion with spouses facilitates the adoption of family planning method and its sustainability. In the NHDSBD-2011, the information was collected from respondent women about the conversation of family planning method with their husband in the previous three months. It has been observed that about 30.4% women had often discussed with their husband about using contraceptive and 41.1% women discussed once or twice during the last three months.

**Table 8.5.1.a: Percent distribution of women who have discussed family planning with their husband in the past three months by residence**

Number of times discussed	Urban	Rural	Total
Never	28.8	28.3	28.5
Once or twice	39.8	41.7	41.1
Often	31.4	30.0	30.4
Total	100.0	100.0	100.0

Table 8.5.1.b presents information about the women who discuss about family planning with their husband. It has been revealed that percent of women who did not discuss about family planning with their husband is highest (46.3%) in Chittagong division, followed by Rajshahi (34.8%). Women who reside in Dhaka are more likely (total once/twice and often 82%) to discuss it with husband compared with women reside in other division

**Table 8.5.1.b: Percent distribution of women who have discussed family planning with their husband in the past three months by division**

Discussion on family planning	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Never	18.0	46.3	27.3	34.8	32.0	29.3	22.0	20.9	28.5
Once or twice	40.0	42.6	42.0	29.5	51.6	25.3	52.2	58.9	41.1
Often	42.0	11.1	30.7	35.7	16.4	45.4	25.8	20.3	30.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>a</sup>Chittagong includes CHT

<sup>b</sup>CHT includes only Rangamati, Khagrachhari & Bandarban districts



As is depicted in table 8.5.1.c, there is no strong association between husband-wife,s discussions about family planning and household income, expenditure and education level.

**Table 8.5.1.c: Percent distribution of women who have discussed family planning with their husband in the past three months by household income expenditure and education**

Discussion on family planning	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
Never	31.5	25.6	28.4	27.1	29.0	29.5	28.9	29.8	26.4	27.8	29.1	30.3	24.0	28.5	24.6	28.5
Once or twice	35.3	40.6	44.6	42.7	41.4	35.4	39.9	43.5	44.4	42.3	42.5	44.3	40.3	40.4	40.7	41.1
Often	33.2	33.8	27.0	30.2	29.6	35.2	31.2	26.7	29.3	29.9	28.3	25.4	35.7	31.0	34.7	30.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100

**Income group:** Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka 14801 through high  
**Expenditure group:** Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

## Chapter – 9

### Domestic Violence

"Violence against women is a deeply entrenched problem in most societies because attitudes and practices that support violence are institutionalized in custom and law at all levels of society – marriage and the family, home, community and state" (Johnson et al., 2008). Violence against women is amongst the most serious threats to overall development and progress in Bangladesh. In Bangladesh it is common that husbands exert their authority and physically assault wives for even minor mistakes such as an unsatisfactory meal, an untidy room, a conversation with another man, or any act of disagreement or disobedience. The Bangladesh government commits itself to respect, protect and fulfill the rights of women and to work towards the elimination of violence against women through international conventions, covenants and treaties.

Domestic violence, or violence perpetuated in the home or family environment, is a major social problem in Bangladesh. Domestic violence incidences are fairly common and widespread across the country. Women of all economic strata are vulnerable to maltreatment and abuse by husbands, in-laws and other family members. This universal crisis affects women's health as well as affects their social and economic lives.

#### 9.1 Women's attitudes towards wife beating

Wife beating is the most common form of violence against women in Bangladesh. In order to collect information on women's attitudes towards wife beating. When the women were asked whether her husband has any specific justification such as incidence like going out without telling the husband, neglecting the children, arguing with the husband, disobeying elders, and refusal to have sex with the husband that may lead to hit or beat her.

In order to understand the perception of a women's own self-esteem or status, her attitude toward wife beating can be used as a good proxy indicator. When a woman believes that a husband is not justified in hitting or beating his wife for any of the reasons, then it reflects positively about her sense of status and empowerment. On the other hand, when a woman believes that a husband is justified in hitting or beating his wife for all of these reasons, then it indicates that she considers herself to be of low status absolutely and/ or relative to men.

Table 9.1.1.a describes the percentage of women who agree with some specific reasons for wife-beating by residence. Argument with husband (16%), going outside without telling the husband (15%) and neglecting the children (15%) are common reasons for wife-beating among women in Bangladesh. About 13% of women believe that a husband is justified in beating his wife if she disobeys the elders in the family and only 11% of women agree that refusal to have sex with husband is an acceptable reason for wife-beating. Approvals of wife-beating vary according to residence. Urban women are less likely to accept wife beating for any reason than the rural ones.

**Table 9.1.1.a: Attitude towards wife beating: percent distribution of all women who agree that a husband is justified in hitting or beating his wife for specific reasons, by residence**

Reasons	Urban	Rural	Total
<b>Goes out without telling her husband</b>	13.7	16.1	15.4
Neglects the children	13.4	15.2	14.7
<b>Argues with husband</b>	13.7	16.3	15.5
Refuse to have sex with husband	10.2	11.7	11.2
<b>Does not obey elders in the family</b>	11.2	13.8	13.0

Attitudes towards wife-beating vary significantly according to administrative division. Acceptance of wife-beating for any specified reason is lower among women who live in CHT, Sylhet, Dhaka and Chittagong divisions. Percent of women who usually approve of wife-beating for the specific reasons mentioned is highest in Rajshahi, followed by that in Rangpur, Barisal and Khulna.

**Table 9.1.1.b: Attitude towards wife beating: percent distribution of all women who agree that a husband is justified in hitting or beating his wife for specific reasons, by division**

Decision	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Goes out without telling her husband	3.3	6.1	0.7	56.5	12.7	29.8	15.0	1.7	15.4
Neglects the children	2.7	6.2	0.3	51.7	12.7	28.2	17.8	0.3	14.7
Argues with husband	5.2	7.0	0.3	51.7	12.1	29.8	16.7	0.9	15.5
Refuse to have sex with husband	3.5	3.8	0.0	39.8	8.3	25.1	7.7	0.6	11.2
Does not obey elders in the family	4.2	5.3	0.0	40.8	10.7	27.9	12.3	1.4	13.0

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachari and Bandarban districts

Women's acceptance of wife-beating declines as their level of income and expenditure increases. Women in the highest (Rank 5) income-expenditure quintile are less likely to agree with each of the specified reasons for wife-beating. Women's agreement with wife-beating varies little with educational level. Approval of wife-beating is lowest among women who have completed their secondary or higher education.

**Table 9.1.1.c: Attitude towards wife beating: percent distribution of all women who agree that a husband is justified in hitting or beating his wife for specific reasons, by household income-expenditure and education**

Reasons of wife-beating	Income					Expenditure					Education				Total	
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete		Secondary complete and higher
Goes out without telling her husband	27.5	20.4	14.4	10.7	5.7	31.8	17.2	11.9	10.1	5.8	15.7	17.5	18.1	15.5	10.0	15.4
Neglects the children	26.1	19.4	14.3	9.9	5.3	29.8	17.0	11.9	9.3	5.4	14.8	16.9	18.2	14.6	8.8	14.7
Argues with husband	28.0	20.3	16.0	9.8	5.0	31.5	18.9	12.9	9.2	5.0	16.0	19.4	18.3	15.4	8.3	15.5
Refuse to have sex with husband	22.6	15.0	11.1	6.0	2.8	25.4	13.8	8.7	5.4	2.9	11.6	15.4	13.2	10.9	6.0	11.2
Does not obey elders in the family	24.7	17.2	12.8	7.6	4.0	27.5	15.9	10.1	7.3	4.3	13.1	16.4	14.9	13.2	7.5	13.0

**Income group:** Rank-1: taka0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka14801 through high

**Expenditure group:** Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

## 9.2 Spousal Violence

During the survey, respondent women were asked about experiencing spousal violence. Though domestic violence is not uncommon in Bangladesh, the exact prevalence of domestic violence is difficult to assess. It is due to cultural understanding, silence and sensitivity of the issues existing in the society. About 13% women have been beaten by their husband in the previous 12 months and 34% women have experienced violence at sometimes, but not in the past 12 months.

As domestic violence encompasses a range of issues, the magnitudes of the problem are observed in various forms and facts. In order to identify the actual measurement of violence by removing the effect of variations in understanding and interpretation of the elements that constitute violence; in the present survey the respondent women were asked about specific acts of violence, instead of asking about the experience of violence in general.

As per the reports made by the women, it has been observed that slapping (34%) is the most common form of physical violence and the second most common act of violence is being pushed, shaken, or having something thrown at them (17%). About 16% women reported that their husbands have twisted their arms or pulled their hair and 13% women reported that their husbands have punched them with their fist or with something that could hurt them. The other forms of spousal violence are being kicked, dragged, or beaten (10%), attempt to choke them or burn them on some minor purpose (4%) and threat or attack with a weapon by their husbands (3.4%). In Bangladesh, incidences of all forms of violence are higher in rural areas compared to the urban areas.

**Table 9.2.1.a: Percent distribution of different types of spousal violence (physical) by residence**

Spousal violence	Urban	Rural	Total
Push, shake or throw something	15.4	17.3	16.7
<b>Slap</b>	<b>29.8</b>	<b>36.3</b>	<b>34.3</b>
Twist arm/pulling hair	13.5	17.0	15.9
<b>Punch with fist or with something that could hurt</b>	<b>11.3</b>	<b>13.3</b>	<b>12.7</b>
Kick/ drag/ beat	8.6	10.0	9.6
Try to choke/burn on purpose	3.9	3.8	3.8
Threat/ attack with a knife or any other weapon	3.6	3.3	3.4

Incidences of almost all forms of violence are higher in Rajshahi compared to the other divisions. In all administrative units slapping is most common form of physical violence except in Barishal where push, shake or throw something is highest (29%). Severe acts of physical violence (try to choke/burn on purpose, threat/attack with a knife or any other weapon) are relatively common in Khulna division followed by Barisal and Chittagong division.

**Table 9.2.1.b: Percent distribution of different types of spousal violence (physical) by division**

Spousal violence	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Push, shake or throw something	9.8	18.9	7.3	19.1	24.3	12.4	29.2	18.0	16.7
<b>Slap</b>	<b>24.3</b>	<b>32.0</b>	<b>12.7</b>	<b>72.2</b>	<b>34.4</b>	<b>37.5</b>	<b>28.3</b>	<b>37.1</b>	<b>34.3</b>
Twist arm/pulling hair	8.2	19.4	4.3	16.6	23.2	16.2	25.7	15.4	15.9
<b>Punch with fist or with something else</b>	<b>6.9</b>	<b>19.0</b>	<b>4.0</b>	<b>16.3</b>	<b>21.8</b>	<b>6.7</b>	<b>17.0</b>	<b>9.7</b>	<b>12.7</b>
Kick/ drag/ beat	4.5	12.4	1.0	11.5	18.3	5.5	14.7	8.9	9.6
Try to choke/burn on purpose	0.7	4.2	0.7	1.4	10.6	1.7	9.2	3.4	3.8
Threat/ attack with a knife or any other weapon	0.9	4.4	0.3	1.4	9.1	1.7	7.3	2.3	3.4

<sup>a</sup>Chittagong includes CHT

<sup>b</sup>CHT includes only Rangamati, Khagrachhari and Bandarban districts

Patterns of incidences of violence are almost similar in all income-expenditure groups and in all level of education. Slapping is the most common type of physical violence. All types of the violence are less common in women of the highest income expenditure quintile and in women who have secondary or higher education.

**Table 9.2.1.c: Percent distribution of different types of spousal violence (physical) by household income-expenditure and education**

Spousal violence	Income					Expenditure					Education				Total	
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary Complete	Secondary incomplete		Secondary complete and higher
Push, shake or throw something	21.5	22.0	18.6	14.2	8.7	22.5	18.6	20.4	13.5	8.7	19.7	23.7	19.0	14.4	7.3	16.7
Slap	47.1	44.9	37.0	27.3	18.1	50.1	39.6	35.6	28.5	17.7	42.5	40.7	38.1	31.9	12.8	34.4
Twist arm/pulling hair	21.8	22.5	16.1	13.3	7.9	22.9	18.9	16.5	13.3	8.1	20.7	22.6	17.1	13.2	4.9	15.8
Punch with fist or something else	16.3	17.6	12.6	11.6	6.9	16.8	13.7	14.1	12.6	6.3	16.5	16.9	15.0	10.5	3.1	12.6
Kick/ drag/ beat	11.6	12.6	10.1	9.1	5.5	13.2	9.8	10.9	9.1	4.7	11.2	14.5	10.3	8.6	2.7	9.5
Try to choke/burn on purpose	3.7	5.7	4.2	3.9	2.2	6.1	3.9	4.4	3.2	1.4	3.1	4.9	4.7	4.2	1.6	3.7
Threat/ attack with a knife or other weapon	3.8	4.6	3.8	3.6	1.7	4.9	3.5	4.6	3.0	1.1	2.8	4.1	5.1	3.5	1.3	3.4

Income group: Rank-1:taka0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka14801 through high  
Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

### 9.3 Reasons for Spousal Violence

Table 9.3.1.a briefs the responses provided by women who have reported experiencing physical violence in the past 12 months when they were asked about the reasons of violence. About 28% women claimed experience of physical violence without any reason. Around 26% of women noted jealousy and 20% women reported financial crisis as the reason of violence. Other reported reasons for violence include neglecting care of the children (9%), drunkenness and drug addiction of husband (2.4%), food crisis (2.2%) and going out without permission of husband (2.0%).

**Table 9.3.1.a: Percent distribution of reasons for spousal violence by residence**

Reasons of spousal violence	Urban	Rural	Total
Without any reason	23.4	30.38	28.36
Due to financial problem	23.4	19.10	20.35
Due to food crisis	0.43	2.95	2.22
Due to jealousy	28.51	24.31	25.52
Due to refuse of having sex	1.70	1.39	1.48
Due to not observing the elders in the family	2.55	0.87	1.36
Due to ignoring the servant	0.85	2.43	1.97
Going out without asking husband	2.98	1.74	2.10
Mistrusted by husband	0.85	1.22	1.11
Due to mistrusted by wife	0.85	0.87	0.86
For Dowry	1.28	1.91	1.73
For not bringing money from wife's family	1.28	1.91	1.73
Not taking care of the children	8.94	8.85	8.88
As the husband is drunker or takes medicine	2.98	2.08	2.34
Total	100	100	100

Reasons for spousal violence vary due to variation of administrative divisions. Violence without any reason is most common (63.2%) in Barisal followed by that in Rangpur (46%) and Khulna (34%). Financial problem is the major reason for spousal violence in Rajshahi (63.6%) followed by that in Sylhet (29.5%). Food crisis is not common reason for violence, except in Rangpur (6.1%). Thus, jealousy (45.7%) and husband's drunkenness or medicine intake (35%) is found to be highest in CHT as the reason for spousal violence.

**Table 9.3.1.b: Percent distribution of reasons for spousal violence by division**

Reasons of spousal violence	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Without any reason	24.0	12.7	5.0	13.6	34.0	46.1	63.2	1.6	28.4
Due to financial problem	20.7	16.2	15.0	63.6	19.6	17.4	17.1	29.5	20.3
Due to food crisis	0.7	4.0	0.0	0.0	0.5	6.1	1.3	1.6	2.2
Due to jealousy	32.7	45.7	25.0	0.0	22.7	2.6	5.3	37.7	25.5
Due to refuse of having sex	2.0	0.0	5.0	0.0	2.1	0.9	1.3	3.3	1.5
Due to not obeying the elders in the family	0.7	1.2	0.0	4.5	1.0	1.7	2.6	1.6	1.4
Due to ignoring the servant	0.7	5.2	0.0	0.0	0.5	3.5	1.3	0.0	2.0
Going out without asking husband	2.0	1.7	0.0	0.0	1.5	6.1	0.0	1.6	2.1
Mistrusted by husband	0.0	0.0	5.0	4.5	1.0	0.9	1.3	4.9	1.1
Due to mistrusted by wife	0.7	0.6	0.0	0.0	1.5	0.0	0.0	3.3	0.9
For Dowry	2.7	0.0	0.0	0.0	1.5	2.6	2.6	3.3	1.7
For not bringing money from wife's family	2.7	1.7	0.0	0.0	2.6	0.9	0.0	1.6	1.7
Not taking care of the children	10.0	8.7	10.0	4.5	9.8	10.4	3.9	8.2	8.9
As the husband is drunker or takes medicine	0.7	2.3	35.0	9.1	1.5	0.9	0.0	1.6	2.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>a</sup>Chittagong includes CHT

<sup>b</sup>CHT includes only Rangamati, Khagrachari and Bandarban districts

Among the reasons of spousal violence, financial problem is most common in household with lowest income expenditure and in women group with no education. Jealousy, as a reason of violence, is most frequent in highest income expenditure groups. Considering educational level, jealousy is common in those who have completed their secondary or higher education. Other reasons do not vary clearly with household income, expenditure and educational level.

**Table 9.3.1.c: Percent distribution reasons for spousal violence by household income-expenditure and education**

Reasons of spousal violence	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	incomplete	and higher	
Without any reason	28.6	30.4	29.3	25.4	25.9	33.8	32.4	25.5	25.4	18.0	23.8	30.7	32.8	30.5	34.6	28.5
Due to financial problem	32.5	19.6	16.6	11.9	9.9	28.6	18.7	20.7	14.8	12.4	24.4	20.2	16.4	16.8	15.4	20.1
Due to food crisis	2.6	4.8	1.0	1.6	0.0	1.9	2.2	2.1	2.8	2.2	2.6	2.6	2.2	1.4	3.8	2.3
Due to jealousy	16.5	24.4	28.3	28.6	42.0	13.8	24.2	27.7	33.8	38.2	27.4	22.8	23.1	25.5	30.8	25.6
Due to refuse of having sex	1.3	1.2	2.4	0.8	1.2	1.9	1.6	1.1	1.4	1.1	2.3	0.9	1.5	0.9	0.0	1.5
Due to disobeying the elders	1.3	0.0	0.0	5.6	1.2	1.0	1.1	0.5	3.5	1.1	1.3	1.8	1.5	1.4	0.0	1.4
Due to ignoring the servant	2.2	2.4	1.0	2.4	2.5	0.0	3.3	2.1	1.4	4.5	1.3	2.6	3.0	2.3	0.0	2.0
Going out without permission	0.9	3.6	1.5	3.2	2.5	2.9	2.2	1.6	0.7	3.4	1.7	0.9	3.0	2.7	3.8	2.1
Mistrusted by husband	0.9	1.2	1.5	1.6	0.0	1.0	0.5	1.6	0.7	2.2	0.3	0.9	0.0	3.2	0.0	1.1
Due to mistrusted by wife	0.4	0.6	1.5	1.6	0.0	0.5	0.5	2.1	0.7	0.0	0.7	0.9	0.0	0.9	3.8	0.8
For Dowry	2.2	0.6	2.0	1.6	2.5	1.9	1.1	2.7	0.7	2.2	1.3	3.5	2.2	0.9	0.0	1.6
For not bringing money from wife's family	2.6	0.0	2.0	1.6	2.5	1.9	1.1	1.1	2.8	2.2	1.7	2.6	1.5	1.8	0.0	1.8
neglecting care of the children	6.9	9.5	10.2	11.1	6.2	7.6	9.3	9.6	7.7	11.2	7.6	9.6	9.7	10.5	7.7	9.0
Husband's drunkenness or Medicine intake	1.3	1.8	2.9	3.2	3.7	3.3	1.6	1.6	3.5	1.1	3.6	0.0	3.0	1.4	0.0	2.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

**Income group:** Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka 14801 through high  
**Expenditure group:** Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

#### 9.4 Discussing experience of domestic violence with others and assistance received

Among the women who experienced any form of physical violence, only 14% women discussed it with others indicating that most women (85.6%) do not share it with others and 17% women get assistance.

**Table 9.4.1.a: Percent distribution of women discussing experience of physical violence with others and get assistance**

	Urban	Rural	Total
<i>Discussed experience with</i>			
Friends	1.3	1.0	1.1
Parents	4.3	4.0	4.1
Uncle and aunt	0.0	0.2	0.1
Children	0.0	0.2	0.1
Mother in law	0.9	0.7	0.7
Father in law	0.0	0.7	0.5
Both father and mother in laws	0.9	2.1	1.7
Other relatives	1.7	1.2	1.4
Neighbors	1.3	1.2	1.2
No one	85.5	85.6	85.6
Chairman and member	1.7	1.7	1.7
Others	2.6	1.4	1.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<i>Type of help and cooperation received</i>			
Neighbor take away the husband	62.5	53.5	56.0
Advised to report to the Police	5.0	8.9	7.8
Advised to file a case against husband	12.5	8.9	9.9
Others	20.0	28.7	26.2
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

It is interesting that the percent of women who received assistance (17%) is higher than the percent who shared the incidence of violence (14%). About 56% women received help from neighbor (took away the husband). It means that the neighbor may have awareness of the violence without the women directly telling them or asking for any help. The most common person to whom women shared the experience is their own parents (4%).

Among the women of different administrative divisions, women residing in Rajshahi are more likely to discuss the experience with parents (13.6%), neighbors (22.7%) and other relatives (9.1%) compared with women those reside in other divisions.

**Table 9.4.1.b: Percent distribution of women discussing experience of physical violence with others and get assistance by division**

Discussing experience of and getting assistance for physical violence	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
<i>Discussed experience with</i>									
Friends	2.0	0.6	0.0	0.0	1.5	0.0	2.6	0.0	1.1
Parents	2.7	0.0	0.0	13.6	4.6	10.4	3.9	3.3	4.1
Uncle and aunt	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Children	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Mother in law	1.3	0.0	0.0	0.0	1.5	0.0	0.0	1.6	0.7
Father in law	0.7	0.0	0.0	0.0	0.0	1.7	0.0	1.6	0.5
Both father and mother in laws	4.0	0.6	0.0	4.5	1.0	2.6	0.0	1.6	1.7
Other relatives	2.0	0.0	5.0	9.1	0.5	1.7	0.0	3.3	1.4
Neighbors	0.0	0.6	5.0	22.7	0.0	0.9	1.3	1.6	1.2
No one	82.7	96.0	90.0	50.0	86.1	78.3	85.5	86.9	85.6
Chairman and member	2.0	2.3	0.0	0.0	0.5	1.7	5.3	0.0	1.7
Others	1.3	0.0	0.0	0.0	4.1	2.6	1.3	0.0	1.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<i>Type of help and cooperation received</i>									
Neighbor take away the husband	78.6	12.5	100.0	66.7	50.0	20.8	50.0	80.0	56.0
Advised to report to the Police	0.0	12.5	0.0	25.0	6.3	8.3	25.0	0.0	7.8
Advised to file a case against husband	7.1	0.0	0.0	0.0	15.6	12.5	8.3	15.0	9.9
Others	14.3	75.0	0.0	8.3	28.1	58.3	16.7	5.0	26.2
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

<sup>a</sup>Chittagong includes CHT<sup>b</sup>CHT includes only Rangamati, Khagrachari and Bandarban districts



Surprisingly in CHT, only 10% women shared the incidence of violence with other relatives and neighbors; but all the victims received assistance from their neighbors. Among the assistance that they received, advice to report to the police is common in Rajshahi (25%) and Barisal (25%).

As shown in table 9.4.1.c, the incidence of discussing the experience of physical violence with other decreases with the increase of household income expenditure and respondent's educational level though there are few exceptions.

**Table 9.4.1.c: Percent distribution of women discussing experience of physical violence with others and get assistance by household income expenditure and education**

Women discussing experience of and getting assistance for physical violence	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
<i>Discussed experience with</i>																
Friends	0.0	1.2	2.4	0.8	1.2	1.0	1.6	1.6	0.7	0.0	0.7	1.8	1.5	1.4	0.0	1.1
Parents	6.1	4.2	3.9	3.2	0.0	8.1	3.8	2.7	2.1	1.1	4.0	5.3	5.2	2.7	0.0	4.1
Uncle and aunt	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.7	0.0	0.3	0.0	0.0	0.0	0.0	0.1
Children	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	1.1	0.0	0.9	0.0	0.0	0.0	0.1
Mother in law	1.7	0.0	0.5	0.8	0.0	1.0	0.5	0.5	0.7	1.1	0.7	0.0	0.7	1.4	0.0	0.7
Father in law	0.9	0.0	0.5	0.0	1.2	0.0	1.1	0.5	0.7	0.0	0.7	0.0	0.0	0.9	0.0	0.5
Both father and mother in laws	3.5	3.6	0.0	0.0	0.0	3.3	1.6	2.1	0.0	0.0	3.0	0.9	0.7	1.4	0.0	1.7
Other relatives	2.2	0.6	1.5	0.8	1.2	1.4	1.6	0.0	1.4	3.4	0.7	0.9	1.5	2.3	3.8	1.4
Neighbors	3.0	0.6	0.0	1.6	0.0	3.3	0.5	0.5	0.7	0.0	2.6	0.9	0.7	0.0	0.0	1.2
No one	79.2	87.5	87.3	88.9	90.1	78.1	85.7	89.4	90.1	87.6	83.5	84.2	87.3	87.3	96.2	85.6
Chairman and member	1.7	1.8	2.4	0.8	1.2	1.4	1.6	1.1	2.1	3.4	2.6	2.6	0.7	0.9	0.0	1.7
Others	1.7	0.6	1.5	3.2	2.5	2.4	1.6	1.6	0.7	2.2	1.3	2.6	1.5	1.8	0.0	1.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Type of help and cooperation received</i>																
Neighbor take away the husband	54.0	60.7	54.5	47.6	77.8	51.0	50.0	72.4	59.1	47.1	62.1	50.0	59.1	50.0	50.0	56.0
Advised to report to the Police	10.0	10.7	3.0	9.5	0.0	12.2	8.3	3.4	9.1	0.0	6.9	12.5	13.6	5.0	0.0	7.8
Advised to file a case against husband	6.0	7.1	18.2	14.3	0.0	10.2	12.5	6.9	13.6	5.9	8.6	12.5	13.6	5.0	0.0	9.9
Others	30.0	21.4	24.2	28.6	22.2	26.5	29.2	17.2	18.2	47.1	22.4	25.0	13.6	40.0	50.0	26.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

**Income group:** Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka 14801 through high

**Expenditure group:** Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

Types of help and assistance received by the women do not vary significantly due to variation of these background characteristics. The incidence of taking away the husband by the neighbors is the most common form of assistance received in almost all income-expenditure quintile and education groups.

## Chapter – 10

### Women Empowerment

Empowerment is a complex concept. It may vary in cultures, persons, sexes, occupations and position in life. It may also differ with time and geographic location. Furthermore, men and women may have a different view on empowerment in general and on women's empowerment in particular.

Women's empowerment is even more complicated and difficult to define and conceptualize than general empowerment. Women empowerment may specifically refer to economic uplift but also to increase wellbeing and transformation of power relations. It depends on social status and view. Empowerment may itself reflect itself women participation in social and political activities, thus ideally empowering other women as well (Majoor et al, 2009).

The economic definition of empowerment includes financial autonomy, access to opportunities and resources and financial decision-making, while the psychological definition includes issues like self-esteem, self-worth, fulfillment and power to control and judge. Socio-cultural and legal issues, empowerment in relations like decision-making in the household and political empowerment are the other important components of women empowerment.

Even though the overall situation of women in Bangladesh has consistently improved over the last two decades, their status still remains in inferior position. There have been rapid gain in a number of social and economic domains; yet by most objective standards, the current condition and status of women and girls within Bangladesh society remain low.

#### 10.1 Employment status and form of earnings

As women constitute approximately 50% of total population of Bangladesh, sustainable development is not possible without incorporating them in mainstream of national development activities. Economic empowerment of women upholds when they involve in any income generating activities other than household works. Respondent women were asked about their employment during the 12 months preceding the survey. Only 10% women had been employed in the previous 12 months and most of them worked in agriculture sector (about 27%) or were service holders (19%). Among the women who were reported to being employed in the last 12 months, 80% women had been working for whole the year and about 14% worked seasonally.

Table 10.1.1.a shows the percent distribution of employed women by the type of earnings they received (cash, in-kind, both and not paid). It has been observed that 3.4% of all women who were being employed did not receive any kind of payment, and the situation is severe in rural areas as compared to urban areas (4.6% versus 1.0%). Among employed women, 85% women earn only cash, 9% receive both cash and in-kind and 2.4% women receive payment only in-kind for their work. Women in urban areas are more likely to be employed for cash only (91%) than the women in rural areas (82%).

**Table 10.1.1.a: Percent distribution of type of earning of women who were employed in the last 12 months by residence**

Type of women earning	Urban	Rural	Total
Cash only	91.4	82.2	85.3
Cash and in-kind	6.2	10.2	8.9
In-kind	1.4	2.9	2.4
Don't get any payment	1.0	4.6	3.4
Total	100.0	100.0	100.0

At divisional level, employed women of all divisions receive cash as a major form of earning (about 81% to 94%), but in case of Sylhet (68.8%) and Khulna (73.8%) the percentage is slightly lower. In CHT hill tracts (10.2%) and Sylhet (6.3%), percentage of women who are employed but did not receive any kind of payment is slightly higher compared to other divisions.

**Table 10.1.1.b: Percent distribution of type of earnings of women who were employed in the last 12 months by division**

Type of women earning	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Cash only	81.6	85.9	88.1	84.6	73.8	94.1	90.0	68.8	85.3
Cash and in-kind	13.2	11.8	1.7	12.8	16.4	1.7	6.7	25.0	8.9
In-kind	3.9	1.2	0.0	0.0	6.6	2.5	3.3	0.0	2.4
Don't get any payment	1.3	1.2	10.2	2.6	3.3	1.7	0.0	6.3	3.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari and Bandarban districts

Table 10.1.1.c shows the percent distribution of employed women by type of earnings they received (cash, in-kind, both and not paid) according to the background characteristics- household income, expenditure and education. The result shows that women in the highest rank (Rank 5) both in the forms of income and expenditure, and women who have completed a secondary or higher level of education are more likely than their counterparts to receive cash only. The percentage of women being employed but did not receive any kind of payment is decreased with the increase of educational level (5.7% to 0.0%).

**Table 10.1.1.c: Percent distribution of type of earnings of women who were employed in the last 12 months by household income, expenditure and education**

Type of women earning	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
Cash only	82.9	85.2	82.0	83.5	91.4	80.9	83.2	87.3	86.4	88.2	77.2	80.8	88.4	84.2	98.0	85.5
Cash and in-kind	12.1	9.1	8.3	8.2	6.8	13.9	12.6	7.3	4.5	6.9	13.0	13.5	8.7	10.3	0.7	8.9
In-kind	2.1	1.1	5.3	4.1	0.0	4.3	2.5	0.9	3.0	1.4	4.1	1.9	0.0	2.7	1.4	2.4
Don't get any payment	2.9	4.5	4.5	4.1	1.9	0.9	1.7	4.5	6.1	3.5	5.7	3.8	2.9	2.7	0.0	3.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Income group: Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka 14801 through high

Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

## 10.2 Women's Control over Their Own Earnings

Having access to income does not indicate that women are empowerment. Women need to have control over their earnings in order to be regarded as empowered. In order to assess control over earnings, the survey asked women who were employed in the past 12 months about who are the main decision maker with regard to use of their earnings.

As depicted in table 10.2.1.a, about 81% women who were employed reported that they decide jointly with their husband about how their earnings are to be used, while only 4.4% said that they decide alone and about 8% of women reported that their husband alone decides how to use their earnings. There is no difference in the proportion of women in both rural and urban areas regarding using of earnings by her or jointly with husband or by husband only.

**Table 10.2.1.a: Percent distribution of women who were employed in the past 12 months by control over their earnings and residence**

	Urban	Rural	Total
Women herself only	3.8	4.6	4.4
Jointly with husband	81.3	81.0	81.1
Husband only	8.1	7.9	7.9
Other members	1.0	1.0	1.0
Women and other person	5.7	5.6	5.7
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

There is some variation among the divisions regarding who makes decisions about how women's earnings are being used. The percentage of employed women who make decision only by herself about spending their own earning is highest in Rangpur (5.9%) followed by Rajshahi and CHT (5.1%).

**Table 10.2.1.b: Percent distribution of women who were employed in the past 12 months by control over their earnings and division**

Women employment and earning control	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Women herself only	3.3	4.7	5.1	5.1	4.9	5.9	0.0	0.0	4.4
Jointly with husband	82.2	80.0	84.7	82.1	73.8	79.8	80.0	87.5	81.1
Husband only	5.9	7.1	4.2	10.3	14.8	10.9	10.0	0.0	7.9
Other members	0.7	3.5	0.0	0.0	3.3	0.0	0.0	0.0	1.0
Women and other person	7.9	4.7	5.9	2.6	3.3	3.4	10.0	12.5	5.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachari and Bandarban districts

In Sylhet and Barisal no women makes decision only by herself about spending their own earning. Joint decision making about how the wife's earnings should be used also varies among the divisions, ranging from 73.8% in Khulna to 87.5% in Sylhet.

Table 10.2.1.c shows that there is no consistency in the control over women's own earnings with respect to the household income, expenditure and education.

**Table 10.2.1.c: Percent distribution of woman who were employed in the past 12 months by control over their earnings**

Women employment and earning control	Income					Expenditure					Education				Total	
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete		Secondary complete and higher
Women herself only	9.3	3.4	3.0	2.1	3.1	9.6	1.7	2.7	5.3	2.8	5.2	7.7	1.4	6.2	0.7	4.4
Jointly with husband	71.4	86.4	87.2	79.4	82.7	66.1	83.2	88.2	84.1	83.3	78.8	80.8	81.2	80.8	87.8	81.1
Husband only	9.3	8.0	4.5	9.3	8.6	10.4	10.1	4.5	6.1	8.3	9.8	7.7	14.5	8.2	2.7	7.9
Other members	1.4	0.0	0.8	1.0	1.2	1.7	0.8	0.0	1.5	0.7	1.0	0.0	0.0	0.7	1.4	1.0
Women and other person	8.6	2.3	4.5	8.2	4.3	12.2	4.2	4.5	3.0	4.9	5.2	3.8	2.9	4.1	7.5	5.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Income group: Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka14801 through high  
 Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

### 10.3 Freedom of Movement

One of the fundamental components of women's empowerment is freedom of movement outside the home. In order to analysis the freedom of movement of the empowered women, NHDSBD-2011 enquired whether the women can move alone or with their young children to a health center or hospital to seek care for themselves or their children. The result shows that about 70% women could go alone or with children to the health center and hospital. The proportion of women restricted from going to the hospital or health center alone or accompanied only by their children is higher in rural areas (30%) compared with the urban areas (27.8%). Only 23% women usually used go to health center or hospital alone. The rest of the women usually go with husband (60%) or with other family members (10%) or with younger children (6%).

**Table 10.3.1.a: Percent distribution of women's freedom of movement by residence.**

	Urban	Rural	Total
<b>Can go to healthcares alone or with the children</b>			
Can	72.2	69.6	70.4
Can not	27.8	30.4	29.6
Total	100.0	100.0	100.0
<b>Usually go to health center or hospitals</b>			
Women herself alone	23.3	23.0	23.1
With husband	57.3	61.0	59.9
With other members	10.5	10.0	10.2
With younger children	7.8	5.6	6.3
Others	1.1	0.3	0.5
Total	100.0	100.0	100.0

Table 10.3.1.b shows that among administrative divisions, women in Rajshahi (88%) are more likely to be among those who can go to a health facility alone or accompanied by their young children than women of other divisions. But the percentage of women who usually go to health centre or hospitals by herself is high in CHT (34.3%).

**Table 10.3.1.b: Percent distribution of women's freedom of movement by division**

	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
<b>Can go to healthcares alone or with the children</b>									
Can	72.4	68.4	75.0	88.0	67.0	67.4	56.3	69.4	70.4
Can not	27.6	31.6	25.0	12.0	33.0	32.6	43.7	30.6	29.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Usually go to health center or hospitals</b>									
Women herself alone	19.2	20.2	34.3	27.2	17.8	30.1	19.2	32.9	23.1
With husband	59.7	46.6	56.3	68.9	62.8	64.0	71.2	43.7	59.9
With other members	12.3	20.3	3.3	2.2	12.9	3.6	5.7	13.1	10.2
With younger children	8.4	11.7	5.3	1.7	6.4	1.2	3.5	10.0	6.3
Others	0.3	1.2	0.7	0.0	0.1	1.2	0.5	0.3	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachari and Bandarban districts

Women who have completed a secondary or higher level of education and women who were in the highest income expenditure group are more likely than their counterparts to go to a health facility either alone or with their children.

**Table 10.3.1.c: Percent distribution of women's freedom of movement according to household income, expenditure and education**

Women freedom for movement	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
<b>Can go to healthcares alone or with the children</b>																
Can	72.5	71.9	65.5	69.0	73.7	70.8	68.7	66.9	70.9	74.5	68.9	63.6	73.3	69.4	78.0	70.4
Can not	27.5	28.1	34.5	31.0	26.3	29.2	31.3	33.1	29.1	25.5	31.1	36.4	26.7	30.6	22.0	29.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Usually go to health center or hospitals</b>																
Women herself alone	25.0	22.2	21.6	22.5	24.0	24.4	19.5	23.1	23.6	24.6	22.3	18.4	23.8	22.5	27.5	23.1
With husband	60.8	64.8	65.5	57.3	51.7	65.0	66.0	59.4	57.9	51.2	59.9	67.1	58.7	59.4	58.7	59.9
With other members	6.8	5.9	7.2	12.0	18.1	5.7	6.5	9.5	10.8	18.4	9.5	8.6	9.4	11.9	9.3	10.2
With younger children	6.5	6.7	5.6	7.4	5.8	4.1	7.6	7.9	6.9	5.0	7.8	5.6	7.4	5.8	3.9	6.3
Others	0.9	0.4	0.1	0.9	0.5	0.6	0.4	0.1	0.8	0.8	0.6	0.3	0.7	0.4	0.7	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Income group: Rank-1:taka0-5500 , Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka14801 through high

Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

#### 10.4 Women's Participation in Household Decision Making

Economic empowerment alone does not give insight into the social context and the decision making process. Information about women's participation in household decision provides insight into women's control over their daily life activities. It is an important parameter/measure of women's autonomy and status. To assess the women decision making autonomy, the present survey collect information on women's participation in taking decisions regarding her own health care, her child's health care, major household purchases and procurement of daily household needs.

Table 10.4.1.a shows the percent distribution of women's participation in household decision making activities by residence. Women are considered to participate in decision making if they make decisions alone or jointly with their husband.

**Table 10.4.1.a: Percent distribution of women by women's participation in decision making by residence**

Decision	Urban	Rural	Total
<b>Women's own health care</b>			
Women herself	10.2	8.7	9.2
Jointly with husband	70.6	72.8	72.1
Husband only	15.9	15.7	15.8
Other members	1.6	1.6	1.6
Women with other person	1.7	1.2	1.4
Total	100.0	100.0	100.0
<b>Major household purchase</b>			
Women herself	4.3	2.3	2.9
Jointly with husband	62.5	64.9	64.2
Husband only	26.8	27.4	27.2
Other members	2.2	2.8	2.6
Women with other person	4.3	2.7	3.2
Total	100.0	100.0	100.0
<b>Purchases of daily household needs</b>			
Women herself	1.4	0.8	1.0
Jointly with husband	60.7	61.3	61.1
Husband only	29.6	30.5	30.2
Other members	4.0	4.0	4.0
Women with other person	4.3	3.4	3.6
Total	100.0	100.0	100.0
<b>Child's health care</b>			
Women herself	17.9	16.5	16.9
Jointly with husband	65.4	68.8	67.8
Husband only	12.5	11.3	11.7
Other members	2.3	1.9	2.0
Women with other person	1.8	1.5	1.6
Total	100.0	100.0	100.0

The proportion of women playing role in decision making in household varies with the type of decision. Only 9% women take decision independently about their own health care and 72% do it jointly with their husband. As regards child's health care, about 17% women can take decision independently and 68% do it jointly with their husband. Women with their husbands are most likely to make joint decisions regarding major household purchases (64%) and purchases of daily household needs (61%).

There is significant difference between the proportion of women of Chittagong and women of other divisions with respect to their role played in decision making in health and household purchases. This situation is similar irrespective of types of decision. In Chittagong, the percentage of women taking decision alone as against husband taking decision alone are 26.8% and 36.7% respectively in women's own health, 7.3% and 54.7% respectively in major household purchase, 1.3% and 51.9% respectively in purchase of daily household needs and 48.2% and 14.8% respectively in child's health. This is highest percentage in almost all categories among the divisions.

**Table 10.4.1.b: Percent distribution of women by women's participation in decision making by division**

Decision	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
<b>Women's own health care</b>									
Women herself	3.8	26.8	12.0	4.5	10.4	5.6	5.2	8.3	9.2
Jointly with husband	83.0	31.2	83.7	87.1	72.6	81.9	64.3	74.9	72.1
Husband only	9.6	36.7	2.3	7.5	14.8	10.5	27.0	14.9	15.8
Other members	1.5	3.8	0.3	0.5	1.4	1.5	1.2	0.3	1.6
Women with other person	2.1	1.6	1.7	0.5	0.8	0.4	2.3	1.7	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Major household purchase</b>									
Women herself	1.5	7.3	4.3	1.4	3.1	1.7	1.5	4.3	2.9
Jointly with husband	80.6	23.2	80.3	69.8	51.4	79.7	59.7	67.1	64.2
Husband only	13.5	54.7	9.7	27.1	39.7	15.8	34.8	21.7	27.2
Other members	1.5	7.4	1.7	0.6	3.3	2.1	1.3	1.1	2.6
Women with other person	2.9	7.3	4.0	1.1	2.4	0.8	2.7	5.7	3.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Purchases of daily household needs</b>									
Women herself	1.3	1.3	0.3	0.8	0.7	1.0	0.7	1.1	1.0
Jointly with husband	77.7	27.1	77.7	68.8	46.3	72.8	49.0	69.7	61.1
Husband only	15.7	51.9	15.0	27.5	44.1	23.1	42.5	22.9	30.2
Other members	1.8	11.3	2.3	1.5	5.7	2.6	3.7	1.7	4.0
Women with other person	3.4	8.3	4.7	1.4	3.2	0.5	4.2	4.6	3.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Child's health care</b>									
Women herself	17.3	48.2	9.7	9.1	13.9	7.5	6.5	6.3	16.9
Jointly with husband	76.1	29.9	85.7	83.5	62.4	78.7	63.5	73.4	67.8
Husband only	3.8	14.8	2.7	5.5	20.1	10.8	25.5	16.9	11.7
Other members	0.7	4.7	0.0	0.9	2.6	2.5	2.7	0.9	2.0
Women with other person	2.1	2.4	2.0	0.9	1.0	0.5	1.8	2.6	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari and Bandarban districts



Women participation in all four decisions varies with their background characteristics. The percent of women who make decision only by herself about their own health increases with the increase of income expenditure and level of education.

**Table 10.4.1.c: Percent distribution of women's participation in decision making, by income, expenditure and education level**

Decision	Income					Expenditure					Education				Total	
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete		Secondary complete and higher
<b>Women's own health care</b>																
Women herself	9.9	6.9	6.5	10.2	12.2	9.8	6.8	8.5	8.7	12.0	8.7	7.2	7.2	10.5	9.6	9.2
Jointly with husband	70.3	73.6	75.4	70.2	70.8	73.8	75.2	70.3	72.2	69.2	72.2	68.2	75.0	70.6	78.7	72.1
Husband only	18.4	18.3	16.0	15.5	11.5	15.0	16.4	18.5	15.8	13.0	17.0	21.9	14.9	15.4	9.5	15.8
Other members	0.6	0.8	1.4	1.9	2.9	0.7	0.8	2.0	1.7	2.6	0.9	1.4	1.5	2.2	1.2	1.6
Women with other person	0.8	0.4	0.7	2.2	2.7	0.6	0.8	0.8	1.5	3.2	1.2	1.3	1.4	1.4	1.1	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Major household purchase</b>																
Women herself	4.4	2.9	1.3	2.5	3.5	3.8	2.4	2.7	2.3	3.1	2.7	2.2	2.1	3.0	3.9	2.9
Jointly with husband	63.4	65.9	65.4	63.7	62.7	65.1	65.8	62.9	65.3	61.7	64.4	55.6	70.1	61.8	71.5	64.2
Husband only	30.7	29.4	30.3	26.3	20.1	29.3	29.7	29.9	26.9	20.3	27.4	38.8	23.7	28.3	18.9	27.2
Other members	0.7	1.1	1.7	3.2	5.8	0.8	1.2	2.4	2.9	5.6	1.9	1.4	2.4	3.3	2.9	2.6
Women with other person	0.9	0.7	1.3	4.4	7.9	1.0	0.9	2.2	2.5	9.3	3.6	1.9	1.8	3.6	2.8	3.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Purchases of daily household needs</b>																
Women herself	1.9	0.8	0.8	0.9	0.6	2.1	0.9	1.0	0.6	0.4	1.1	0.8	0.6	0.9	1.1	1.0
Jointly with husband	63.1	64.5	60.3	58.7	59.7	63.7	63.2	57.7	61.5	59.5	62.1	51.7	68.7	58.3	66.8	61.1
Husband only	31.1	31.3	35.2	30.2	23.2	31.0	32.1	34.9	30.0	23.0	30.5	42.1	24.3	31.5	24.1	30.2
Other members	1.8	2.6	2.4	4.7	8.3	2.0	2.7	3.7	4.6	7.1	2.7	2.4	4.1	5.0	4.7	4.0
Women with other person	2.0	0.8	1.3	5.5	8.2	1.2	1.1	2.7	3.3	10.0	3.5	3.0	2.3	4.4	3.3	3.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Child's health care</b>																
Women herself	17.7	16.9	15.7	16.1	18.3	14.6	17.8	18.9	15.9	17.4	16.7	21.6	12.5	18.5	14.4	16.9
Jointly with husband	68.5	68.2	69.9	66.4	65.5	71.3	69.7	64.8	68.0	65.3	68.8	63.3	71.7	66.0	72.0	67.8
Husband only	11.8	12.9	12.1	12.7	9.4	12.3	10.5	13.3	12.8	9.4	11.0	12.9	12.0	11.7	10.3	11.7
Other members	1.1	1.4	1.3	2.0	3.9	1.0	1.0	2.0	1.7	4.2	1.8	1.4	2.3	2.2	1.9	2.0
Women with other person	0.9	0.6	0.9	2.8	2.8	0.8	1.1	0.9	1.6	3.8	1.7	0.8	1.5	1.7	1.5	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Income group: Rank-1:taka0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka14801 through high  
 Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

## AIDS/STDs/STIs/TB/NCDs Related Knowledge, Attitude and Prevalence

HIV/AIDS is a manmade global societal and health problem. It is fueled by poverty, the inequality of certain sectors of society and the presence of Sexually Transmitted Infections (STIs). As a result the socio-cultural and economic as well as the health determinants for transmission of HIV/AIDS/STIs should be addressed.

Although Bangladesh reported its first HIV case in 1989, it is still confined to populations with high-risk behaviors. According to UNAIDS, the overall HIV prevalence in Bangladesh is 0.01%. Despite the low HIV prevalence, Bangladesh is considered to be at high risk for a wider epidemic due to several vulnerability factors such as IDUs, risky sexual activity, high prevalence of STIs, migration across borders from neighboring high HIV-burden countries; poverty; low awareness, gender in equity and HIV stigma.

### 11.1 Knowledge of HIV/AIDS prevention, transmission and misconceptions

The most effective preventive method is to increase current levels of knowledge and appropriate attitudes regarding HIV/AIDS prevention and transmission in the mass population, especially among young and reproductive population.

To address HIV/AIDS challenge, respondents were asked about their knowledge on the modes of transmission, prevention and misconceptions. It has been observed that around half of the respondent women are aware of each of the three major modes of transmissions to reduce the risk of getting infection with HIV virus such as using condoms (49%), limiting sex to uninfected partner who has no other partners (54%) and being refrained from sexual intercourse (50%) with others. Overall, urban women have greater knowledge on HIV prevention methods than the rural women.

**Table 11.1.1.a: Knowledge about HIV/AIDS prevention methods: percent of women who said that people can reduce the risk of getting the HIV/AIDS by following ways (by residence)**

Prevention method of HIV transmission	Urban	Rural	Total
Condom use	55.6	46.1	49.0
Limiting sex to uninfected partner s	61.8	51.1	54.4
Being refrain from sexual intercourse	57.1	47.3	50.3

As regards the knowledge about HIV/AIDS prevention methods (three methods together i. e. using condoms, limiting sex to uninfected partner who has no other partners and being refrained from sexual intercourse with others), percent of women in Dhaka is highest (63.4%, 66.2%, 64.3%) followed by percent of women in Barisal and percent of women in Khulna . The knowledge in all three aspects of HIV/AIDS prevention is lowest in the women of Rajshahi (36.9%, 37.5% and 35.4%) which is followed by women of Rangpur and women of Sylhet.

**Table 11.1.1.b: Knowledge about HIV/AIDS prevention methods: percent of women who said that people can reduce the risk of getting the HIV/AIDS by following ways ( by division)**

Prevention method of HIV transmission	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Condom use	63.4	31.8	52.3	36.9	53.6	40.2	60.3	37.1	49.0
Limiting sex to uninfected partners	66.2	52.7	53.7	37.5	60.0	45.3	56.0	41.7	54.4
Being refrain from sexual intercourse	64.3	49.4	42.7	35.4	56.7	32.6	56.3	40.0	50.3

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari and Bandarban districts

Table 11.1.1.c provides knowledge about different HIV prevention methods among women by income expenditure and educational level. Household income-expenditure and level of education are strongly associated with knowledge of HIV prevention methods. Women belonging to households in the higher income, expenditure (Rank-5) are more likely to be aware of ways to prevent the HIV/AIDS than women in the lower ranks. Similarly women who have completed secondary or higher education are more knowledgeable about different HIV prevention methods (condom use 85.2%, limiting sex to uninfected partners 86.9%, being refrained from sexual intercourse 79.7%) compared with women with no education (condom use 28.4%, limiting sex to uninfected partners 32.3%, being refrained from sexual intercourse 28.9%).

**Table 11.1.1.c: Knowledge about HIV/AIDS prevention methods: percent of women who said that people can reduce the risk of getting the HIV/AIDS by following ways ( by household income, expenditure and education)**

Prevention method of HIV transmission	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
Condom use	33.9	40.1	44.4	58.2	66.4	36.5	44.3	45.3	54.8	64.1	28.4	35.0	47.0	57.7	85.2	49.0
Limiting sex to uninfected partners	38.7	45.4	49.9	62.6	72.9	39.6	49.5	49.3	62.1	71.3	32.3	41.2	54.5	64.2	86.9	54.3
Being refrain from sexual intercourse	35.6	42.1	44.3	59.8	67.9	35.9	45.9	47.2	56.5	65.7	28.9	37.5	49.6	60.8	79.7	50.2

Income group: Rank-1: taka0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka14801 through high  
Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5899, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

Among the non-sexual modes of HIV transmission, the most common ways are multiple uses of non-sterilized syringe and unsafe blood transfusion. To assess the knowledge about transmission of HIV, the respondents were asked whether it is possible to get the HIV virus by using unsterilized needle or syringe and unsafe blood transfusion. It has been revealed that 54% women know that the HIV can be transmitted by unsterile needle or syringe use and 55% women know it can be transmitted via unsafe blood transfusion. The level of knowledge on HIV transmission is higher in urban women as compared to the rural ones.

**Table 11.1.2.a: Knowledge of HIV transmission (non-sexual route): % of women who said that people can get the HIV/AIDS by following two ways (by residence)**

Knowledge on HIV Transmission	Urban	Rural	Total
Use of unsterilized syringe	61.8	50.9	54.2
Unsafe blood transfusion	62.9	51.6	55.1

Women living in Dhaka are more knowledgeable about the non-sexual modes of HIV transmission (use of non-sterilized syringe 63.8% and unsafe blood transfusion 64.8%) than women living in other divisions. Knowledge of HIV prevention methods is lowest among women of Rajshahi division.

**Table 11.1.2.b: Knowledge of HIV Transmission (non-sexual route): % of women who said that people can get the HIV/AIDS by following two ways (by division)**

Knowledge on HIV Transmission	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Use of unsterilized syringe	63.8	52.1	58.0	39.1	57.7	44.3	60.0	47.1	54.2
Unsafe blood transfusion	64.8	54.2	58.0	38.5	58.6	45.5	60.5	46.3	55.1

<sup>a</sup> Chittagong includes CHT<sup>b</sup> CHT includes only Rangamati, Khagrachhari and Bandarban districts

Table 11.1.2.c reveals considerable variation in respondents' knowledge of HIV transmission according to background characteristics. Knowledge is higher among women who belong to the highest income expenditure rank and women who have completed secondary or higher education.

**Table 11.1.2.c: Knowledge of HIV Transmission (non-sexual route): % of women who said that people can get the HIV/AIDS by following two ways (by household income, expenditure and education)**

Knowledge on HIV Transmission	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
Use of unsterilized syringe	38.3	45.6	48.6	62.8	73.8	39.0	48.5	49.8	61.1	72.8	32.4	39.6	51.9	64.3	90.3	54.2
Unsafe blood transfusion	39.0	46.5	48.7	64.2	75.0	40.3	48.6	50.5	62.0	73.9	33.1	40.1	52.3	65.8	90.4	55.1

Income group: Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka 14801 through high

Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

As the prevalence of HIV/AIDS is low in Bangladesh, people have various misconceptions about the transmission, prevention and overall management of this disease. The most common conceptions about AIDS in Bangladesh include- good looking healthy person cannot have HIV/AIDS or HIV-infected people always appear to be sick and belief of HIV transmission through mosquito bite or by sharing food with HIV/AIDS patients. Only 39% women know that the AIDS virus cannot be transmitted by mosquito bite, 37% women have knowledge that HIV cannot be transmitted or a person cannot be HIV infected by sharing food with an AIDS patient and 40% women believe that a healthy-looking person can have AIDS virus.

**Table 11.1.3.a: Rejection of misconceptions about HIV/AIDS transmission among women: percent distribution (by residence)**

Concept on HIV transmission	Urban	Rural	Total
AIDS cannot be transmitted by mosquito bites	46.4	35.5	38.8
AIDS not transmitted by sharing food with HIV/AIDS patients	44.4	34.4	37.4
Healthy person can have HIV/AIDS	45.6	37.6	40.0

Among administrative divisions, rejection of misconceptions or correct knowledge about HIV/AIDS transmission is highest in women of Dhaka and lowest in women of Rajshahi.

**Table 11.1.3.b: Rejection of misconceptions about HIV/AIDS transmission among women: percent distribution by division**

Concept on HIV transmission	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
AIDS cannot be transmitted by mosquito bites	62.2	34.6	38.0	12.6	29.6	36.5	35.0	24.9	38.8
AIDS not transmitted by sharing food with HIV/AIDS patients	57.9	35.2	38.3	29.1	22.7	31.8	28.0	30.6	37.4
Healthy person can have HIV/AIDS	49.0	41.9	40.0	20.2	45.2	29.8	50.2	25.7	40.0

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari and Bandarban districts

The household income, expenditure and level of education index are positively associated with rejection of misconceptions about HIV/AIDS transmission among the respondents.

**Table 11.1.3.c: Rejection of misconceptions about HIV/AIDS transmission among women: percent distribution (by household income, expenditure and education)**

Concept on HIV transmission	Income					Expenditure					Education				Total	
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete		Secondary complete and higher
AIDS cannot be transmitted by mosquito bites	26.7	28.8	35.2	43.8	56.6	25.8	33.9	34.8	43.6	55.8	23.2	27.3	39.3	43.9	68.4	38.8
AIDS not transmitted by sharing food with HIV/AIDS patients	26.7	27.8	32.4	43.1	54.8	26.9	29.9	32.9	41.6	55.8	21.6	24.5	37.0	43.6	67.9	37.4
Healthy person can have HIV/AIDS	27.7	32.4	33.6	47.7	57.1	27.9	33.7	35.5	46.7	56.2	23.6	30.5	38.6	47.6	65.6	40.0

Income group: Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka 14801 through high

Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

## 11.2 Knowledge, Prevalence (self reported) of STIs and Its Symptoms

The risk behaviors such as mainly unprotected sexual contact with HIV partner are responsible for transmission of both STIs and HIV. Sexually transmitted infections may cause ulcers that may lead to easier and more efficient transmission of HIV from infected sex partner to other.

Only knowledge on HIV transmission and prevention measure cannot ensure the prevention of HIV. It needs conversion of the knowledge into attitude or behavior and finally to its practice. Women's attitude toward negotiating safe sex with husbands is an important determinant of practicing safe sex. In the present survey, women were asked whether a woman is justified in refusing sex with her husband when her husband is suffering STIs that can be transmitted through sexual contact. It has been observed in that 64% respondent think that if a woman knows her husband has STIs, she is justified to refuse to sex with him.

The NHDSBD-2011 collected information about knowledge of STIs. It revealed in that about 34% of all respondent women know about diseases that can be transmitted through intercourse other than HIV/AIDS, nearly 9% of all women had ever heard about syphilis and about 10% of all women had ever heard about gonorrhoea. Knowledge about all three factors is higher in urban women as compared with rural ones.

**Table 11.2.1.a: Women's knowledge of Sexually Transmitted Infection (STIs) by residence**

Women's knowledge of STIs	Urban	Rural	Total
Knowledge about transmission of other diseases by sex other than HIV/AIDS	38.1	32.0	33.9
Ever heard about Syphilis	12.2	7.7	9.1
Ever heard about Gonorrhoea	12.8	8.2	9.6

Knowledge about Syphilis is highest in Dhaka followed by Barisal, while it is lowest in Chittagong followed by Rajshahi and Sylhet. Knowledge about Gonorrhoea is highest in Chittagong Hill tract followed by Rajshahi and lowest in Sylhet followed by Chittagong.

**Table 11.2.1.b: Women's knowledge of Sexually Transmitted Infection (STIs) by division**

Women's knowledge of STIs	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Knowledge about transmission of other diseases by sex other than HIV/AIDS	50.5	9.7	20.3	58.6	31.8	16.0	52.2	4.3	33.9
Ever heard about Syphilis	16.7	2.4	12.0	5.4	7.0	3.1	16.0	3.1	9.1
Ever heard about Gonorrhoea	14.4	2.4	20.0	16.6	6.0	3.9	13.0	2.0	9.6

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari and Bandarban districts

The data presented in table 11.2.1.c shows considerable variation in respondents' knowledge of Sexually Transmitted Infection by background characteristics. Knowledge is higher among women who belong to the highest household income expenditure group. Knowledge about STIs is also increased with education.

**Table 11.2.1.c: Women's knowledge of Sexually Transmitted Infection (STIs) by household income, expenditure and education level**

Women's knowledge of STIs	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
Knowledge on STIs transmission by sex	25.3	31.1	33.2	36.3	42.2	35.3	32.6	31.0	33.1	37.4	18.0	27.3	35.5	40.0	56.0	33.9
Ever heard about Syphilis	5.9	7.1	7.4	8.8	15.4	7.6	8.4	7.4	8.7	13.3	3.4	3.8	9.7	9.4	24.1	9.1
Ever heard about Gonorrhoea	6.3	8.7	8.0	8.3	16.0	8.0	9.0	7.5	9.5	13.9	4.9	4.9	10.3	9.4	24.3	9.7

Income group: Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka 14801 through high

Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

The prevalence of STIs and/or STI symptoms is a useful proxy indicator for HIV transmission. In the present survey respondents who ever had sex in the past 12 months were asked, whether they had a disease contracted through sexual intercourse. In response only 2.4% women reported having had an STI in the 12 months prior to the survey.

Some of the common symptoms of STIs include discolored and bad smelling discharge from genitals, painful or painless ulcers, warts and rashes on genital organs and pain during urination. It is important to note that many STIs remain asymptomatic particularly in women and the infected person can continue infecting others without realizing that s/he is suffering from a STI.

The respondent women were also asked whether they had any bad smelling/abnormal genital discharge or had experienced a genital sore or ulcer discharge in the past 12 months. It is revealed that 4.4% of all respondent women had bad smelling/abnormal genital discharge and only 2.0% respondent women reported have genital sore or ulcer.

The actual incidence and prevalence of STIs are difficult to measure because many of the patients suffering from STIs conceal their diseases. However, the prevalence of the STIs is relatively low in the general population.

**Table 11.2.2.a: Prevalence (self -report) of STIs and STIs symptoms during the last 12 months (by residence)**

Prevalence of STIs	Urban	Rural	Total
Get infected by any disease through intercourse	3.1	2.0	2.4
<b>Bad smelling/abnormal genital discharge</b>	<b>4.6</b>	<b>4.3</b>	<b>4.4</b>
Genital sore/ulcer	2.2	1.9	2.0

The percentage of women who get infected by any disease through intercourse is highest in Khulna and lowest in CHT. As regards STIs symptoms (bad smelling/abnormal genital discharge), prevalence is highest in Chittagong and Khulna and lowest in CHT and Barisal. Genital sore/ulcer is higher among women living in Sylhet.

**Table 11.2.2.b: Prevalence (self -report) of STIs and STIs symptoms during the last 12 months by division**

Prevalence of STIs	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Get infected by any disease through intercourse	1.6	2.3	1.3	2.5	5.0	1.7	2.2	1.7	2.4
<b>Bad smelling/abnormal genital discharge</b>	<b>3.6</b>	<b>9.0</b>	<b>1.3</b>	<b>2.2</b>	<b>8.8</b>	<b>1.6</b>	<b>1.3</b>	<b>4.0</b>	<b>4.4</b>
Genital sore/ulcer	2.0	2.0	1.3	1.2	3.0	1.0	1.7	4.6	2.0

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari and Bandarban districts

Table 11.2.2.c represents the percentage of women reporting an STI and/or STI symptoms by household income-expenditure and educational level. It has been indicated that prevalence (self-report) of STIs and STIs symptoms is relatively lower among women who have completed secondary or higher education.

**Table 11.2.2.c: Prevalence (self -report) of STIs and STIs symptoms during the last 12 months by household Income, expenditure and Education**

Prevalence of STIs	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
Get infected by any disease through intercourse	2.7	2.5	2.1	1.9	2.6	2.3	2.3	2.1	2.4	2.6	2.2	1.4	3.0	2.6	2.1	2.4
Bad smelling/abnormal genital discharge	4.2	4.5	3.6	4.4	5.3	3.1	3.2	4.3	5.5	5.8	5.1	3.5	4.6	4.6	2.3	4.4
Genital sore/ulcer	1.8	1.7	2.2	2.0	2.1	1.9	1.8	1.7	2.7	1.9	2.6	1.4	2.1	2.1	0.7	2.0

Income group: Rank-1:taka0-5500 , Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka14801 through high  
Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

### 11.3 Knowledge about tuberculosis

Tuberculosis (TB) is one of the most ancient diseases of mankind. In spite of newer modalities for diagnosis and treatment of tuberculosis, unfortunately people are still suffering from this infectious disease. According to World Health Organization (WHO), tuberculosis is a worldwide pandemic disease. It is one of the leading causes of death among HIV infected people. The principal causative agent of human tuberculosis is *Mycobacterium tuberculosis* which is mainly transmitted from an infectious source to susceptible persons primarily through the air (that is, through coughing, sneezing).

Improving knowledge about tuberculosis will increase treatment seeking tendency, case diagnosis and successful treatment. Thus, TB related morbidity and mortality will be reduced. However tuberculosis is a poverty-related disease. Improving overall lifestyle, household income, nutrition etc will have an impact on reduction of TB burden.

In order to collect the information about the level of TB awareness, women respondents were asked whether they have ever heard of the illness and whether it can be cured. It has been observed that 95% women have heard of TB and 88% respondent women believe that it is curable. Knowledge about TB cure is higher in urban (92%) than in rural areas (86%).

**Table 11.3.1.a: Knowledge about tuberculosis by residence**

Knowledge on tuberculosis	Urban	Rural	Total
Ever heard of tuberculosis	96.6	93.9	94.7
Knows tuberculosis can be cured	91.6	86.0	87.7

Knowledge about tuberculosis slightly varies according to administrative division. It has been revealed that respondents of Dhaka are more knowledgeable than women of other divisions.

**Table 11.3.1.b: Knowledge about tuberculosis, by division**

Knowledge on tuberculosis	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
Ever heard of tuberculosis	98.4	95.2	84.0	94.9	96.8	86.7	98.7	93.7	94.7
Knows tuberculosis can be cured	95.1	83.3	78.0	92.9	86.4	81.6	90.8	76.6	87.7

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari and Bandarban districts



Household income, expenditure and level of education are correlated with knowledge of tuberculosis among participants. Knowledge about it is highest in the women of higher income expenditure group and women who have completed secondary or higher education.

**Table 11.3.1.c: Knowledge about tuberculosis by household income, expenditure and education level**

Knowledge on tuberculosis	Income					Expenditure					Education				Total	
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete		Secondary complete and higher
Ever heard of tuberculosis	90.5	92.5	95.7	95.4	98.3	92.8	94.2	93.2	95.6	97.8	88.3	94.1	96.9	97.2	99.6	94.7
Knows tuberculosis can be cured	81.7	84.3	87.0	89.5	94.8	85.1	86.3	85.1	88.5	93.5	76.7	84.9	90.3	92.1	98.8	87.7

**Income group:** Rank-1: taka 0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka 14801 through high  
**Expenditure group:** Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

## 11.4 Non-communicable diseases

The burden of chronic non-communicable diseases (NCDs) is rising in low and middle-income countries like Bangladesh. These are especially heart disease, stroke, hypertension, diabetes, cancer, chronic respiratory disease and kidney disease. NCDs deaths account for 60% of all deaths in the world and for one in two deaths in the Asian region. Prevention programs and policies are in their early phase in Bangladesh and struggle to achieve priority because of the more established and pressing needs of infectious disease control. Reduction of morbidity and premature mortality due to the 'conventional' non-communicable diseases (NCDs) will require appropriate actions at all levels from primary prevention to treatment and rehabilitation in an integrated manner (HPNSDP, PIP, 2011).

### 11.4.1 Prevalence of non-communicable diseases (reported)

In order to collect information about the prevalence of NCDs, the respondent women were asked whether any member of her family has high or low blood pressure/diabetes/heart disease/asthma/kidney disease/gastric/mental disease or not.

**Table 11.4.1.a: NCDs prevalence among the respondent households: distribution of household having at least one person with high or low NCDs by residence**

NCDs prevalence	Urban	Rural	Total
High/low blood pressure	36.6	33.1	34.1
Diabetic	8.2	4.2	5.4
Heart disease	8.1	7.3	7.6
Asthma	8.2	7.5	7.7
Kidney disease	7.4	5.1	5.8
Gastric disease	74.4	75.4	75.1
Mental disease	5.7	3.8	4.4

It is observed that 75% of the households have at least one person suffering from gastric complication. As far other NCDs, the percentage is 34% for high/low blood pressure, 8% for asthma, 8% for heart disease, 5.4% for diabetes and 4.4% for mental disease among the surveyed households. However, this result reflects the prevalence of NCDs only among the household. Within the household it may be in more patients than one patient of the listed NCDs. The prevalence of NCDs (except gastric) is higher in urban households compared to rural household.

Table 11.4.1.b provides the percent distribution of household having at least one person with high or low blood pressure/diabetes/heart disease/asthma/kidney disease/gastric/mental disease by administrative division. Result shows that prevalence of almost all NCD is highest in Chittagong except for kidney diseases and mental diseases.

**Table 11.4.1.b: NCDs prevalence among the respondent households: distribution of household having at least one person with NCDs by division**

NCDs prevalence	Dhaka	Chittagong <sup>a</sup>	CHT <sup>b</sup>	Rajshahi	Khulna	Rangpur	Barisal	Sylhet	Total
High/low blood pressure	32.5	51.6	22.3	26.6	39.4	21.2	41.0	30.0	34.1
Diabetic	5.6	10.1	3.7	2.5	5.0	3.0	5.0	6.6	5.4
Heart disease	6.3	12.1	4.0	5.1	8.9	6.8	7.8	7.7	7.6
Asthma	7.5	13.2	3.3	1.7	9.0	6.2	8.3	9.7	7.7
Kidney disease	5.3	5.6	3.0	6.2	6.6	4.6	7.5	8.6	5.8
Gastric disease	71.1	92.0	61.0	72.3	77.8	75.9	70.5	66.6	75.1
Mental disease	3.3	3.3	3.0	2.8	5.0	7.9	4.2	5.4	4.4

<sup>a</sup> Chittagong includes CHT

<sup>b</sup> CHT includes only Rangamati, Khagrachhari and Bandarban districts

The prevalence of NCDs significantly varies according to background characteristics. Prevalence of almost all (except mental diseases) NCDs are positively associated with household income – expenditure and education of the respondents. It is higher in households of high income, expenditure and higher education. On the other hand, prevalence of mental diseases is inversely associated with household income, expenditure and education.

**Table 11.4.1.c: NCDs prevalence among the respondent households: Distribution of household having at least one person with NCDs by household income, expenditure and education**

NCDs prevalence	Income					Expenditure					Education					Total
	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete and higher	
High/low blood pressure	25.6	29.8	27.4	39.0	48.3	23.6	26.7	33.2	37.8	49.4	26.6	27.2	35.7	38.3	42.5	34.1
Diabetic	1.8	3.3	3.0	6.3	12.5	1.8	3.1	3.3	6.1	11.5	2.5	3.3	4.2	4.4	12.1	5.4
Heart disease	4.8	4.6	5.3	10.8	11.9	3.0	5.3	5.6	9.5	14.5	6.3	6.2	7.7	8.4	9.1	7.6
Asthma	6.3	6.1	6.6	9.9	9.6	4.7	6.9	6.9	9.9	10.5	7.3	4.9	8.2	8.7	8.0	7.8
Kidney disease	4.8	5.2	5.2	6.3	7.4	4.4	3.9	5.7	6.9	8.1	5.5	5.7	5.9	6.0	5.3	5.7
Gastric disease	73.2	75.8	70.5	76.6	79.9	69.5	73.2	73.7	78.4	80.6	74.3	72.7	74.5	76.9	76.8	75.4
Mental disease	5.6	4.5	3.5	3.3	4.9	5.3	4.0	3.4	4.2	4.9	4.3	4.9	4.8	4.2	3.2	4.3

Income group: Rank-1:taka0-5500, Rank-2: taka 5501-6500, Rank-3: taka 6501-9500, Rank-4: taka 95001-14800, Rank-5: taka14801 through high

Expenditure group: Rank-1: taka 0-4450, Rank-2: taka 4451-5699, Rank-3: taka 5700-7160, Rank-4: taka 7161-10100, Rank-5: taka 10101 through high

## 11.4.2 Prevalence of Diabetes and Hypertension

### Diabetes

The prevalence of diabetes continues to increase worldwide, especially in Asia. Several population based studies in Bangladesh have revealed an increasing prevalence of diabetes among both rural and urban populations. NHDSBD-2011 conducted a cross-sectional assessment of the prevalence of diabetes in the population. It is to be noted that diabetes was not diagnosed with lab investigation.

Blood glucose was measured with HemoCue 201+ blood glucose analyzer (.....) using capillary whole blood obtained from the middle or ring finger of adults. WHO cut-off points, which correspond to the clinical classification for normal fasting blood glucose levels, pre-diabetes and diabetes, was used to measure blood glucose level (WHO, 2006). Fasting glucose value 3.9-6.0 mmol/L is considered to be normal, 6.1-6.9 mmol/L is pre-diabetes, and the value greater than or equal to 7.0mmol/L is considered to be diabetes. In order to investigate the prevalence of diabetes, men and women of  $\geq 30$  years of age were considered eligible and data was collected from 939 men and 1046 women.

Table 11.4.2.1 shows that diabetes has a positive relationship with age though with some exceptions. Fasting blood glucose level (mmol/L) indicates that 10% men and 13% women (age  $\geq 40$  years) are diabetic. The prevalence of diabetes significantly differs according to sex and residence. The prevalence is higher in women (12.81%) than men (9.48%). Overall 35.89% of men and 34.39% of women are pre-diabetic.

**Table 11.4.2.1: Percent distribution by blood glucose level (fasting plasma glucose) according to sex and age**

Blood glucose level	Male			Female		
	30-59 year	60+ year	Total	30-59 year	60+ year	Total
Normal (3.9-6.0 mmol/L)	53.97	55.82	54.63	58.98	50.79	56.02
Pre-diabetic (6.1-6.9 mmol/L)	37.74	32.54	35.89	29.34	34.39	31.17
Elevated ( $\geq 7.0$ mmol/L)	8.28	11.64	9.48	11.68	14.81	12.81

### Hypertension

In Bangladesh hypertension is an increasingly important medical and public health problem. Hypertension is recognized as "the silent killer" because a person can have high blood pressure and never have any symptoms. If left untreated, high blood pressure can lead to life-threatening medical problems such as stroke, heart attack or kidney failure. The present survey intended to provide a cross-sectional assessment of the prevalence of high blood pressure in the population not medical diagnosis of the disease.

Diagnosis of hypertension was made by measurement of blood pressure in arm with LIFE SOURCE® UA-767 plus Blood Pressure Monitor model/sphygmomanometer/MENTION YOURS. The American Heart Association guidelines were used for cut-off points for blood pressure measurements (AHA, 2003). To investigate the prevalence of hypertension men and women of  $\geq 30$  years of age were considered eligible in the survey. Data was collected from 82 men and 1574 women this is kind of odd.

Table 11.4.2.2 presents that urban population are more likely to have elevated blood pressure (pre hypertensive, hypertension stage 1 and hypertension stage 2) than the rural population. Urban men are more likely to have any level of elevated blood pressure than the urban women. It has been revealed that overall 46% of men and 37% of women are pre-hypertensive, 4.88% of men and 6% of women are hypertensive at Stage 1 (when BP 140-159 mmHg SBP or 90-99 mmHg DBP) and 4.88% of men and 3.75% of women are hypertensive at stage 2 level (when BP 160+ mmHg SBP or 100+ mmHg DBP).

**Table 11.4.2.2: Percent distribution by blood pressure level according to sex and age**

Blood pressure	Normal BP <120mmHg SBP and <80mmHg DBP		Pre hypertension BP 120-139mmHg SBP or 80-89mmHg DBP		Hypertension Stage 1 BP 140-159mmHg SBP or 90-99mmHg DBP		Hypertension Stage 2 BP 160+ mmHg SBP or 100+ mmHg DBP	
	Male	Female	Male	Female	Male	Female	Male	Female
<b>Residence</b>								
Urban	34.48	49.79	44.83	37.71	10.34	7.92	10.34	4.58
Rural	49.06	54.29	47.17	36.84	1.89	5.48	1.89	3.38
Total	43.90	52.92	46.34	37.10	4.88	6.23	4.88	3.75

### Annex A: Calorie and nutrient consumption by district in Bangladesh

District	Energy (kcal)		Protein (gm)		Fat (gm)		Carbohydrate (gm)		Calcium (mg)		Iron (mg)		Vitamin C (mg)		Carotenes (µg)		Retinol (µg)										
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female									
	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total									
Bagerhat	2721.0	1945.8	2311.3	83.8	51.7	57.4	43.0	54.6	49.1	503.3	304.4	398.2	542.1	585.3	564.9	32.1	24.7	28.2	80.8	75.6	68.6	3598.3	4665.6	4162.4	659.1	834.6	751.8
Bandarban	2788.0	2414.9	2589.0	96.1	73.6	84.1	43.0	47.3	45.3	502.9	422.9	460.2	805.9	536.7	662.3	41.7	28.0	34.4	97.5	88.0	92.4	3649.8	3151.0	3383.7	732.8	740.8	737.1
Barisal	2863.9	2413.1	2593.6	183.4	72.5	85.2	63.2	44.8	52.4	458.3	419.2	435.3	1206.1	700.6	908.5	35.9	29.8	32.3	121.2	101.8	109.7	4042.8	4780.4	4477.0	930.5	1907.5	975.8
Bhola	2594.6	2314.4	2435.7	78.8	75.9	77.2	38.1	34.8	36.3	470.3	414.6	439.6	712.1	871.7	800.0	28.0	26.9	27.4	81.1	74.3	77.3	3990.4	3822.1	3897.7	989.5	888.5	933.9
Bogra	2335.2	2114.1	2223.4	63.1	57.0	60.0	21.9	19.1	20.5	461.9	419.9	407.0	370.8	368.1	369.4	26.3	24.1	25.2	42.9	38.4	40.8	2999.9	2400.1	2251.7	391.7	317.3	415.8
Borguna	2390.8	2312.3	2342.3	82.1	60.4	61.1	35.2	34.6	34.8	442.4	428.8	434.7	566.2	499.3	537.3	31.1	33.0	32.2	81.2	92.4	87.5	4207.0	5857.5	5135.2	794.3	1056.7	937.5
Brahmanbaria	2141.8	1960.8	2037.8	68.4	61.7	54.6	37.4	39.0	38.3	375.6	333.9	351.7	785.4	852.8	824.1	27.2	22.2	24.4	80.1	61.2	69.2	1761.8	1131.9	1399.9	419.2	287.8	343.7
Chandpur	1983.2	1698.7	1796.9	95.7	48.8	53.6	26.3	26.3	26.3	376.8	300.4	337.6	489.5	442.4	468.3	24.5	19.9	22.1	55.4	56.0	55.7	4526.2	5398.0	4974.4	801.1	946.1	875.6
Chapainawabgonj	2251.7	1717.8	1948.9	54.6	44.6	49.0	16.2	15.9	16.0	464.7	344.6	396.6	306.9	315.2	311.6	29.6	23.2	26.0	40.0	33.7	36.4	2190.6	1658.4	1888.8	377.9	290.3	328.2
Chittagong	1926.3	1925.0	1925.6	61.6	59.9	60.7	25.4	26.4	25.9	361.5	360.7	361.1	651.3	609.6	628.7	21.4	20.5	20.9	45.5	48.9	47.3	3134.5	2926.8	3021.8	583.3	566.7	574.3
Chuadanga	2048.0	1970.5	2007.5	56.5	52.1	54.2	24.4	25.8	25.2	392.0	373.7	382.4	527.6	494.8	510.3	27.4	27.1	27.2	83.4	91.0	87.4	2428.7	3183.1	2822.6	448.2	552.6	466.9
Comilla	2303.3	2055.5	2167.7	73.4	68.4	71.2	50.0	37.7	43.3	393.0	359.9	374.9	575.0	564.5	569.3	27.9	27.5	27.7	74.8	76.8	75.9	4489.4	3885.6	4159.0	841.3	1074.6	784.6
Cox's Bazar	2587.2	2918.4	2750.4	74.1	84.5	79.5	39.2	42.1	40.7	465.2	551.0	519.4	800.7	1029.7	919.8	25.4	29.4	27.5	65.7	73.2	69.6	4644.7	6708.6	5717.5	928.9	1104.8	1061.9
Dhaka	2609.6	2478.5	2537.3	67.9	66.6	67.2	48.5	45.3	46.7	463.6	439.7	450.4	438.9	526.3	487.1	27.9	27.1	27.5	62.7	64.5	63.7	2195.7	2534.4	2382.5	455.5	502.5	481.5
Dinaipur	2294.7	2020.0	2155.0	58.2	47.7	52.9	25.4	27.8	26.6	449.4	386.4	417.4	324.0	395.3	315.3	27.5	23.4	25.4	70.2	63.7	66.9	5218.0	4934.3	5073.7	1038.8	914.2	975.4
Faridpur	2155.9	2211.2	2184.2	50.0	47.5	48.7	38.0	54.0	46.2	399.8	376.1	387.7	340.8	365.9	353.7	23.2	22.3	22.7	65.1	79.3	72.4	2540.1	1851.0	2187.2	479.8	390.3	434.0
Feni	1760.9	1815.8	1790.3	53.4	54.7	54.1	25.9	27.6	26.8	317.3	323.2	320.4	468.7	488.2	478.1	24.9	25.1	25.0	47.7	52.2	50.1	2438.5	2470.5	2455.7	501.9	511.0	506.8
Gaibandha	2576.5	2219.6	2384.1	69.0	62.4	68.4	20.0	24.1	25.9	499.2	427.5	460.6	553.1	447.0	455.3	32.7	26.9	28.0	95.4	78.4	81.6	5696.6	4673.9	5146.3	1099.9	910.5	997.8
Gazipur	2326.7	1964.9	2129.2	60.5	54.1	57.0	29.6	28.9	29.2	441.8	361.4	397.9	489.7	483.1	486.1	25.2	20.6	22.7	63.0	62.7	62.8	4573.5	4753.8	4671.9	901.4	881.5	890.5
Gopalganj	2416.8	2396.6	2406.5	59.2	62.4	60.8	71.1	57.3	64.0	388.7	435.8	412.9	476.1	421.1	447.8	25.2	24.7	24.9	90.2	100.4	95.4	7077.5	12545.2	10040.7	1293.1	2291.9	1806.3
Hobigonj	1970.7	1899.5	1931.2	60.4	57.5	58.8	18.9	19.5	19.2	381.6	365.0	372.4	842.0	807.9	829.1	26.8	24.4	25.5	68.2	68.6	68.4	2994.9	2749.4	2858.8	556.0	510.4	530.7
Jamalpur	2789.0	2451.0	2516.7	86.8	60.3	63.5	27.4	25.3	26.3	554.0	483.4	518.0	518.6	515.8	517.2	33.8	31.8	32.8	76.6	76.6	76.6	2236.4	2919.0	2584.4	645.3	913.6	782.0
Jessore	2905.5	2585.2	2742.4	74.1	68.4	71.2	54.9	48.4	51.6	507.3	451.4	476.8	573.9	505.9	539.3	30.8	26.7	28.7	74.6	70.2	72.4	4054.4	3321.0	3680.9	784.2	643.4	712.5
Jhalakathi	2283.6	2078.0	2187.9	59.0	53.9	56.5	29.5	29.0	29.2	436.7	389.9	413.8	390.8	401.0	395.8	31.8	29.7	30.8	66.0	61.2	63.7	4880.9	4337.2	4614.5	943.1	830.5	887.9
Jhenaidah	2104.0	1592.1	1827.0	51.5	38.6	44.5	18.6	19.6	19.1	421.1	308.6	360.2	535.5	418.1	472.0	30.3	20.9	25.2	77.8	71.2	79.5	2954.9	2452.4	2385.2	400.9	434.7	419.2
Joypurhat	2096.4	1814.3	2002.9	51.7	47.1	49.3	17.9	16.4	17.1	422.4	387.1	404.2	557.5	282.4	260.0	20.7	22.2	22.9	32.9	33.4	33.1	893.8	1390.8	1149.2	197.0	268.6	233.8
Khagrachari	3063.1	3003.6	3031.6	98.5	112.1	105.7	47.2	39.8	43.3	589.9	567.0	568.4	1124.0	1344.1	1240.6	35.0	35.2	35.1	121.8	128.5	125.3	5125.9	6630.3	5922.8	1137.8	1373.9	1282.8
Khulna	2578.3	2471.2	2522.4	63.3	61.5	62.4	46.1	48.8	46.5	472.3	446.8	459.0	644.7	692.5	669.6	30.1	28.7	29.4	86.6	87.4	87.0	7884.9	7481.8	7874.7	1380.1	1304.9	1340.9
Kishoregonj	1730.1	1504.1	1607.9	43.6	43.3	43.4	13.3	14.2	13.8	349.3	263.0	318.8	307.3	321.1	314.8	20.7	18.9	19.7	41.2	54.1	48.2	4589.6	5289.5	4968.2	800.0	933.0	877.9
Kurigram	2425.0	2069.3	2236.5	80.7	50.1	55.0	20.4	18.5	19.4	486.9	414.4	448.5	524.7	386.7	451.6	28.9	24.6	26.6	72.0	58.4	64.8	7809.0	6224.0	6968.8	1339.0	1066.5	1194.5
Kushtia	1895.5	1571.7	1719.8	46.7	39.3	42.7	21.1	21.3	21.2	368.9	299.8	331.4	323.3	314.0	318.2	22.4	24.5	24.5	65.1	54.1	59.1	2766.9	2454.0	2802.4	519.8	545.4	533.7
Lalmonirhat	2913.9	1899.7	2408.4	63.2	58.4	58.4	20.5	28.9	24.3	602.1	327.2	476.3	444.0	381.8	381.8	33.0	21.3	27.6	56.6	61.2	58.7	3308.8	3786.8	3527.6	582.0	654.6	615.3
Laxmipur	1889.4	1715.9	1793.8	53.9	50.9	52.3	24.1	23.8	23.9	357.9	820.0	370.4	396.1	416.0	416.0	22.7	20.0	21.2	44.0	40.9	42.3	2336.5	2157.9	2193.2	409.1	391.4	399.3
Madaripur	2150.2	2307.0	2236.8	55.9	58.3	57.2	35.9	38.6	37.4	391.5	422.6	408.5	568.1	565.8	566.9	21.9	24.4	23.3	40.2	48.0	44.4	2908.1	4080.1	3537.5	538.9	638.9	626.3
Magura	2355.4	2202.6	2274.5	59.5	55.7	57.5	33.9	34.3	34.1	433.1	401.3	416.2	500.2	492.9	496.3	81.7	27.7	29.6	72.4	79.5	76.2	1793.5	2175.0	1995.6	402.4	461.1	433.5

Manikgonj	2279.3	2293.1	2286.8	52.2	58.9	55.9	46.4	44.9	45.6	407.2	405.1	406.0	334.7	402.2	371.6	25.7	25.4	26.6	82.4	96.8	90.3	2115.7	1853.4	1972.5	534.1	473.1	500.8
Meharpur	2301.7	1930.3	2109.5	63.7	53.6	58.5	27.2	23.6	25.3	439.5	366.6	481.8	535.4	498.4	516.3	35.2	30.7	32.8	89.8	81.0	85.3	2650.5	2816.7	2736.5	510.3	530.4	520.7
Moulavibazar	2270.7	2214.0	2204.1	72.0	63.6	67.6	28.5	38.2	33.6	427.6	401.0	413.7	457.0	470.7	610.4	678.4	28.9	24.1	25.4	74.8	70.6	72.6	2837.9	3257.4	3057.1	577.5	619.8
Munshigonj	2678.6	1974.5	2340.9	64.6	57.0	60.6	42.1	43.5	42.9	485.3	336.1	410.8	472.4	441.7	411.4	21.8	26.3	52.2	59.3	55.9	56.3	1963.2	2893.9	2457.2	430.0	674.3	559.7
Wymensingh	2411.9	1973.8	2181.3	65.3	55.7	60.3	26.6	26.6	26.6	468.4	370.0	415.6	673.8	649.0	660.7	29.3	22.8	25.9	66.0	69.7	67.9	6556.6	7373.2	6986.4	1154.2	1294.9	1228.3
Naogaon	2132.1	2052.0	2090.6	52.4	50.3	51.3	20.7	19.0	19.8	423.3	408.8	415.8	337.1	322.2	329.4	24.0	23.9	24.0	40.2	36.9	38.5	1822.6	1777.8	1799.4	333.0	322.0	327.3
Narail	2970.2	2626.6	2775.4	77.6	75.3	78.3	65.2	68.9	62.2	498.7	433.2	461.5	756.9	649.1	695.8	28.7	25.3	26.8	80.5	62.2	70.1	3119.4	2591.8	2820.1	847.2	600.5	620.7
Narayanganj	2332.3	2238.7	2283.3	61.1	57.9	59.4	50.9	39.6	45.0	402.0	406.1	404.1	398.2	341.1	368.3	26.3	27.0	26.7	69.8	76.2	74.2	3172.5	3310.3	3244.6	685.5	890.7	787.7
Narsingdi	2245.0	1970.7	1885.3	60.2	47.1	53.2	23.1	27.4	25.4	437.3	377.9	352.2	372.6	440.5	408.8	28.7	20.1	24.1	71.1	74.0	72.4	2145.2	4447.1	4772.8	1113.6	913.6	1006.9
Netro	1986.6	2007.0	1988.9	54.7	50.9	52.8	21.4	21.3	21.4	383.7	395.9	389.2	312.5	262.3	287.2	23.5	23.4	23.4	63.5	51.3	57.4	2165.2	1680.4	1915.3	443.3	330.0	386.3
Netrokona	1993.5	1598.5	1786.5	47.2	41.6	44.3	18.6	17.9	18.2	397.6	309.3	351.3	456.0	401.5	427.5	23.2	19.1	21.1	53.7	51.7	52.7	5226.7	5007.9	5112.1	916.2	885.2	899.9
Nilphamari	3388.9	2988.8	3183.4	77.5	69.9	72.8	43.0	23.6	33.0	658.0	612.2	634.4	492.7	366.0	423.3	39.5	35.4	37.4	69.9	72.4	71.2	6281.6	5225.5	5739.3	1127.6	935.8	1029.1
Noakhali	1774.5	1874.1	1829.6	48.9	48.9	48.9	19.7	19.5	19.6	338.7	347.8	343.7	459.9	475.9	468.7	23.2	22.7	22.9	36.1	37.8	37.0	1843.4	2580.2	2250.7	389.1	481.6	426.8
Pabna	1975.2	1848.6	1970.4	57.0	51.9	54.4	18.1	15.6	16.8	384.7	363.7	374.1	267.2	233.5	250.2	25.4	22.5	23.9	49.8	43.2	46.4	1089.8	868.4	978.2	223.6	194.9	212.1
Panchagar	2392.1	2100.2	2236.7	50.7	45.5	47.9	21.3	20.4	20.8	490.1	425.1	455.5	303.2	266.7	294.4	30.2	26.4	28.1	69.0	68.6	68.8	4810.3	4814.5	4859.3	1072.0	1017.8	1043.2
Patuakhali	2159.5	2268.6	2221.0	66.7	68.6	67.7	34.9	33.4	34.0	386.0	413.8	407.7	1105.4	913.9	997.4	36.0	33.0	34.3	101.0	97.1	98.8	5639.4	5196.9	5389.9	1079.0	1013.6	1042.1
Pirojpur	2430.8	2298.2	2362.5	59.5	59.7	59.6	29.8	27.3	28.5	468.1	441.0	454.1	680.1	756.4	607.7	36.4	35.3	35.8	73.3	73.9	73.6	4792.1	5833.7	5329.2	898.6	1043.7	973.4
Rajbari	2559.7	2176.2	2342.4	61.8	52.0	36.3	51.5	49.5	50.4	462.7	378.0	414.7	399.4	348.3	370.4	32.0	23.7	27.3	186.7	74.8	89.2	6016.2	2833.1	4779.1	1053.1	683.2	843.5
Rajshahi	1863.9	1647.8	1749.2	49.7	44.0	46.7	15.4	15.9	15.7	374.2	325.9	348.6	280.2	235.3	256.4	25.1	21.8	23.4	39.2	36.7	37.9	2536.3	2017.7	2261.1	457.9	374.6	413.7
Rangamati	2110.3	1824.3	1958.8	70.7	64.5	67.4	24.2	32.5	28.6	404.6	320.2	359.9	760.2	740.9	750.0	23.7	20.5	22.0	65.8	73.8	70.0	1948.9	1900.9	1923.4	488.3	528.4	509.5
Rangpur	2376.2	2188.0	2276.0	58.8	66.8	63.1	26.1	20.6	23.2	467.0	425.7	445.0	393.0	332.8	360.9	29.6	30.4	30.0	65.1	60.8	62.8	5794.2	5204.8	5480.5	1028.7	1070.4	1050.9
Sariatpur	2087.5	2068.4	2076.9	53.1	51.4	52.2	35.8	31.1	33.2	386.3	393.4	390.3	307.6	336.9	323.9	21.7	22.9	22.4	39.0	42.6	41.0	3145.8	3668.2	3380.9	567.8	638.0	602.4
Sathkira	2578.6	2113.3	2333.3	61.8	55.5	58.5	49.8	38.9	44.1	457.8	379.3	416.4	520.8	480.3	499.4	27.7	22.8	25.1	71.9	61.6	66.5	3447.2	3540.1	4486.2	674.3	669.0	671.5
Sherpur	2822.7	2208.6	2492.5	80.3	69.5	74.5	41.5	34.0	37.5	521.9	400.0	456.2	770.4	640.6	700.5	32.9	28.9	30.7	80.7	63.3	71.4	4524.3	4346.2	4438.3	854.4	837.5	845.3
Sirajgonj	2252.4	2036.2	2144.8	53.5	51.2	52.4	17.4	14.9	16.2	457.0	412.0	434.6	372.2	316.5	345.5	24.6	22.9	23.8	63.1	50.8	57.0	542.0	609.7	575.7	168.0	145.1	156.6
Sunamgonj	2270.1	1625.7	1925.6	58.6	68.8	54.3	22.1	15.4	18.5	460.0	322.0	386.2	502.6	553.4	529.7	22.1	16.5	19.1	50.2	40.8	45.1	1368.7	1012.7	1178.4	280.2	228.9	252.8
Sylhet	1917.3	1847.5	1881.8	53.8	53.4	53.6	22.2	20.8	21.5	375.0	361.8	368.3	392.7	440.9	417.2	19.1	18.3	18.7	52.6	56.2	53.9	1377.6	1439.5	1409.1	364.2	440.7	403.1
Tangail	3275.3	1933.9	2591.9	82.4	58.6	70.4	37.6	35.1	36.3	638.4	344.2	485.5	641.2	613.1	626.9	39.3	24.4	31.7	92.5	96.0	94.3	5340.0	6136.2	5745.7	1020.6	1162.5	1093.0
Thakurgaon	2561.9	1801.2	2178.0	76.3	53.5	64.8	33.3	30.3	31.8	485.4	324.0	403.9	376.0	393.1	384.6	36.3	25.6	30.9	63.2	61.5	62.3	7647.4	5494.2	6659.8	1448.9	1000.2	1222.4
Total	2375.2	2068.8	2222.1	64.1	58.4	61.0	31.8	30.4	31.1	449.4	388.0	418.8	539.0	519.5	528.7	28.6	25.1	26.7	67.5	66.4	68.9	3878.5	3904.2	3892.1	752.1	759.6	756.1

**Annex B: Percent of households below poverty line by district**

Division	District	Percent of households per capita Kcal intake $\leq$ 1805 kcal (Hard core poverty)			Percent of households per capita Kcal intake $\leq$ 2122 Kcal (Absolute poverty)		
		Urban	Rural	Total	Urban	Rural	Total
D	Dhaka	24.0	16.7	17.7	48.0	42.0	42.9
	Faridpur	28.0	36.0	32.0	56.0	44.0	50.0
	Gazipur	28.0	33.0	32.0	60.0	54.0	55.2
	Gopalganj	12.0		12.0	28.0		28.0
	Jamalpur	34.0	24.0	28.0	50.0	48.0	48.8
H	Kishoregonj	100.0	46.0	64.0	100.0	72.0	81.3
	Madaripur		20.0	20.0		60.0	60.0
A	Manikgonj	12.0	16.0	14.0	24.0	52.0	38.0
	Munshigonj	92.0	12.0	38.7	92.0	34.0	53.3
	Mymensingh	63.0	38.0	48.0	78.0	54.7	64.0
K	Narayangonj		26.7	26.7		50.7	50.7
	Narsingdi	34.0	82.7	63.2	50.0	92.0	75.2
	Netrokona	40.0	58.7	54.0	68.0	82.7	79.0
	Rajbari	8.0	12.0	10.0	40.0	40.0	40.0
A	Sariatpur		40.0	40.0		68.0	68.0
	Shariatpur	20.0		20.0	36.0		36.0
	Sherpur	12.0	20.0	18.0	16.0	42.7	36.0
	Tangail	10.0	59.7	45.4	16.0	72.6	56.3
C H I T T A G O N G	Brahmanbaria		50.0	50.0		62.0	62.0
	Chandpur	48.0	62.0	55.0	74.0	82.0	78.0
	Chittagong	49.0	44.0	45.8	70.0	68.0	68.7
	Comilla	45.3	40.0	43.2	69.3	54.0	63.2
	Cox's Bazar	64.0	14.7	27.0	84.0	29.3	43.0
	Feni	64.0	46.0	52.0	80.0	76.0	77.3
	Laxmipur	48.0	64.0	58.7	72.0	82.0	78.7
	Noakhali	64.0	54.7	57.0	84.0	80.0	81.0
CHT Hill Tracts	Bandarban	56.0	17.3	27.0	76.0	32.0	43.0
	Khagrachari	20.0	25.7	24.2	36.0	33.8	34.3
	Rangamati	36.0	45.3	43.0	60.0	65.3	64.0
R A J S H A	Bogra	12.0	26.7	23.0	56.0	57.3	57.0
	Chapainawabgonj	48.0	56.0	53.3	72.0	76.0	74.7
	Joypurhat	36.0	40.0	38.7	60.0	64.0	62.7
	Naogaon	44.0	38.7	40.0	72.0	61.3	64.0
	Natore	52.0	52.0	52.0	80.0	64.0	69.3

H I	Pabna		48.0	48.0		72.0	72.0
	Rajshahi	68.0	61.3	64.0	90.0	80.0	84.0
	Sirajgonj	32.0	32.0	32.0	48.0	68.0	58.0
<b>Rajshahi</b>		<b>45.0</b>	<b>44.7</b>	<b>44.8</b>	<b>71.0</b>	<b>67.6</b>	<b>69.8</b>
K H U L N A	Bagerhat	28.0	42.7	39.0	40.0	60.0	55.0
	Chuadanga	32.0	48.0	40.0	72.0	72.0	72.0
	Jessore	16.0	15.2	15.3	32.0	26.3	27.4
	Jhenaidah	44.0	70.6	61.8	80.0	82.4	81.6
	Khulna	18.0	4.0	9.6	40.0	25.3	31.2
	Kushtia	64.0	61.3	62.0	80.0	81.3	81.0
	Magura		30.7	30.7		56.0	56.0
	Meherpur	32.0	32.0	32.0	48.0	62.0	57.3
	Narail	4.0	6.0	5.3	24.0	18.0	20.0
Satkhira	22.0	28.0	25.0	40.0	50.0	45.0	
<b>Khulna</b>		<b>27.3</b>	<b>32.0</b>	<b>30.6</b>	<b>48.7</b>	<b>50.8</b>	<b>50.2</b>
R A N G P U R	Bogra		18.0	18.0		36.0	36.0
	Dinajpur	54.0	30.0	38.0	64.0	49.0	54.0
	Gaibandha	10.0	22.7	17.6	38.0	52.0	46.4
	Kurigram	24.0	26.7	25.6	54.0	52.0	52.8
	Lalmonirhat		37.3	37.3		52.0	52.0
	Nilphamari		18.7	14.0		40.0	30.0
	Panchagar	68.0	14.7	28.0	84.0	34.7	47.0
	Rangpur	12.0	26.0	23.2	56.0	44.0	46.4
Thakurgaon	20.0	52.0	41.3	44.0	64.0	57.3	
<b>Rangpur</b>		<b>27.6</b>	<b>26.8</b>	<b>27.0</b>	<b>49.6</b>	<b>48.2</b>	<b>47.5</b>
B A R I S A L	Barisal	28.0	16.0	19.0	48.0	34.7	38.0
	Bhola	26.0	25.3	25.6	42.0	41.3	41.6
	Borguna	28.0	18.7	21.0	36.0	40.0	39.0
	Jhalkathi		29.0	29.0		52.0	52.0
	Patuakhali	20.0	34.7	31.0	36.0	57.3	52.0
	Pirojpur	20.0	18.0	18.7	32.0	44.0	40.0
<b>Barisal</b>		<b>24.0</b>	<b>24.2</b>	<b>24.9</b>	<b>39.3</b>	<b>39.9</b>	<b>39.5</b>
S Y L H E T	Hobigonj	44.0	46.0	45.3	60.0	62.0	61.3
	Moulavibazar	36.0	24.0	28.0	64.0	50.0	54.7
	Sunamgonj	44.0	60.0	54.7	68.0	76.0	73.3
	Sylhet	76.0	48.0	53.6	80.0	72.0	73.6
<b>Sylhet</b>		<b>50.0</b>	<b>48.2</b>	<b>48.6</b>	<b>68.0</b>	<b>66.3</b>	<b>66.5</b>
All		37.5	35.2	35.9	57.2	55.6	56.1

\*For Annex table D: Gap in data indicate sample is not covered

## Annexure C: Questionnaire NHDB-2011

Institute of Nutrition and Food Science  
University of Dhaka

## Nutrition Health and Demographic Survey of Bangladesh-2012

Sl. No.	Date of interview	Family Type code
1.	Household No.	1 = Single Family 2 = Joint Family 3 = Slum Dwellers
2.	PSU No.	
3.	Type of Family (Code)	
4.	Data Collection period (Season code)	Season Code 1= (07/03/2011 to 31/04/2011) and (15/09/2011 to 30/11/2011) 2= Other days of the year
5.	Type of Population (Population code)	
6.	Running project type in the area (Project code)	Population Type Code 1 = Bangali 2 = Ethnic Population 3 = Urdu Speaking 4 = Others
7.	Name of household head	
8.	Phone no. of family head	
9.	Father/Husband Name	
10.	Name of Area	Type of Project Code 1 = NGO Project 2 = NNP Project 3 = BRAC Project 4 = TMSS
11.	District Name	5 = VOSD
12.	DName of Upzilla	6 = Others Project (Mention name)
13.	Name of Post Office	8 = No project is working
14.	Post Office Code	
15.	Name of Interviewer	

Questionnaire is checked and all the the questions are filled up.

Interviewer Signature  
Supervisor Signatureতথ্য প্রদানের সম্মতি পত্র

আসসালামু আলাইকুম,

ঢাকা বিশ্ববিদ্যালয়ের পুষ্টি ও খাদ্য বিজ্ঞান ইনস্টিটিউটের পক্ষ থেকে আমরা এসেছি। আপনি জানেন যে ঢাকা বিশ্ববিদ্যালয়ের এই পুষ্টি ও খাদ্য বিজ্ঞান ইনস্টিটিউট ছাত্র-ছাত্রীদের পাঠদান ছাড়াও দেশের বিভিন্ন বড় বড় জরীপ কাজ পরিচালনা করে থাকে। এর সকল জরীপ কাজের অন্যতম হচ্ছে দেশের পুষ্টি জরীপ। এই বৎসর অর্থাৎ ২০১১ইং সালে প্রতিষ্ঠানটি সারা দেশে পুষ্টি, স্বাস্থ্য ও ডেমেগ্রাফিক জরীপ কাজ পরিচালনা করছে। এই জরীপ কাজের মাধ্যমে দেশের জনগণের পুষ্টি, স্বাস্থ্য ও অন্যান্য বিষয় তথ্য উদ্ঘাটিত হবে। এই তথ্য দেশের জন সম্পদ উন্নয়নে সরকারের গৃহীত বিভিন্ন পরিকল্পনার কার্যকারিতা ও ভবিষ্যতের কর্ম পন্থা নিরূপণে ভূমিকা রাখবে বলে আশা করা যায়।

আমরা এই জরীপে আপনার অংশ গ্রহণের জন্য আমন্ত্রণ জানাচ্ছি। আমরা আপনার মতামতকে প্রাধান্য দিবে। এই জরীপে পরিবারের গঠন, ভোগ ও ব্যয়, অর্থনৈতিক অবস্থা, শিশু, যুবতী নারী ও বিবাহিত পুরুষ ও মহিলাদের বৈবাহিক জীবন, পুষ্টি ও স্বাস্থ্যগত অবস্থা নিরূপণের জন্য শরীরের মাপজোক ও ৫ বছর পর্যন্ত শিশু, যুবতী নারী, বিবাহিত, গর্ভবতী ও স্তন্যদাত্রী মায়েদের মধ্যে যারা রাজী থাকবেন তাদের নিকট থেকে নিরপদ পদ্ধতি অবলম্বনের মাধ্যমে ৫ মিনি রক্ত গ্রহণ করা হবে। এই রক্ত মা, যুবতী নারী ও শিশুদের রক্ত স্বচ্ছতা নিরূপণে সহায়তা করবে।

এই সাক্ষাতকার নিতে দুই থেকে তিন ঘণ্টা সময় লাগবে। এই কাজে আপনার আর্থিক ভাবে কোন ক্ষতি হবেনা, শুধু কিছু সময় দিতে হবে। আপনি যেহায়া এই জরীপে অংশ গ্রহণ করতে পারেন ও যে কোন সময় নিজেকে প্রত্যাহার করতে পারেন বা কোন বিশেষ প্রদ্বের উত্তর নাও দিতে পারেন। তবে আপনার একাজে অংশ গ্রহণ ও তথ্য প্রদান, মানব সম্পদ উন্নয়ন তথা জাতীয় উন্নয়নে ভবিষ্যৎ পরিকল্পনা গ্রহণ করতে সাহায্য করবে। আপনার দেয়া তথ্যের সম্পূর্ণ গোপনীয়তা রক্ষা করা হবে। আপনার অংশ গ্রহণ গবেষণাকারী তথা সরকারকে বিভিন্ন নীতি নির্ধারণে সহায়তা করবে। জরীপকারী আমাদেরকে উপরোক্ত তথ্য পড়ে সন্নিবেহন ও মৌখিকভাবে এই জরীপের উদ্দেশ্য ব্যাখ্যা করেছেন। সবকিছু জেনে আমি যেহায়া এই জরীপ কাজে অংশ গ্রহণে রাজী হয়েছি।

তথ্যদানকারীর স্বাক্ষর

জরীপকারীর স্বাক্ষর



**SECTION-A: FOOD PRODUCTION AND CONSUMPTION**  
Nutrition Health and Demographic Survey of Bangladesh-2012

**Family Composition and Socio- Economic Information**

1. What is your religion ? (Code:1= Muslim, 2= Hindu, 3= Buddhist, 4= Christian) 2. Family Size
3. Type of population: (Population Code:: 1= Bangali, 2= Murang, 3= Urdu speaking, 4= Chakma, 5= Marma, 6= Sawtal, 7= Munipuri, 8= Tripura, 9= Khashia, 10= Urao, 11= Murang, 12= Mvi, 13= Garo, 14= Bom/Bam, 15= Khumi, 16= Pthers

**A. Family Members Information**

ID	Name of family members	Gender (Code-1)	Relation with Household Head (Code-3)	Ther relations (Code-4)		Age		Marital status (code-2)	Education level Education code (Code-6)		Occupation (Code-5)	
				Years	Month	Years	Month		Main	Secondary	Main	Secondary

Code-1: Gender	Code-3: relation with HH head	Code-4: Other Relations (Where applicable)	Code-5: Occupation code	Code-5: Occupation code
1= Male	1 = Family Head	Applicable only for children from birth to less than 5 years and 10 to 18 years aged girls	1 = Agriculture (paddy)	15 = Disabled
2= Female	2 = Wife/Husband		2 = Earth cutting	16 = Old man/Woman
3= Pregnant	3 = Son/daughter	4 = Father and Mother of less than one years aged children	3 = Household work	17 = Physically disabled
4= Lactating	4 = Father/Mother	5 = Father and mother of less than 5 years aged children	4 = NGO worker	18 = Servant
5= Pregnant lactating	5 = Brother/Sister	6 = Father and mother of 1 to 5 years aged children and adolescent girls	5 = Rickshaw/Van driver	19 = Others
&	6 = Grand father		6 = Motor driver	
Code-2: Marital Status	7 = Gand mother	7 = Father and Mother of less than 1 years aged child to 5 years aged children	7 = Business	Code-6: Education Code
1= Unmarried	8 = Grand son/Grand daughter	8 = Father and Mother of less than 1 years aged child & adolescent	8 = Student	Numerical value of Class passed
2= Married	9 = Sister in law/Brother in law	9 = Father/Mother absent in the family	9 = Job less	26= Uneducated
3= Widow	10 = Other Relatives	10 = Father / Mother lives in other place	10 = Children (<12 years)	27= Can sign only
4= Left / Separated	11 = Daughter in law	11 = Mother lives in other family 12 = Father has died	11 = Service	28= Can read only
5= Divorced	12 = Niece/Nephew	13 = Mother has died 14 = Father and Mother both has died	12 = Day labour	29= can read and write
	13 = Permanent Labour	15 = Father and Mother of adolescent girls 16 =Others	13 = Live abroad	30= Nursery class
			14 = Fisher man	31= Not yet school aged

Question No.	Question	Code
4.	Continuously how long are you living in this area:	(Code: ----- years, 99 = Always, 88 = Guest) (if less than 1 year write 1)
5.	Where did you live before coming here?	(Code: 1 = Big town, 2 = Small sub town, 3 = Village, 4 = Always living here)

**Household Income Expenditure Related Information**

6. Household Monthly Expenditure (As per following head of expenditure

Code	Head of Expenditure	Amount (Taka)	Code	Head of Expenditure	Amount (Taka)	Code	Head of Expenditure	Amount (Taka)
1	Food (If rice own land is eaten that price will also be included)		4	Transportation		7	Agriculture work	
2	Education		5	Living Exp. Dress		8	Others	
3	Medicine		6					

Note: Living exp. Should include, Electricity, Gas, Water bills if living in own house than yearly repair expenses would be converted in monthly expenses and the into count.

7.	Monthly household total	-----Taka						
8.	Is any member of your house is indebt?	(Code: 1 = Yes, 2 = No) (If no skip question no 9)						

9. If indebted, where from did you borrowed money?

Sl No.	Name of Organization	Amount of Money borrowed (Tk)	Reason of borrowing	Sl No.	Name of Organization	Amount of Money borrowed (Tk)	Reason of borrowing
.....				3.			

Organization: 1= BRAC, 2= Krishi bank, 3= Sonali bank, 4 = Agrani bank, 5= Janata bank, 6=Rupali bank, 7 = Grameen bank, 8= Asha, 9= Uddipan, 10 = Prashika, 11= Popy, 12 = Person, 13= Money lender, 14= Others -----, Reason of borrowing: 1= Family needs, 2=Agriculture work, 3= House building/ repair, 4=Education expenses, 5= Treatment exp., 6= Daughter marriage, 7= Marriage gift, 8=Others -----

10. If you have the following land property please mention?

Code	Land Type / Land Use	Amount of Land (Decimal)	Ownership	Price
1.	Living House			
2.	Other house			
3.	Land for building house			
4.	Cultivable land			
5.	Share cropping taken			
6.	Share cropping given			
7.	Mortgage given			
8.	Mortgage taken			
9.	Bamboo trees			
10.	Pond/Gher			

Ownership code: 1= Own, 2= Lease given, 3= Lease taken, 4= Govt. Land, 5= Mortgage taken, 6= Mortgage given ( If own land/property than own take price, If Mortgage or Share cropping the amount that has to pay will be the price for that piece of land)

11. Which of the following utensil do your family have?

Radio	Television	Mobile Phone	Land phone	Refrigerator	Almira/Warecube	Table/Chair	Clock	Bicycle	Motor cycle/Tampo
Animal pulled vehicle	Motor boat	Rickshaw/Rickshaw van	Computer	Trucktor/Power Tiller	Hand sewing machine	Paddy Husking Machine	Chowki Khat		

**Agriculture Information**

(A) Fish Production Related Information

12. Do you cultivate fish? (Code: 1 = Yeas, 2 = No) (If no move to question no. 12.2)

12.1 Fish Production Related Information

Pond size (Decimal)	Ownership	Price / Yearly Rent (Taka)	Type of fish cultivated	Yearly production of fish (Kg)	Market price of the produced fish (Tk)	Use of produced fish	
						Own consumption (%)	Sale in market (%)

Ownership code: 1= Own, 2= Lease taken, 3 = Govt., 4 = Lease taken, 5 = Mortgage take; 6 = Others' ..... Type of Produced fish: 1= Ryni, 2 = Kalia, 3 = Pangash, 4 = Thai Maguri, 5 = Silver carp, 6 = Mirgel, 7 = Telapia, 8= Sarputi, 9= Grascarp, 10= Cultivated Koi, 11 = Big Tangra, 12= Others-----

(B) Agriculture Farming Related Information

12.2. What type of land do you have and what type of Agriculture product have you produced in the last year

Name of Land	Amount of Land (Decimal)	Ownership Code			Type of Crop Cultivated			Crop Produced (Kg)			Price of the produced crop (Taka)												
		Season-1	Season-2	Season-3	Season-1	Season-2	Season-3	Season-1	Season-2	Season-3	Season-1	Season-2	Season-3										
														1	2	3	1	2	3	1	2	3	

Name of Land	Amount of Land (Decimal)	Ownership Code			Type of Crop Cultivated			Crop Produced (Kg)			Price of the produced crop (Taka)													
		Season-1	Season-2	Season-3	Season-1	Season-2	Season-3	Season-1	Season-2	Season-3	Season-1	Season-2	Season-3											
														1	2	3	1	2	3	1	2	3		

Ownership code: 1= Own, 2= Lease given, 3 = Lease taken, 4 = Govt., 5 = Mortgage taken, 6 = Mortgage given; 7 = Others' ..... Type of crop produced code: 1= IRR/BORO, 2 = Aush, 3 = Aman, Wheat, 4 = Jute, 5 = Sugar cane, 6 = Mustard, 7 = Brinjal, 8 = Chili, 9= Dhania, 10= Bhutta, 11= Tamak, 12= Mula, 13= Potato, 14= Onion, 15= Garlic, 16= Cauliflower, 17= Banaja, 18= Mango, 19=Guava, 20= Lichi, 21= Cultivated Kuj, 22= Jack fruit, 23= Dhaincha, 24 = Others' ..... Cultivation Season Code : Season 1= Aush (Chaitra - Vhadro; 15 March - 15 September), Season-2 = Aman (Shaban - Agrahayan; 16 July - 14 December), Season-3 = IRR/BORO (Pash - Baishak; 15 December - 14 May). Note: If lease / Mortgage write annual rent instead of land price. \*\* If land is not cultivated in any specific season then put (-)

(C) Domestic Animal Related Information

13. Do you pet any type of domestic animal ?	(Code: 1 = Yes, 2= No) (If answer is no then skip question no. 14)
14. At present do you have the following domestic animals in your house?	

Type of Animal (See animal code)	Ownership	No. Of animal/Bird	Market price of the Animal /Bird	Use of Animal / Bird	
				Price of Own consumed animals/Birds or their by product (e.g. Milk, Egg, Animal or Bird)	Price of sold animals/Birds or their by product (e.g. Milk, Egg, Animal or Bird)

Type of Animal Code : 1 = Cow, 2 =Goat, 3=Lamb, 4 = Buffalo, 5 = Hen/Cock, 6 = Duck, 7 = Pigion, 8 = Pig, 9 = Horse, 10 = Others' ..... Ownership code: 1= Own, 2= Lease given, 3 = Lease taken, 4 Others' -----

15. Do you produce different types of vegetables in your home yard?	(Code: 1 = Yes, 2= No) (If answer is no then skip question no. 17)
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16. What type of vegetable do you produced in your home yard and what do you do with those?

Fruits/Vegetables (Code)	Name of Fruits/Vegetables	Quantity	Unit (Code)	Use of the produced	Fruits/Vegetables (Code)	Name of Fruits/Vegetables	Quantity	Unit (Code)	Use of the produced															
										1	2	3	5											

Use Code: 1= Only weconsume, 2= Some we consume and some sale in the market, 3= Sole produced on the commercial basis Unit Code: 1 = kg, 2= Gram, 3= Haili, 4= Ganda, 5= One piece, 6= Sher, 7= Chatak

## FOOD Security

Question No.	Question	Code	Answer
17.	Do you ever face food shortage in your family ?	(Code: 1= Never ever, 2= Sometimes, 3= Often/Always) (If answer is 1 then skip from question no. 18 to 24))	
18.	Did you had to eat food less (less than three times a day) due to shortage of food ?	(Code: 1= Always/Often, 2= Some times, 3= Never ever, 4= Others-----)	
19.	Do you remain anxious about what you will eat in the next meal?	(Code: 1= Always/Often, 2= Some times, 3= Never ever, 4= Not applicable, 5= Others)	
20.	Do you face this food shortage in any specific time of the year?	(Code: 1 = Yes, 2= No)	
21.	Do you have to borrow food from your neighbour ?	(Code: 1= Always/Often, 2= Some times, 3= Never ever)	
22.	Do you feel that all member of the family is not getting balance food?	(Code: 1= Always/Often, 2= Some times, 3= Never ever, 4= Others-----)	
23.	Do the child have/had to eat less food (Less than three times a day)?	(Code: 1= Always/Often, 2= Some times, 3= Never ever, 4= Others-----)	
24.	How long the children are it eating less food (Less than three times a day)?	----- Days; 99 = Not applicable	

25.	Do you have the idea of producing seasonal vegetables in the small piece of land in home staeed ?	(Code: 1 = Yes, 2= No, 3 = Don't know)	
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26. Which month of the year is difficult to pass life? ( Put √ symbol)

Baishak 14 April-14 May	Joishtha%Rc 15 May-14 June	Ashar 15 June-15 July	Sraban 16 July-15 Aug.	Bhadra 16 Aug-15 Sept	Ashin 16 Sept.-15 Oct.	Kartik 16 Oct. 15 Nov.	Agrahayan 15 Nov.- 14 Dec.	Posh 15 Dec.-13 Jan.	Magh 14 Jan.- 12 Feb.	Falgun 13 Feb.-14 March	Chaitra 15 March-13 April
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## Household Food Habit and Food Consumption

27. How many times (Last one week) did you eat the following foods in the breakfast, Lunch and Dinner? If not eaten put (-) symbol

Food Group	Energy giving food					Body building food					Body protecting food...				
	Rice	Maize	Braed	Pulses	Fish	Meat	Egg	Milk	Milk product	L-Veg.	Vegetables	Fruits			
Food time															
Morning															
Noon															
Night															

28. Assessment of Household Members Nutritional Condition (Blood Glucose Level)

MID	Household Members name	Body Measurement		Blood glucose ( mmol/L) (Applicable for individual of age ≥ 40 years of age male/female)	Blood Haemoglobin (mmol/L) (Applicable for individual of age 13-39+ years of age female)	%Re tvmgwK cixiv (Biochemical parameter) Is 5 ml blood sample is collected ? (1= Yes, 2 = No)	Is urine sanmple collected ? (1= Yes, 2 = No) (Collect urine for children < 5 yrs and women ≥ 45 yrs)
		Weight (kg)	Height (cm)				

**29. Clinical Data Collection Form Household No**

Clinical Signs		Member Code→									
		All members of the family (if present put 1 otherwise 0)									
		1	2	3	4	5	6	7	8	9	10
Hair	Discolored (P-1)										
	Sparse (P-2)										
Eyes	Night blindness (P-3)										
	Bitot's spot (P-4)										
	Conjunctival xerosis (P-5)										
	Corneal xerosis (P-6)										
	Keratomalacia (P-7)										
	Pallor (P-8)										
Lips	Angular stomatitis (P-9)										
	Angular scars (P-10)										
	Cheilosis (P-11)										
Gums	Bleeding gums (P-12)										
	Swollen red papillae (P-13)										
Tongue	Smooth (P-14)										
Gland	Enlarged thyroid (P-15)										
	Flakypaint dermatosis (P-16)										
Skin	Follicular hyperkeratosis (P-17)										
	Koilonychia (P-18)										
Nail	Cratio tabes (P-19)										
	Epiphyseal enlargement (P-20)										
Skeletal	Knock knee/ Bow leg (P-21)										
	Kwashiorkor (P-22)										
Lin and Thin	Marasmus (P-23)										
	Others										

**30.1. What different types of food do you consume in different seasons of the year (Rice/Wheat/Maize/Leafy veg./Vegetables/Fruits/ Fish/Meat)**

Food Code	Name of Food	Local name of the food	Source of food	In which season of the year it is available	Which part of the food do you eat	When available how many times in a week do you eat (Some times =8)	Quantity eaten unit 1= Kg, 2= No, 3= Liter	In what quantity do you buy (amount)	Price (Per kg/No./Liter)	Who in the family generally eat	Do you think this food has any specific benefit?

Source Code: 1 = Home production, 2 = Collected, 3 = Cultivated in own land, 4= Produced in home stead, 5= Purchased from Market, 6= Hunting  
 Season Code: 1 = Winter, (15 Nov. - 14 March), 2 = Summer (15 March. - 14 June), 3 = Rainy season (15 June - 16 Sept.), 4 = Round the year (14 April – 13 April nest year)  
 Part of the Food (Code) : 1 = Leaf, 2 = Leaf and Stem, 3 = Stem, 4 = Root, 5 = Whole part  
 Family members generally eat (Code) : 1 = All member in the family, 2 = Only adult Member, 3 = Only children, 4 = Old members  
 Special Properties of Food (Code) : 1 =Yes, 2=No, 3 = More nutritious, 4 = Has Medicinal value (Write the property spell out), 5 = Don't Know

**30.2. What different types of food do you consume in different seasons of the year (Rice/Wheat/Maize/Leafy veg./Vegetables/Fruits/ Fish/Meat) Household No.**

Food Code	Name of Food	Local name of the food	Source of food	In which season of the year it is available	Which part of the food do you eat	When available how many times in a week do you eat (Some times =8)	Quantity eaten unit 1=Kg, 2=No, 3= Liter	In what quantity do you buy (amount)	Price (Per kg/No./Liter)	Who in the family generally eat	Do you think this food has any specific benefit?

Source Code: 1 = Home production, 2 = Collected, 3 = Cultivated in own land, 4= Produced in home stead, 5= Purchased from Market, 6= Hunting  
 Season Code: 1 = Winter, (15 Nov. - 14 March), 2 = Summer (15 March. - 14 June), 3 = Rainy season (15 June - 16 Sept.), 4 = Round the year (14 April – 13 April nest year)  
 Part of the Food (Code) : 1 = Leaf, 2 = Leaf and Stem, 3 = Stem, 4 = Root, 5 = Whole part  
 Family members generally eat (Code) : 1 = All member in the family, 2 = Only adult Member, 3 = Only children, 4 = Old members  
 Special Properties of Food (Code) : 1 =Yes, 2=No, 3 = More nutritious, 4 = Has Medicinal value (Write the property spell out), 5 = Don't Know

**30.3. What different types of food do you consume in different seasons of the year (Rice/Wheat/Maize/Leafy veg./Vegetables/Fruits/ Fish/Meat) Household No.**

Food Code	Name of Food	Local name of the food	Source of food	In which season of the year it is available	Which part of the food do you eat	When available how many times in a week do you eat (Some times=8)	Quantity eaten unit 1=Kg, 2=No, 3= Liter	In what quantity do you buy (amount)	Price (Per kg/No./Liter)	Who in the family generally eat	Do you think this food has any specific benefit?

Source Code: 1 = Home production, 2 = Collected, 3 = Cultivated in own land, 4= Produced in home stead, 5= Purchased from Market, 6= Hunting  
 Season Code: 1 = Winter, (15 Nov. - 14 March), 2 = Summer (15 March. - 14 June), 3 = Rainy season (15 June - 16 Sept.), 4 = Round the year (14 April – 13 April nest year)  
 Part of the Food (Code) : 1 = Leaf, 2 = Leaf and Stem, 3 = Stem, 4 = Root, 5 = Whole part  
 Family members generally eat (Code) : 1 = All member in the family, 2 = Only adult Member, 3 = Only children, 4 = Old members  
 Special Properties of Food (Code) : 1 =Yes, 2=No, 3 = More nutritious, 4 = Has Medicinal value (Write the property spell out), 5 = Don't Know

31. Household Food Consumption in last 24 hours

A.E.

C.U.

Household No.

Time of food consumption and Consumed Food	Name of Food		Ingredients used in food preparation	Amount of Food Consumed (gm)		To be filled in the office	
	Menu Code			Cooked Weight	As purchased from market	Food Code (HKI)	Dressed weight of food (gm)
<u>Morning Food</u>							
	No. Of person eaten						
	≤ 12 years ----- No.						
> 12 years ----- No.							
	No. Of person eaten						
	≤ 12 years ----- No.						
> 12 years ----- No.							
<u>Time of food consumption and Consumed Food</u>							
<u>Noon Food</u>							
<u>Night Food</u>							
<u>No. Of person eaten</u>							
	≤ 12 years ----- No.						
	> 12 years ----- No.						
<u>Food eaten at other times</u>							
<u>No. Of person eaten</u>							
	≤ 12 years ----- No.						
	> 12 years ----- No.						
<u>Excess Food at night</u>							

32. Individual Food Consumption in last 24 hours

Household No

Question No.		Question	Type of Residence	Code	Answer
33.		What is the arrangement of lighting in the house?		(Code: 1= Kerosin light, 2= Electric light, 3=1+2, 4 = Solar light, 5= Generator light)	
34.		How many rooms are there in the house?	_____ No.		
35.		What is the roof materials?		(Code: 1 = bamboo fencing/palm leaf/bamboo, 2= Tin, 3= concrete, 4= Taly, 5= Others-----)	
36.		What is the type of man materials of the house wall?		(Code: 1 = bamboo fencing/palm leaf/bamboo, 2= Tin, 3= concrete, 4= Taly, 5= Others-----)	
37.		What is the type of man materials of the house floor?		(Code: 1= Wood, 2= Bamboo, 3=Concrete, 4= Ceramic tiles, 5= Clay, 6= Others-----)	
38.		Number of bed rooms are there in the house?	----- No.		
39.		Do you have kitchen?	(Code: 1= Yes, 2= No)		
40.		If no, where do you cook?	(Code: 1= Open space, 2= Share with others, 3= In the living room, 4= Not applicable, 5= Others---		
41.		What type of fuel do you use for cook?	(Code: 1= LPG, 2= Natural gas, 3= Kerosene, 4= Wood, 5= Kharkuta, 5= Others'-----)		
42.		What type of burner do you use for cook?	(Code: 1= Natural gas burner, 2= Kerosene burner, 3= Wood burner, 4= LPG, 5= Friend burner, 6= Electric burner, 7 = Others-----)		
43.		Do you have separate bathroom in your house?	(Code: 1= Yes, 2=No)		
44.		At present what type of light do you use for lighting the house?	(Code: 1 = Kupa, 2 = haricane, 3= Candle, 4 = Solar light, 5= generator light, 6 = Bio gas light, 7 = REB light, 8= Others		
45.		Every day in the evening for how many hours do you need light?	(Code: 1= 2 hours, 2 = 4 hours, 3 = 6 hours, 4= More than six hours )		

Member Identification No. (MID) -		Food time		Member Identification No. (MID) -		Food time	
Menu Code	Amount of food eaten (gm)	To be filled in the office		Mnu Code	Amount of food eaten (gm)	To be filled in the office	
		Food Code (HKI)	Dressed weight of food (gm)			Food Code (HKI)	Dressed weight of food (gm)
		Name of ingredients		Name of ingredients			



**SECTION-B: LIFESTYLE AND DEMOGRAPHIC INFORMATION**

**Life Style**

Question No.	Question	Code	Answer
46.	For how many hours do you need light for the following works?	NNNNNNNNNNNNNNNNNNNNNNNNNNNNNN Hours	
47.	a) For cooking how many hours do you need one light? b) For reading how many hours do you need one light? c) For eating how many hours do you need one light? d) In your living room for how many hours do you need one light? e) In your wash room for how many hours do you need one light? f) In outside varanda for how many hours do you need one light? g) For other works how many hours do you need one light? Approximately by how many Taka would you like to buy a solar power light?	NNNNNNNNNNNNNNNNNNNNNNNNNNNNNN Hours NNNNNNNNNNNNNNNNNNNNNNNNNNNNNN Hours NNNNNNNNNNNNNNNNNNNNNNNNNNNNNN Hours NNNNNNNNNNNNNNNNNNNNNNNNNNNNNN Hours NNNNNNNNNNNNNNNNNNNNNNNNNNNNNN Hours NNNNNNNNNNNNNNNNNNNNNNNNNNNNNN Hours Code: 1= With 2000 taka one light, 2 wt. 4 hours, 2 = Within 5000 taka 2 light 2 wt 4 hours & one mobile phone charger , 3 = Within 10,000 taka 3 light 2 wt 4 hours & one mobile phone charger, 4= Not interested for solar system (Code: 1= Yes, 2= No)	
48.		NNNNNNNNNNNNNNNNNNNNNNNNNNNNNN Hours Code: 1= With 2000 taka one light, 2 wt. 4 hours, 2 = Within 5000 taka 2 light 2 wt 4 hours & one mobile phone charger , 3 = Within 10,000 taka 3 light 2 wt 4 hours & one mobile phone charger, 4= Not interested for solar system (Code: 1= Yes, 2= No)	
49.	Are you interested to use solar system for watching color TV, CD/DVD & charging more than one mobile	(Code: 1= Yes, 2= No)	
50.	Are you interested to invest 60,000 to 80,000 taka for the use of above mentioned utensils?	(Code: 1= Yes, 2= No)	
51.	Are you interested to use solar system for the following business? a) Arrangement for charging 20 mobiles at a time b) To operate fan and light in small shop? c) For charging battery for different use? d) To operate a freez for cooling water in the shop? e) To show movie by color TV, CD/DVD?	(Code: 1= Yes, 2= No) (Code: 1= Yes, 2= No) (Code: 1= Yes, 2= No) (Code: 1= Yes, 2= No) (Code: 1= Yes, 2= No) (Code: 1= Yes, 2= No)	
52.	How many Taka do you have to spent if you use Kupa or harcan or candle for lighting the house in the evening?	(Code: 1= Yes, 2= No ----- Taka	
53.	How many times in a year the price of kerosene oil fluctuates?	(Code: 1 = One or two times, 2 = Three or four times, 3 = Not fixed	

**Cleanliness**

Question No.	Question	Code	Answer
54.	How clean is inside the house (write as you observe) ?	(Code: 1= Clean, 2= Dirty, 3= damp and unclean, 4= Clean but damp)	
55.	How clean is the home stead (write as you observe) ?	(Code: 1= Clean, 2= Dirty, 3= damp and unclean, 4= Clean but damp)	
56.	Whether all members of the house use sandles?	(Code: 1= Yes, 2= No)	
57.	Do they use shoe/sandle while going to dirty place?	(Code: 1= Yes, 2= No)	
58.	Ownership of latrine?	(Code: 1= Personal/Own, 2= Govt. / NGO, 3= Share with others, 4= Open space, 5= Others -----)	
59.	How many person do use the latrine?	(Code: 99= if use more than 9 persons, 99= Don't know exactly, Write exact no. if less than nine persons	
60.	Where does the children less than 5 years defecates?	(Code: 1= In latrine, 2= In open/hanging latrine, 3= Definite whole, well / Chart, sanitary/Slab), 5= Open space, 6= Beside the drain, 7= Not applicable, 8= Others -----)	
61.	What do you do when the children defecate in open space?	(Code: 1= Remove the stool, 2= Kept as it is and dog clean it by eating. -----) ----- ----- 3= Others -----	

### Information Related to Smoking

Question No.	Question	Code	Answer
62.	Do any one of your house smokes?	(Code: 1= nu'v, 2= bv, 3= Rvwbbv ) (if answer is no then skip question no. 62 to 65)	
63.	If yes, Who smokes?	(Code: 1= Myself, 2= Husband, 3= Son, 4= Husband & son, 5= Aall member of the family, 6 = Not applicable, 7 = Others Code: 1=Hukka, 2= Cigarette, 3= Biri, 4= Gul, 5= Others .....	
64.	What type of smoke do you use?	(Code: 1= Normal (2-3 times), 2= Moderate (5-10 times), 3= Too much (>15 times) 4= Others .....	
65.	Those who smokes how frequent is that?	(Code: 1= Every one follow regularly, 2= All members abide irregularly, 3= Some one follows, 4= Myself and husband regularly abide by, 5= None follows, 7= Others .....	
66.	Do all members of your family abide the religion rules?		

### Wife's Income and Expenditure (Applicable for all households)

Question No.	Question	Code	Answer
67.	Did you do any other works except household works?	(Code: 1= Yes, 2= No)	
68.	Did you do any other income earning works in the last seven days?	(Code: 1= Yes, 2= No)	
69.	Did you do any other income earning works in the last one year?	(Code: 1= Yes, 2= No) (if answer is no then skip question no. 70 to 73)	
70.	What type work you usually do?	(Code: Use occupation code from page no. 3)	
71.	Do you work all the days in a year?	(Code: 1=Work whole the year, 2= Work seasonally, 3= Do some times)	
72.	How do your employer pay you?	(Code: 1= Cash 2= cash & by materials, 3= By materials, 4= Don't get any money)	
73.	How takes decision that how your earnings will be spend?	(Code: 1=Both of us, 2= Husband, 3= Other members, 4= Earner and other person, 5= Myself, 6 = Not applicable)	
74.	Who takes decision about your health care?	(Code: 1=Both of us, 2= Husband, 3= Other members, 4= Earner and other person, 5= Not applicable)	
75.	Who takes decision about the big purchase of the house?	(Code: 1=Both of us, 2= Husband, 3= Other members, 4= Earner and other person, 5= Myself, 6 = Not applicable)	
76.	Who takes decisions about the daily purchase of your house?	(Code: 1=Both of us, 2= Husband, 3= Other members, 4= Earner and other person, 5= Myself, 6 = Not applicable)	
77.	Who takes decision about the child care of the house?	(Code: 1=Both of us, 2= Husband, 3= Other members, 4= Earner and other person, 5= Myself, 6 = Not applicable)	
78.	When you go to health center or hospitals then who accompany you?	(Code: 1= Myself alone, 2= Husband, 4= Go with younger children, 5=Others.....)	
79.	Can you go to health center or Hospitals alone or with the children?	(Code: 1= Yes, 2= No)	

### Information Awareness (Applicable for all households)

Question No.	Question	Code	Answer
80.	Do you read news paper?	(Code: 1= Yes, 2= No, 3= Regularly read, 4= Aleast read once a week, 5= Read less than three days a week)	
81.	Do you keep news paper and all the members of the household read?	(Code: 1= Keep and members read, 2= Yes keep but most of the members do not read, 3= don't keep, 4= News paper is not available here, 5= News paper is costly so don't buy)	
82.	Do you listen radio?	(Code: 1= Yes, 2= No, 3= Listen every day, 4= listen at least once a week, 5= Listen more than one day a week?	
83.	Do you watch Television?	(Code: 1= Yes, 2= No, 3= Watch every day, 4= watch at least once a week, 5= Watch some times; 6= Watch more than once a week)	
84.	When you watch TV which channel do you watch most?	(Code: 1= BTV, 4= Channel I, 5= ntv, 6= Rtv, 7= ATN Bangla, 8= ETV, 9= Baisakhii, 10= Desh TV, Mytv, 12= Indian Channel, 13= Foreign Channel, 14 = Diganata Tv)	11=
85.	In your opinion for the exchange of information which media is easiest?	(Code: 1= Land phone, 2 = Mobile phone, 3 = Letter, 4=None of the previous, 5 = Others .....	
86.	Which media do you use most for the exchange of information?	(Code: 1= Land phone, 2 = Mobile phone, 3 = Letter, 4=None of the previous, 5 = Others .....	

**Social Security and participation in Social Work (Applicable for all households)**

Question No.	Question	Code	Answer
87.	Is your family capable to meet basic needs of life (Food, water, Cloth, Shelter, Education, Health etc.)?	(Code: 1= Yes, 2= No)	
88.	Is any member of the family had to starve due to shortage food in last 30 days?	(Code: 1= Yes, 2= No)	
89.	Do any member of the family had to leave school in last one year due poverty?	(Code: 1= Yes, 2= No, 3= Cann't remember)	
90.	Did any meeting held in last one month to discuss the problem of the local people (eg. Garbage management, Drain cleaning, School repairment)	(Code: 1= Yes, 2= No, 3 = Don't know) (If no skip question no. 92)	
91.	Do you think this type of meeting contribute in the development of the area? if yes, to what extent you are happy?	(Code: 1= Yes, 2= No, 3= So so, 4= Did not comment)	
92.	Do you think religious leaders contributed in the local problem solving? if yes, to what extent you are happy?	(Code: 1= Yes, 2= No, 3= So so, 4= Did not comment)	
93.	Do you think local leaders contributes in solving local problems? if yes, to what extent you are happy?	(Code: 1= Yes, 2= No, 3= So so, 4= Did not comment)	
94.	Do any member of your family participated in any meeting or rally which was organized for local development?	(Code: 1= Yes, 2= No, 3= Did not comment)	
95.	Do you think that if any member of your family gets in problem, your relatives will come forward to help?	(Code: 1= Yes, 2= No, 3= Did not comment)	
96.	Do you think that if any member of your family gets in problem, your neighbour will come forward to help?	(Code: 1= Yes, 2= No, 3= Did not comment)	
97.	In the last six months did any member of your family visited Municipality/Union Parishad for some service?	(Code: 1= Yes, 2= No, 3= Did not comment)	
98.	Do you feel that your Municipality/Union Parishad contribute in the development of your area? if yes, than what type?	(Code: 1= Not good, 2= So so, 3= Some how Good)	

### Domestic Violence (Applicable for all households)

Question No.	Question	Code	Answer
99.	Sometimes a husband is annoyed or angered by things his wife does. Do you think it is justified?	(Code: 1= Yes, 2= No)	
100.	In your opinion is it justified that a husband hit or beat his wife in the following situation? a) If she goes out without telling him? b) If she neglects the children? c) If she argues with him? d) If she refuse to have sex with him? e) If she does not obey elders in the family?	(Code: 1= Yes, 2= No) (Code: 1= Yes, 2= No) (Code: 1= Yes, 2= No) (Code: 1= Yes, 2= No) (Code: 1= Yes, 2= No)	
100a	Did you ever heard that your father beat your mother?	(Code: 1= Yes, 2= No)	
101.	Did you ever saw that your father beat your mother?	(Code: 1= Not applicable, 2= Often used to beat, 3= Sometimes used to beat, 4= Rarely used to beat)	
102.	Do your husband behave with you as under- a) Push, shake or throw something at you? b) Slap you c) Twist your arm or pull your hair? d) Punch you fist with something that could hurt you? e) Kick you, drag or beat you up? f) Try to choke you or burn you on purpose? g) Threaten or attack you with a knife or any other weapon?	(Code: 1= Yes, 2= No) (Code: 1= Yes, 2= No) (Code: 1= Yes, 2= No) (Code: 1= Yes, 2= No) (Code: 1= Yes, 2= No) (Code: 1= Yes, 2= No) (Code: 1= Yes, 2= No)	
103.	Did your husband beat you in the last 12 months?	(Code: 1= Yes, 2= No) (if answer is no than directly ask question 112)	
104.	Why did your husband beat you?	(Code: 1= Without any reason, 2= Due to financial problem, 3= Due to food crisis, 4= Due to jealousy, 5= Due to refuse of having sex, 6= Due to not obeying the elders in the family, 7= Due to ignoring the servant, 8= Going out without asking him, 9= Mistrusted by husband, 10= Due to mistrusted by wife, 11= For Dowry, 12= As I am not bringing money from my family, 13= Not taking care of the children, 14= As the husband is drunker or takes medicine)	
105.	Does your husband still beat you for dowry?	(Code: 1= Yes, 2= No, 3 = Not applicable)	
106.	Does your husband beat you to bring money from your family?	(Code: 1= Yes, 2= No, 3 = Not applicable)	
107.	Does your husband beat you for drinking and taking medicine?	(Code: 1= Yes, 2= No, 3 = Not applicable)	
108.	Did you tell any one that your husband beat you?	(Code: 1= Yes, 2= No, 3 = Not applicable)	
109.	Whom did you tell that your husband beat you?	( Code: 1=Friends, 2= parents , 3=Uncle and aunt , 4= Children, 5= Mother in law, 6= father in law, 7= Both father & mother in laws, 8= Other relatives, 9= Police, 10= Neighbours, 11= NGO workers, 12= Health workers, 13= Imam, 14= Others:.....)	
110.	Those to whom you told, did they helped you?	(Code: 1= Yes, 2= No, 3 = Not applicable)	
111.	What type of help and cooperation did you received from them?	(Code: 1= Neighbour take away the husband, 2= Advised to report to the Police, 3= Advised to file a case against husband, 4 = Others -- .....	

**Daily Activities ( Last 24 hours)**  
(Take information only of the household head and his wife)

**112. Description of the Physical Activities in last 24 Hours Name:**

**Household No.**

**MID No.**

Different Time Period	Description and Type of Activity	Beginning of Activity	End of Sctivity	Activity code	Total time required (Minute)
Fazar ajan-----					
Time of getting up from sleep-----					
Zohar Ajan Time .....					
Asar Ajan Time-----					
Magrib Ajan Time-----					
Dinner Time-----					
Sleeping time-----					

**SECTION-C: NUTRITION AND HEALTH**  
Nutrition Knowledge and Its Practice

**Nutrition Quality of Food Related Information (Applicable for all households)**

Question No.	Question	Code	Answer
113.	Do you think that child should breast fed after birth?	(Code: 1 = Yes, 2 = No, 3 = Don't know)	
114.	After birth when the child should start breast feeding?	(Code: 1 = It is not good to breastfed, 2 = Just less than one hour time, 3 = Just after birth, 4 = Don't know, 5 = Others)	
115.	Should the child fed colostrum just after birth?	(Code: 1 = Yes, 2 = No, 3 = Others)	
116.	Should the child fed other foods just after three days of birth?	(Code: 1 = Yes, 2 = No, 3 = Some times, 4 = Don't know, 5 = Others---)	
117.	Upto what age the child should breastfed?	(Code: 1 = upto ---- months, 99 = It is not good to breastfed, 88 = Others -----)	
118.	What is Balance food ?	(Code : 1 = Rice, Fish/Meat, Veg & Leafy veg/Fruits, 2 = Rice, Fish/Meat/Egg, 3 = Rice, Veg & Leafy veg/Fruits, 4 = Don't know)	
119.	Do every body needs to have balance food ?	(Code: 1 = Yes, 2 = No, 3 = Don't know)	
120.	Does any physical problems arise if balance food is not taken ?	(Code: 1 = Yes, 2 = No, 3 = Don't know)	
121.	What physical problems will arise if balance foods are not taken ?	(Code : 1 = Will suffer from malnutrition, 2 = Feel physical weakness, 3 = Disease will attack, 4 = Don't know, 5 = Others -----)	
122.	What is energy giving foods for the body ?	(Code : 1 = Rice/Bread, 2 = Fish/Meat/Egg, 3 = L. Veg / Vegetables, 4 = Fruits, 5 = Don't know, 6 = Others -----)	
123.	What is body building foods ?	(Code : 1 = Rice/Bread, 2 = Fish/Meat/Egg, 3 = L. Veg / Vegetables, 4 = Fruits, 5 = Don't know, 6 = Others -----)	
124.	What is body protective foods ?	(Code : Rice/Bread, 2 = Fish/Meat/Egg, 3 = L. Veg / Vegetables, 4 = Fruits, 5 = Don't know, 6 = Others -----)	
125.	Does person should eat enough leafy veg and non-leafy vegetables in a whole day ?	(Code: 1 = Yes, 2 = No, 3 = Don't know, 4 = Others -----)	
126.	Do a person should eat sour food ?	(Code: 1 = Yes, 2 = No, 3 = Don't know, 5 = Others -----)	
127.	Among Amlaki/Lemon/Orange, Apple & Mango/Jack fruits which one is vitamin C rich?	(Code: 1 = Amlaki/Lemon/Orange, 2 = Apple, 3 = Mango/Jack fruit, 4 = Don't know)	
128.	Among Potato, Fish/Meat/Egg, Pulses & Leafy veg. And vegetables which is rich source of Iron?	(Code : 1 = Potato, 2 = Fish/Meat, 3 = Pulses, 4 = Leafy and Non leafy veg., 5 = Don't know)	
129.	Regular consumption of which foods will help to maintain desired blood volume?	(Code : 1 = Fodo is expensive, 2 = Leafy & non-Leafy veg, 3 = Fish/Meat/Egg, 4 = Balance food, 5 = Don't know, 6 = Others ---)	
130.	Regular Consumption of which foods will help to maintain desired vitamin A level in the body?	(Code : 1 = Rice/Potato, 2 = Fish/Meat/ Leafy & non-Leafy veg, 3 = Pulses, 4 = Amlaki/Lemon/ Orange, 5 = Don't know, 6 = Others -----)	
131.	Regularly Consumption of which foods will help to maintain desired iodine level in the body?	(Code : 1 = Iodized salt/Sea fish, 2 = Fish/Meat/ Leafy & non-Leafy veg, 3 = Pulses, 4 = Amlaki/Lemon/ Orange, 5 = Don't know, 6 = Others -----)	
132.	Does the pregnant and lactating mothers needs to eat additional amount of Leafy and non-leafy vegetables with their regular food?	(Code: 1 = Yes, 2 = No, 3 = Don't know)	
133.	What is the source of Arsenic?	(Code: 1 = Tube well/Deep tubewell water, 2 = Other foods, 3 = Medicine, 4 = Don't know, 5 = Others-----)	
134.	What happens in the body due to Arsenic?	(Code : 1 = Injury in hands/ feet/ Body, 2 = High blood pressure, 3 = Don't know, 4 = Others -----)	

**Nutrition Knowledge Practice (Applicable for all Households)**

Question No.	Question	Code	Answer
135.	Did you breastfed to your last child after birth?	(Code: 1= Yes, 2 = No, 3 = Not applicable)	
136.	After birth of your last child when did you breastfed?	(Code: Not applicable, 2 = Within less than one hour, 3 = Just after birth, 4 = Others -----)	
137.	Did fed colostrom to your child just after birth?	(Code: 1= Yes, 2 = No, 3 = Not applicable)	
138.	What other liquid food did you gave after three days of birth?	(Code: 1 = Yes, 2 = No, 3 = Some times, 4 = Not applicable, 5 = Others-----)	
139.	Do you eat balance food ?	(Code: 1= Yes, 2 = No, 3 = Don't know)	
140.	Do you eat energy giving foods ?	(Code: 1= Yes, 2 = No, 3 = Don't know)	
141.	Do you eat body building foods ?	(Code: 1= Yes, 2 = No, 3 = Don't know)	
142.	Do you eat body orntecting foods ?	(Code : 1 = Rice/Bread, 2 = Fish/Meat/Egg, 3 = Leafy & non-leafy vegetables, 4 = Don't know, 5 = Others-----)	
143.	Do you eat sour food ?	(Code: 1= Yes, 2 = No, 3 = Some times)	
144.	What food do you eat regularly so that body blood volume does not reduce ?	(Code : 1 = Too expensive foods ; 2 = Leafy & non-leafy vegetables/Fruits ; 3 = Rice, Fish, Egg, Milk ; 4 = Don't eat any thing, 5 = Don't know, 6 = Others -----)	
145.	What food do you eat as rich source of vitamin A ?	(Code : 1 = Rice/Potato, 2 = Fish/Meat/ Leafy & non-leafy vegetables, 3 = Pulses, 4 = Amilaki/Lemon/Orange, 5 = Don't know, 6 = Others -----)	
Question No.	Question	Code	Answer
146.	Not to be iodine deficient what food do you eat ?	(Code : 1 = Iodized salt/Sea fish, 2 = Fish/Meat/ Leafy & non-Leafy veg, 3 =Pulses, 4 = Amlaki/Lemon/ Orange, 5 = Don't know, 6 = Others -----)	
147.	Do you eat enough Leafy & non-leafy vegetables ?	(Code: 1= Yes, 2 = No, 3 = Some times, 4 = Others -----)	
148.	Among the foods Potao, Fish/Meat, Pulses & Leafy & non-leafy vegetables which food do you eat as rich source of iron ?	(Code : 1 = Potato, 2 = Fish/Meat, 3 = Pulses, 4 = Leafy & non-Leafy veg, 5 = Don't know)	
149.	When you have been pregnant or lactating did you eat more Leafy & non-leafy vegetables, fruits along with regular food ?	(Code: 1= Yes, 2 = No, 3 = Eaten some times, 4 = Not applicable, 5 = Others -----)	

### Knowledge on Household Cooking and Cleanliness (Applicable for all Households)

Question No.	Question	Code	Answer
150.	Do you think that the hand should be properly cleaned before cooking?	(Code: 1= Yes, 2 = No, 3 = Some times, 4 = Others.....)	
151.	Is there any need to clean enough the cooking utensils?	(Code: 1= Yes, 2 = No, 3 = Some times, 4 = Others.....)	
152.	Should gruel be discarded during rice cooking?	(Code: 1= Yes, 2 = No, 3 = Don't know/Don't understand)	
153.	How vegetables need to be cleaned before cook?	(Code: 1 = Cut into small pieces & then wash in water, 2 = Wash whole first & then cut into small pieces, 3 = Both 1 and 2 should practice, 4 = Others .....	
154.	On boiling the vegetables and leafy vegetables in water, should one discard water?	(Code: 1= Yes, 2 = No, 3 = Don't know/Don't understand)	
155.	Is it right to put lid on the pot while cooking vegetables and leafy vegetables ?	(Code: 1 = Yes, 2 = No, 3 = Don't know/Don't understand)	
156.	Is there need to add cooking oil during cooking vegetables and leafy vegetables ?	(Code: 1= Yes, 2 = No, 3 = Some times, 4= Don't know, 5 = Others .....	
157.	What type of salt should be used during cooking ?	(Code : 1= Packet/Iodized salt, 2 = Open salt, 3 = Both, 4 = Others .....	
158.	How salt should be kept at house ?	(Code : 1 = Open, 2 = In a pot having lid, 3 = In a open pot, 4 = In the packet at which salt is available)	
159.	After cooking where it is right to eat food ?	(Code: 1 = In Kitchen, 2 = In court yard on a mat, 3 = Sitting on chowki/ Table/Chair/Bench)	
160.	Is there any need to wash hand before having food?	(Code: 1 = Always should wash hand, 2 = If hand is clean no need to wash, 3 = never to wash, 4, 5 = No need, 6 = Others .....	
161.	Is there any need to keep the food covered after cooking?	(Code: 1= Yes, 2 = No, 3 = Some times, 4= No need, 5 = Others .....	
162.	Is it right to eat stale food or uncovered food?	(Code: 1= Yes, 2 = No, 3 = Some times can be eaten, 4= Others .....	



### Cooking and Cleanliness Related Practices (Applicable for all households)

Question No.	Question	Code	Answer
163.	Do you washwell your hands before cooking?	(Code: 1= Yes, 2 = No, 3 = Some times, 4= Others )	
164.	Do you wash well cooking utensils before cooking?	(Code: 1= Yes, 2 = No, 3 = Some times, 4= Others )	
165.	Do you discard gruel during cooking rice?	(Code: 1= Yes, 2 = No, 3 = Some times discard, 4= Others )	
166.	How do you clean vegetables and leafy vegetables before cooking?	(Code: 1 = Cut into small pieces & then wash in water, 2 = Wash whole first & then cut into small pieces, 3 = Both 1 and 2 should practice, 4 = Others )	
167.	Do you discard gruel while cooking rice?	(Code: 1= Yes, 2 = No, 3 = Some times)	
168.	Do you add cooking oil during cooking of vegetables and leafy vegetables ?	(Code: 1= Yes, 2 = No, 3 = Some times)	
169.	During cooking do you cover the cooking pot with lid?	(Code: 1= Yes, 2 = No, 3 = Some times)	
170.	What type of salt do you use during cooking ?	(Code : 1= Packed/Iodized salt, 2 = Open salt)	
171.	How do you preserved salt at home ?	(Code : 1 = Keep Open, 2 = Keep in a pot having lid., 3 = Keep in a open pot, 4 = Keep in the packet at which salt is available)	
172.	Do you eat open or stale food?	(Code: 1= Yes, 2 = No, 3 = Some times, 4 = Others )	
173.	Do you keep your food covered after cooking?	(Code: 1= Yes, 2 = No, 3 = Some times, 4= Others )	
174.	Do you wash your hand well before eating?	(Code: 1 = Every body always wash hand, 2 = Do not wash hand if it is clean, 3 = Childrens some times dont wash hands, 3 = Some elders don't wash hands, 4 = Others )	
175.	Where do you eat after cooking ?	(Code: 1 = In Kitchen, 2 = In court yard on a mat, 3 = Sitting on chowki./Table/Chair/Bench, 4 = Others )	

### Water Source and Its Purification

Question No.	Question	Code	Answer
176.	What is the main source of your drinking water?	(Code: 1 = Tape/Tube well, 2 = Well, 3 = Pond/Ditch, 4 = River/Canal, 5 = Fountain, 5 = Bottle water, 5 = Boiling Pond/River water after boiling, 6 = Others )	
177.	Who is the owner of your main source to drinking water?	Code: 1= Personal/Own, 2 = Govt./NGO, 3 = Others owner	
178.	What is the distance of drinking water from the kitchen?	_____ feet.	
Question No.	Question	Code	Answer
179.	What is the source of cooking and utensils (Plate, Pan etc) washing water?	(Code: 1 = Tape/Tube well, 2 = Well, 3 = Pond/Ditch, 4 = River/Canal)	
180.	Who is the owner of the source of cooking and utensils (Plate, Pan etc) washing water?	Code: 1= Personal/Own, 2 = Govt./NGO, 3 = Others owner	
181.	What is the distance of source of cooking and utensils (Plate, Pan etc) washing water from the kitchen?	_____ feet.	
182.	How do you purify water before drinking?	(Code: 1 = Boil for _____ minute, 44= Use water purifying tablet, 55 = Use Filter, 66 = By filter, 77 = Don't purify, 88 =Use Tape/Tube well water so don't boil	
183.	Is the tubewell water you use for drinking is free from arsenic?	(Code: 1= Yes, 2 = No, 3 = It is not decided yet, 4 = Not applicable)	

## Household Health Cociusness

### Household Garbage Disposal

Question No.	Question	Code	Answer
184.	When do you dispose your household garbage?	(Code: 1 = Specific ditch/Place, 2 = Open space beside house, 3 = Here & there, 4 = Others)	
185.	Where do the adolescent and women of the household take bath?	(Code: 1 = Pond, 2 = Canal/River, 3 = Bathroom/Tubewell, 4 = Water ditch)	
186.	What type of latrine do the members of the household use?	(Code: 1 = No Latrine, 2 = Open/Hanging latrine, 3 = Specific ditch/Well/Chari, 4 = Healthy (Sanitary/Slab) Latrine, 5 = Others)	

### Information about Old Members of the Households (Ask any members of the household age > 60 years)

Question No.	Question	Code	Answer
187.	Presently what type of food do you like most?	(Code: Leafy veg., 2 = Vegetables, 3 = Fish, 4 = Meat, 6 = Sweet foods, 7 = Fruits, 8 = Others)	8
188.	Which of the following factors do you consider most while choosing foods (Mention the response of the interviewee)	Nutritious and Tasty	Tasty and availability of nutritious
189.	Can you eat food as per your choice?	(Code: 1 = Yes, 2 = No, 3 = Some times) (If yes skip question no. 191)	Tasty, Availability of food & Nutritious
190.	If not, then why cannot eat?	(Code: 1 = Cannot afford, 2 = Can't digest, 3 = don't feel to eat, 4 = Always don't eat food, 5 = Teeth problem, 6 = Like other foods, 7 = cannot eat food, 8 = Loneliness, 9 = 2+5, 10 = 2+3+5, 11 = 2+3, 12 = 3+5, 13 = 3+5, 14 = 3+5+7, 15 = 6+1, 16 = 2+4+5+7, 17 = 3+2+5+6+8, 18 = Not applicable)	
191.	Which food do you like most?	(Write name of food )	
192.	With whom do you live?	(Code: 1 = Wife & children, 2 = With son, 3 = With daughter, 4 = Live alone, 5 = Others)	
193.	Cleanliness (Interviewer Observe and write)		
194.	1 Is nail clean? 2 Is feet clean? 3 Is teeth clean? Do you have baily pain?	(Code: 1 = Yes, 2 = No, (Code: 1 = Yes, 2 = No, (Code: 1 = Yes, 2 = No, (Code: 1 = Yes, 2 = No, 3 = Have gastric, 4 = Baly remain upset, 5 = Most of the time baily remain upset, 6 = Others )	
195.	If ther is baily problem, then what problem is taht?	(Code: 1 = Yes, 2 = No, 3 = Have gastric, 4 = Baly remain upset, 5 = Most of the time baily remain upset, 6 = Others )	
196.	Do you have high or low blood pressure?	(Code: 1 = Yes, 2 = No, 3 = have high blood pressure, 4 = have low blood pressure)	
197.	Did you smoke before?	(Code: 1 = Yes, 2 = No)	
198.	Do you still smoke?	(Code: 1 = Yes, 2 = No)	
199.	If yes then how many stick do you smoke in a day?	(Code: 1 = 10 Nos., 2 = 20 Nos., 3 = More than 20 Nos., 4 = Not applicable)	
200.	if you take Hukka than how frequent is that?	(Code: 1 = 10 Nos., 2 = 15 Nos., 3 = More than 15 Nos., 4 = Not applicable)	
201.	Do you take Jarda with Pan ?	(Code: 1 = Yes, 2 = No, 3 = Don't lae pan)	
202.	Do you have the following diseases (read out the disease name) (Take maximum three responses)	(Code: 1 = Diabetes, 2 = Heart probim, 3 = Kidney problem, 4 = Urine problem, 6 = Bone decay probim, 7 = Pain in knee, 8 = Brokile Asthma, 9 = Teeth problem, 10 = Peptic ulcer, 11 = Digestion problem, 12 = Hazy vision, 13 = Hearing problem, 14 = Gastric, 15 = 1 + 2, 16, 17 = 1+2+3, 18 = thers )	
203.	Wher do you go for seeking treatment?	(Code: 1 = Household Physician, 2 = Govt. Hospital, 3 = Non Govt. Hospital, medicine from Pharmacy, 5 = 1+2, 6 = 1+3, 7 = Community clinic)	4 = By
204.	Among the type of work mention below, which you do every day and for how long?		
205.	Agri. work	Household	
	Drive Rickshaw/Van	Work	
	Child care	Morn/Even. walk	
	Cook	Work	
	Excercise		
	Time (Minute)		

**Child Care. (Only get information from the Household having children ≤5 years, Ask mother or in her absence care giver) (Incase household don't have the children ≤5 years skip question no. 206 to 225)**

**Breast feeding**

Question No.	Question	Code	Answer
206.	Did you fed colostrum to your baby just after birth?	(Code: 1 = Yes, 2 = No, 3 = Not applicable)	
207.	If colostrum not given than why?	(Code: 1 = Discarded as per advice or elders, 2 = As color different did not fed, 3 = Not applicable, 4 = Mother was sick so did not fed, 5 = Baby was sick, 8 = Others )	
208.	Did you gave your baby any other liquid after three days of his/her birth?	(Code: 1 = Yes, 2 = No, 3 = can't remember, 4 = Not applicable)	
209.	If you gave liquid foods, than what was that?	(Code: 1 = Milk other than breast milk, 2 = Plain water, 3 = Sugar/Glucose water, 4 = Fruit juice, 5 = Water mixed with sugar & salt, 6 = Tin food, 7 = Honey, 8 = Not applicable, 9 = Cow milk, 10 = Others )	
210.	How long did you fed only breast milk?	(Code: 1 = Less than six month, 2 = Six months, 3 = More than six months, 4 = Upto two years, 5 = As per desire of the child)	
211.	Did you ate enough while you breast feeding you baby?	(Code: 1 = Yes, 2 = No)	
212.	Did you maintain cleanliness before and after Breast feeding?	(Code: 1 = Yes, 2 = No)	
213.	Did you gave complementary feeding to your child while breast feeding?	(Code: 1 = yes, 2 = No) (if no move to question no. 217)	
214.	What type of complementary food did /Will you give to you child ?	(Code : 1 = Home made, 2 = Cow milk, 3 = Tin food, 4 = Not applicable, 5 = Others )	
215.	If you gave complementary feeding how you did gave that?	(Code: 1 = Gradually, 2 = Not Applicable, 3 = Others )	
216.	How many times did you gave complementary food to your child?	(Code: 1 = 5-6 times, 2 = 7-8 times, 3 = 9-10 times, 4 = 11 - 12 times, 5 = As per need, 6 = Not applicable)	
217.	Did you breast fed your last child?	(Code: 1 = Yes, 2 = No)	
218.	If you did not breast fed than why not?	(Code: 1 = Breast milk not available, 2 = Baby refused, 3 = Do job so did not gave, 4 = Not applicable, 5 = Others )	
219.	When did you gave breast milk first time?	(Code: 1 = Not applicable, 2 = Within less than one hour, 3 = Within less than 24 hours, 4 = After one day, 5 = After two days)	
220.	Did you immunized you child ?	(Code: 1 = Yes, 2 = No)	

**Primary Health Care**

Question No.	Question	Code	Answer
221.	Did you gave vitamin A capsules two your children of less than 5 years?	(Code: 1 = Yes, 2 = No)	
222.	Did you gave vitamin A capsule two your chid within 24 hours of his/her birth?	(Code: 1 = Yes, 2 = No, 3 = Don't know, 4 = Not applicable)	
223.	Did you complete immunization of your last child? (Note: Check card whether she has completed all the immunization as required by age)	((Code: 1 = Yes, 2 = No, 3 = Can't remember/Don't know, 4 = Not applicable)	
224.	Did you complete full course of the immunization ?	(Code: 1 = Yes, 2 = No)	

**225. If immunized which of the following is given? (Check the immunization card and fill the following**

Name of immunization	BCG	POLIO	DPT	Measles	Pox	Mams	Tifoid	Neuronia	Hepatitis-1	Hepatitis-2	Hepatitis-3
Has immunized (Code: 1 = Yes, 2 = No)									1		
Has completed all dozes (Code: 1 = Yes, 2 = No)											

### Child Morbidity Related Information ( Applicable for the children ≤10 years of age)

Question No.	Question	Code	Answer
226.	Did your child suffer from diarrhoea during last two weeks?	(Code: 1 = Yes, 2 = No) (If answer is no then move to question no. 232)	
227.	When child was suffering from diarrhoea did you give less food than the regular one?	(Code: 1 = As before, 2 = Gave less than regular, 3 = Gave more than regular, 4 = Did not give any food, 5 = Can't remember, 6 = Others)	
228.	Did you take advise from any one to treat diarrhoea?	(Code: 1 = Yes, 2 = No, 3 = Not applicable)	
229.	For diarrhoea treatment where from/whom from you took advise?	(Code: 1 = Health service provider, 2 = Certified Doctor, 3 = Village doctor, Nurse/Midwife/Paramedix, 5 = Trained Midwife, 6 = FWV, 7 = Neighbour, Friends, 10 = Others)	4 = Relatives, 9 =
230.	When the child was suffering from diarrhoea then what else liquid food did you give along this regular food	(Code: 1 = Did not give any other things, 2 = Packet saline, 3 = Home made saline, 4 = Zinc syrup, 5 = Zinc Tablet, 6 = Coconut water, 7 = Gruel, applicable, 10 = Others)	8 = Socked puf rice water, 9 = Not
231.	What medicine was given to him to get relief of diarrhoea?	(Code: 1 = Antibiotic, 2 = Saline injection, 3 = Zinc syrup, 4 = Table name not known, 5 = Herbal medicine, 6 = Not applicable, 7 = Others)	
232.	Did your child suffer from cough during last two weeks?	(Code: 1 = Yes, 2 = No, 3 = Can't remember/Don't know, 4 = Not applicable)	(If answer is no then go to question no. 237)
233.	When he suffering from cough did he took breath more frequently than the normal?	(Code: 1 = Yes, 2 = No, 3 = Can't remember/Don't know, 4 = Not applicable)	
234.	Was it deep breath, or chest problem or due to running nose?	(Code: 1 = Chest problem, 2 = Sneezing nose, 3 = For both 1 & 2, 4 = Could not notice, 5 = Not applicable, 6 = Others)	
235.	Did you take advise or treatment from any one for this disease?	(Code: 1 = Yes, 2 = No, 3 = Can't remember/Don't know, 4 = Not applicable)	
236.	Treatment purpose where from / whom from did you take advise?	(Code: 1 = Health service provider, 2 = Certified Doctor, 3 = Village doctor, Nurse/Midwife/Paramedix, 5 = Trained Midwife, 6 = Health Assistant, 7 = FWV, 8 = Relatives, 9 = Neighbour, 10 = Friends, 11 = NGO worker, 12 = Others)	4 =

### Adolescent Girls Health Related Information (Applicable for girls age 10 to 18 years) (If household have more than one adolescent then ask to any one of the girls)

Question No.	Question	Code	Answer
237.	Do the adolescent girls of your house eat fish/meat/vegetables /fruits regularly?	(Code: 1 = Yes, 2 = No, 3 = not possible to make available regularly, 4 = Others)	
238.	Due to iron deficiency which of the diseases fever, disentry, weakness occurs?	(Code: 1 = Fever, 2 = Disentry, 3 = Weak, 4 = Don't know, 5 = Others)	
239.	Which of the disease that occurs due to iron deficiency is present in your family?	(Code: 1 = Feeling of full, 2 = Vomiting feeling, 3 = Colorless tongue, nail, lip, 4 = Sour in tongue and lip, 5 = Broken nail, 6 = Headache, 7 = Weak, 8 = No one, 9 = Others)	
240.	Do you know about anemia?	(Code: 1 = Yes, 2 = No)	
241.	Who is more susceptible to iron deficiency ?	(Code: 1 = Adolescent, 2 = Pregnant mother, 3 = Small children, 4 = Adult, 5 = Don't know)	
242.	Which of the disease that occurs due to vitamin A deficiency is present in your family?	(Code: 1 = Night blindness, 2 = Bittot spot, 3 = Rough skin, 5 = No one)	
243.	Which of the disease that occurs due to vitamin C deficiency is present in your family?	(Code: 1 = Bleeding from gum, 2 = Fever, 3 = Swollen gum, 4 = Don't know, 5 = No one)	
244.	Why adolescent girls should take iron dense food ?	(Code: 1 = Body development, 2 = To balance blood loss due to menstruation, 3 = To medicate iron deficiency)	
245.	What is the duration of menstruation?	(Code: 1 = 2 - 3 days, 2 = 6 - 7 days, 3 = More than 7 days)	
246.	During menstruation do you have excess blood loss?	(Code: 1 = Yes, 2 = No)	
247.	What do you use during menstruation ?	(Code: 1 = Cloth, 2 = Sanitary pad, 3 = Cotton, 4 = Others)	
248.	Do you keep clean what you use during your menstruation ?	(Code: 1 = Yes, 2 = No)	
249.	Can you go out during this time ?	(Code: 1 = Yes, 2 = No)	
250.	Do you get not to eat feeling during the period ?	(Code: 1 = Yes, 2 = No)	
251.	Do you eat all types of food during this time ?	(Code: 1 = Yes, 2 = No)	
252.	If don't eat then why ?	(Code: 1 = Taste problem, 2 = Mother advise not to eat, 3 = Get bad smell, 4 = Feeling of vomiting, 5 = Seiver pain in belly)	
253.	Is there any arrangement in your area to provide advise on fertility health to the girls of age >12 years ?	(Code: 1 = Yes, 2 = No)	
254.	Do you know that at this age there is a need of access intake ?	(Code: 1 = Yes, 2 = No)	

### Household Health and Morbidity Related Information (Ask to the housewife)

Question No.	Question	Code	Answer
255.	Do you why diarrhoea happens ?	(Code : 1 = Don't know, 2 = Given correct answer, 3 = Partially correct, 4 = Incorrect)	
256.	What precaution should be taken to get off from diarrhoea ?	(Code : 1 = Home made saline, 2 = packet saline, 3 = Rice powder, 4 = Medicine, 5 = Medicine & oral saline, 6 = Others)	
257.	How many times oral saline should be taken during diarrhoea?	(Code : 1 = After every toilet, 2 = Once in a day, 3 = Thrice in a day, 4 = Don't know)	
258.	Did any one of the family suffered from any disease during last one month?	(Code : 1 = Yes, 2 = No) (if answer is no go to question no 261)	
259.	What arrangement made to treat disease?		

MID	Type of disease (Disease Code)	Severity of disease	Treatment used (treatment code)	What medicine taken	How much paid to doctor	How much paid for medicine	If patient name	If own methods write methods
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Treatment code: 1 = Alopathy, 2 = Homeopathy, 3 = Ayurvedic, 4 = Kabiraji, 5 = Plants, 6 = Own method, 7 = No treatment used, 8 = Village doctor, 9 = Took medicine from pharmacy 10 = Pir treatment

260. F treatment method is plant then you will have to collect sample of plant as well as the picture and have to fill the following table-

Plant name	Used for which disease	is picture taken	In which month of the year	variable	Where to get
		(Code: 1 = Yes, 2 = No)			(Code: 1 = Cultivated, 2 = in bush, 3 = in Forest)
261.	Have you heard about Tuberculosis or TB?				(Code: 1 = Yes, 2 = No, 3 = Can't remember)
262.	Can a person get cured of Tuberculosis or TB?				(Code: 1 = Yes, 2 = No, 3 = Don't know)
263.	Can an individual who does not have AIDS or don't have any female friend reduce the chance of getting AIDS infection of his wife?				(Code: 1 = Yes, 2 = No, 3 = Don't know)
Question No.	Question	Code	Answer		
264.	Can a person be AIDS infected by mosquito bites?	(Code: 1 = Yes, 2 = No, 3 = Don't know)			
265.	Can condom use reduce the chance of getting infected by AIDS virus?	(Code: 1 = Yes, 2 = No, 3 = Don't know)			
266.	Can a person being refrain from intercourse reduce the chance of getting infected by AIDS virus?	(Code: 1 = Yes, 2 = No, 3 = Don't know)			
267.	Can a person be AIDS infected through sharing the food among themselves?	(Code: 1 = Yes, 2 = No, 3 = Don't know)			
268.	By the use of unsterilized syringe can an individual be AIDS virus infected?	(Code: 1 = Yes, 2 = No, 3 = Don't know)			
269.	Can individual be AIDS infected through unsafe blood transfusion?	(Code: 1 = Yes, 2 = No, 3 = Don't know)			
270.	Can a health man have AIDS virus?	(Code: 1 = Yes, 2 = No, 3 = Don't know)			
271.	Do you know that beside AIDS virus what other disease can be transmitted through intercourse?	(Code: 1 = Yes, 2 = No, 3 = Can't remember)			
272.	Have you heard about syphilis?	(Code: 1 = Yes, 2 = No, 3 = Can't remember)			
273.	Have you heard about gonorrhoea?	(Code: 1 = Yes, 2 = No, 3 = Can't remember)			
274.	Did you get infected by any disease through intercourse during the last one year?	(Code: 1 = Yes, 2 = No, 3 = Can't remember)			
275.	Did you find to pass out some bad smell water through your vagina during the last one year?	(Code: 1 = Yes, 2 = No, 3 = Can't remember)			
277.	In this type of sickness where did you go for treatment?	(Code: 1 = Health service provider, 2 = Certified Doctor, 3 = Village doctor, 4 = Nurse/Midwife/Paramedic, 5 = Trained Midwife, 6 = Health Assistant, 7 = FWV, 8 = Relatives, 9 = Neighbour, 10 = Friends, 11 = NGO worker, 12 = Others)			
278.	If a wife knows that her husband has some diseases which may be transmitted to her from intercourse and in the situation she refuse to do so, do you think it as justified?	(Code: 1 = Yes, 2 = No, 3 = Don't know)			
279.	During the last one year did any member of your family suffer or suffering from Jaundice?	(Code: 1 = Alopathy, 2 = Homeopathy, 3 = Ayurvedic, 4 = Kabiraji, 5 = Plant medicine, 6 = Own methods, 7 = Not applicable)			
280.	If suffer from jaundice then what type of treatment you received?				
281.	Does any member of your family has high or low blood pressure?	(Code: 1 = Yes, 2 = No, 3 = Don't know)			
282.	Does any member of your family has diabetic?	(Code: 1 = Yes, 2 = No, 3 = Don't know)			
283.	Does any member of your family has heart disease?	(Code: 1 = Yes, 2 = No, 3 = Don't know)			
284.	Does any member of your family has Asthma?	(Code: 1 = Yes, 2 = No, 3 = Don't know)			
285.	Does any member of your family has kidney disease?	(Code: 1 = Yes, 2 = No, 3 = Don't know)			
286.	Does any member of your family has gastric disease?	(Code: 1 = Yes, 2 = No, 3 = Don't know)			
287.	Does any member of your family has mental disease?	(Code: 1 = Yes, 2 = No, 3 = Don't know)			

**Pregnancy Period Related Information (Applicable for the household having ≤2 years children)**

Question No.	Question	Code	Answer
288.	Does it require any immunization during pregnancy (TT vaccination)?	(Code: 1 = Yes, 2 = No)	
289.	How many times have you taken vaccination during pregnancy?	(Code: 1 = Taken all dose in time, 2 = Incomplete dose, Vaccination not taken, 4 = Others)	3 =
290.	Did you take iron tablets during pregnancy?	(Code: 1 = Yes, 2 = No)	
291.	If taken, how many iron tablets did you take?	(Code: 1 = 150 Nos., 2 = Less than 150 nos., 3 = More than one 150 nos., 4 = Not mention about any dose, 5 = Not applicable)	
292.	Did you take folic acid tablet during pregnancy?	(Code: 1 = Yes, 2 = No)	
293.	If taken, how many folic acid tablets did you take?	(Code: 1 = 150 Nos., 2 = Less than 150 nos., 3 = More than one 150 nos., 4 = Not mention any dose, 5 = Not applicable)	
294.	Did you smoke during pregnancy?	(Code: 1 = Yes, 2 = No)	
295.	Since your last child birth how long did you not met with your husband?	(Code: _____ month)	
296.	Does a woman need to eat more than the normal during pregnancy?	(Code: 1 = Yes, 2 = No)	
297.	During pregnancy there are five alarming signs do you know all those?	(Code: 1 = Yes, 2 = No)	

**Prenatal (Pregnant) Health care (Applicable for the household having ≤2 years children) (If don't have <2 years children Ask question no. 302)**

Question No.	Question	Code	Answer
298.	How many month pregnant were you when you first go for health care?	_____ months.	
299.	How many times did you avail the prenatal health care services before delivery?	_____ times.	
300	Did you atleast once checkup the following measurements? 300a. If you checked up, then which of the following:	(Code: 1 = Yes, 2 = No)	

Measures	Body weight	Blood Pressure	Urine Test	Blood Test	Ultrasono gram
Value					

**Information Regarding Weight Gain During Pregnancy (Applicable for all mothers)**

Question No.	Question	Code	Answer
301.	During your last child birth where from did you take health services?	(Code: 1 = Did not take any health service, 2 = Own house, 3 = Others house, Hospital Medical college, 5 = FWC, 6 = Health center, 7 = Satellite clinic, 8 = MCWC, 9 = EPI center, 10 = Others)	4 =
302.	During your prenatal care were you informed about the 5 danger sign in pregnancy?	(Code: 1 = he Yes, 2 = No, 3 = Don't know)	
303.	Were you inform where to go if any of the 5 danger symptom arises during pregnancy?	(Code: 1 = Yes, 2 = No, 3 = Don't know)	
304.	If you have not taken prenatal care, then why you did not take?	(Code: 1 = Out of hear, 2 = Service giving time is not proper, 3 = Health service provider are not well behaved, 4 = Health service provider are experienced, 5 = have to wait for long time, 6 = Expensive, 7 = Religious region, 8 = Not knew the needs of taking health service, 9 = Could not go, 10 = Permission not received to go to doctor, 11 = Wher to go not known, 12 = Others)	
305.	Were any injection push in your hand to protect your baby from tuberculosis during your latest child birth?	(Code: 1 = Yes, 2 = No, 3 = Can'tt remember)	
306.	Did you take any tuberculosis vaccination before your last pregnancy?	(Code: 1 = Yes, 2 = No, 3 = Can'tt remember)	
307.	Before the pregnancy of your last baby, how many time you took the tuberculosis vaccination?	(Code: _____ times, if more than 7 then write 7, 77= Can'tt remeber/say, 88 = Not applicable)	
308.	Before your last pregnancy in which month and year you took the tuberculosis prevention vaccination?	(Code: _____ month snd _____ years, 77= Can'tt remeber/say, 88 = Not applicable)	
309.	In your last pregnancy did you took iron tablet or any syrup?	(Code: 1 = Yes, 2 = No, 3 = Can'tt remember, 4 = Not applicable)	
310.	During your last pregnancy did you suffer from any of the following problems- a. Long labor, that is, regular contractions that lasted more than twelve hours) b. Excessive bleeding that was so much that you feared it was life threatening? c. A high fever with bad smelling vaginal discharge? d. Convulsion e. Baby's hands and feet came first during delivery? f. Retained placenta	(Code: 1 = Yes, 2 = No, 3 = Can'tt remember)	
311.	In the above circumstances did you take type of help/cooperation from any one? If yes then from whom.	(Code: 1 = Did not take any health service, 2 = Own house, 3 = Others house, Hospital Medical college, 5 = FWC, 6 = Health center, 7 = Midwife, 8 = Satellite clinic, 9 = MCWC, 10 = EPI center, 11 = Not applicable, 12 = Others)	4 =
312.	In the above circumstances from whom you took the help first?	(Code: 1 = Did not take any health service, 2 = Own house, 3 = Others house, Hospital Medical college, 5 = FWC, 6 = Health center, 7 = Midwife, 8 = Satellite clinic, 9 = MCWC, 10 = EPI center, 11 = Not applicable, 12 = Others)	4 =
313.	In the above circumstances if you have not takwn any help from any then why?	(Code: 1 = Out of hear, 2 = Service giving time is not proper, 3 = Health service provider are not well behaved, 4 = Health service provider are experienced, 5 = have to wait for long time, 6 = Expensive, 7 = Religious region, 8 = Not knew the needs of taking health service, 9 = Could not go, 10 = Permission not received to go to doctor, 11 = Wher to go not known, 12 = Not applicable, 13= Others)	

**Postnatal Care (Applicable for child age < 2 Years)' (If <2 yrs children not present in Household move to Question no. 328)**

Question No.	Question	Code	Answer
314.	How long after the birth the baby was cleaned/wiped?	(Code: After -----minutes, 88 = Not wiped/Cleaned, 99 = Don't know/Cann't remember)	
315.	How long after the birth the baby was bathed?	(Code: 1 = Child was bath, 2 = Child was not bath, 99 = Don't know)	
	a. After _____ minutes		
	b. After _____ Days		
	c. After _____ Weeks		
316.	After the child birth where the first health check was done?	(Code: 1 = Own house, 2 = Others house, 3 = Hospital Medical college, 4 = FWC, 5 = Health center, 6 = Midwife, 7 = Satellite clinic, 8 = MCWC, 9 = EPI center, 10 = Others _____)	
317.	Who first check up health after giving birth of the child?	(Code: 1 = Health service provider, 2 = Nurse/Midwife/Paramedix, 3 = Trained midwife, 4 = Health assistant, 5 = FWV, 6 = Certified doctors, 7 = Village doctors, 8 = None examined, 9 = Others _____)	
318.	Did any doctor check up your health after giving delivery of child?	(Code: 1 = Yes, 2 = No, 3 = Don't know)	
319.	After how long of giving birth of child doctor checkup your health?	(Code: 1 = Not shown to any specialist, 2 = Shown to specialist, 3 = Not applicable)	
	a. After _____ minutes		
	b. After _____ days		
	c. After _____ Weeks		
320.	First two months of child birth, did you have this type (Medicine to be shown) vitamin A capsule?	(Code: 1 = Yes, 2 = No, 3 = Don't know)	
321.	How long will you feed /Fed breast milk to your child?	(Code: 1 = upto _____ month, 2 = Did not breast fed)	
322.	Has the menstruation begun after the birth of your last child?	(Code: 1 = Yes, 2 = No)	
322a.	After how many days of giving birth your menstruation again resume?	(Code: After _____ month, 99 = Menustartion not yet set, 88 = Not applicable)	
323.	Whose advise did you sought for postnatal care?	(Code: 1 = Certified allopathic doctor, 2 = Kuwak Doctor, 3 = Homeopathic doctor, 4 = Kabiraj, 5 = Midwife, 6 = Nurse/Medical Assistant/Paramedix, 7 = Pir/Fakir, 8 = None, 9 = Others _____)	
324.	Did you have excessive bleeding after giving birth of child?	(Code: 1 = Yes, 2 = No)	
325.	Did you have anemia during the pregnancy?	(Code: 1 = Yes, 2 = No, 3 = Don't know, 4 =Not applicable)	



### Fertility Related Information (Applicable for all married couple)

Question No.	Question	Code	Answer
326	Are you married now?	(Code: 1 = Yes, 2 = No)	
327	What was your age at the time of marriage?	years	
328	What was the age of your husband at the time of marriage?	years	
329	Did your menstruation begins at the time of your age?	(Code: 1 = Yes, 2 = No)	
330	When first time you stayed with your husband what was your age?	Years	
331	What was your husband's age at that time?	Years	
332	Does your husband live with you now?	(Code: 1 = Live with me, 2 = Live other place, 3= Others )	
333	If live other place then how long he is living apart from you?	months, 77 = Not applicable	
334	Did you married before or lived with any other persons more then one time?	(Code: 1 = Only once, 2 = More than once, 3 = No)	
335	Are you pregnant now?	(Code: 1 = Yes, 2 = No)	
336	How many months of pregnant are you?	(Code: 1 = Not applicable, months)	
337	How did you first get pregnant, did you wanted to get pregnant?	(Code: 1 = Yes, 2 = No)	
338	If you did not want to get pregnant then, when did you want to get pregnant?	(Code: 1 = Wanted to get later, 2 = Never wated to get baby, 3 = Not applicable)	
339	Did you ever experienced abortion?	(Code: 1 = Yes, 2 = No)	
340	Did you ever give birth of still baby?	(Code: 1 = Yes, 2 = No, 3 = Not applicable)	
341	If in the last days you had under gone regularisation of menstruation/ abortion/ still birth then how many months of pregnant were you?	_____ months , 99 = Not applicable	
342	Information on abortion/Still birth- Before giving birth of 1st child Abortion Still birth	99= Not applicable Between 2nd & 3rd child Abortion Still birth Between 4th & 5th child Abortion Still birth	
How many times/Nox			
343	Was your first delivery normal?	(Code: 1 = Yes, 2 = No, 3 = Not applicable)	
344	Is there any twin among your children?	(Code: 1 = Yes, 2 = No, 3 = Not applicable)	
345	If yes, who are twin (Write MID by checking)?	MID-----, MID-----, MID-----	
346	Did any one of your children died after birth?	(Code: 1 = Yes, 2 = No, 3 = Not applicable)	
347	If any one of your child died after birth how amny of them died and what age?	_____ 3 _____ 4	
Sex of children	1 Son _____ 2 Daughter _____ 3 Son _____ 4 Daughter _____		
Age			
348	What was the delivery method at the birth of your last child?	(Code: 1 = Normal, 2 = Sesection, 3 = Forcep, 4 = Not applicable, 5 = Others	
349	Who assited at the delivery time of your last child?	(Code: 1 = Health service provider, 2 = Certified doctors, 3 = Nurse/Midwife/Paramedix, 4 = Trained midwife, 5 = Health assistant, 6 = FWW, 7 = Village doctors, 8 = Relatives, 9 = Neighbour, 10 = Friends, 11 Others	
350	After the birth of your last child how long did you stayed at the delivery place?	(Code: _____ hours, 33 = 1 day, 44 = 2 days, 55 = 3 days, 66 = More than 3 days, 77 = Delicery take place at hoem.	
351	After the birth of your first child what was used cut the cord?	(Code: 1 = By the blade of delivery kids, 2 = By other blade, 3 = Bamboo knife, 4 = Don't know, 5 = Others	
352	Was the trensils used for cutting cord boiled in hot water?	(Code: 1 = Yes, 2 = No, 3 = Don't know)	
353	After cutting and binding the cord what was used in cutting place?	(Code: Nothing was applied, 2 = Antibiotic powder, 3 = Antibiotic ointment, 4 = Dettol/Savlon, 5 = Sprit	
354	At what month the last child was born (After how many month of pregnancy the child was born)	_____ months.	
355	What was the child birth weight? (1 lb. = 450 gm)	_____ gm. , 77 = can't remember/don't no, 88 = Birth weight was not taken	
356	Did your child faced any problem at the time of his birth?	(Code: 1 = Yes, 2 = No)	
357	If faced any problem, what type of problem was that?	Disease code	
	Disease name	Treatment procedure adapted	
Disease code: Write from the code book			
Adapted treatment code: 1 = certified doctor, 2 = Kawak doctor, 3 = Homeopath, 4 = Kabiraj, 5 = Midwife, 6 = Nurse/Medical Assistant/Paramedix, 7 = Pirrifakir, 8 = None, 9 = Others _____			
358	How was the condition of the child at the time of birth?	(Code: 1 = Disease free, 2 = Diseased, 3 = Twin & disease free, 4 = Physically not normal, 5 = Not applicable.	
359	If the child born disabled, what type of disable?	Code: 1 = Lips cut, 2 = Talu cut, 3 = Normal eye/nose, 4 = Disbated arm, 5 = Disabled leg, 6 = Not applicable, 7 = Others	

## Family Planning Related Information

Question No.	Question	Code	Answer
360.	Did you ever adapted family planning?	(Code: 1 = Yes, 2 = No)	
361.	In last one month did you:		
	a. Heard about family planning in radio?	(Code: 1 = Yes, 2 = No)	
	b. Seen drama in TV or news about family planning?	(Code: 1 = Yes, 2 = No)	
	c. Read in Magazine or news paper about family planning?	(Code: 1 = Yes, 2 = No)	
	d. Seen poster or leaflet about family planning?	(Code: 1 = Yes, 2 = No)	
362.	Are you & your husband in agree how many child will you take?	(Code: 1 = In agree, 2 = Husband like more children, 3 = Husband like less children, 4 = Don't know/Did not have discussion about the matter)	
363.	Did you have any discussion with your husband in last 3months on family planning?	(Code: 1 = No never, 2 = Once or twice, 3 = Often)	
364.	Have/will you adapt family planning methods for not to take more children in future?	(Code: 1 = Yes, 2 = No, 3 = Don't know)	
365.	Which method of family have or will you adapt for family planning?	(Code: 1 = Don't use any method, 2 = Lygetion, 3 = Vasectomy, 4 = Taking pill, 5 = IUD, 6 = Injection for female, 7 = Male condom, 8 = natural, 9 = 3 & 4, 10 = 5 & 6, 11 = Others mention, 12 = Not applicable)	
366.	Among the family planning methods which one will you like?	(Code: 1 = Lygetion, 2 = Vasectomy, 3 = Taking pill, 4 = IUD, 5 = Injection for female, 6 = Male condom, 7 = Natural, 8 = 3 & 4, 9 = 5 & 6, 10 = Others mention, 11 = Not applicable)	
367.	Among the family planning methods about which one you know or have heard?	(Code: 1 = Lygetion, 2 = Vasectomy, 3 = Taking pill, 4 = IUD, 5 = Injection for female, 6 = Male condom, 7 = Natural, 8 = 3 & 4, 9 = 5 & 6, 10 = Others mention, 11 = Not applicable)	
368.	What is the reason of not adapting any of the family planning methods?	(Code: 1 = to take more children, 2 = Religion purpose, 3 = Husband doesn't like, 4 = Don't know about the method, 5 = Harmful for health, 7 = Problem in use, 8 = Ignorance, 6 = Not applicable, 9 = Others, 10 = Others)	
369.	Have you heard about menstruation regularization (MR)?		
	(MR means when an women don't have regular menstruation then she goes to the health service center /RWV and a tube is inserted within her and menstruation is regularised)		
370.	Did you ever undergone for MR?	(Code: 1 = Yes, 2 = No)	
371.	Do you know that where may you have the family planning materials?	(Code: 1 = Yes, 2 = No, 3 = Not applicable)	
372.	For the last time wheer from you took the family planning materials?	(Code: 1 = Did not adapt any methods, 2 = Hospital/Medical college, 3 = FWC, 4 = Health center, 5 = satellite clinic, 6 = MCWC, 7 = EPI centre, 8 = Husband brought, 9 = Health worker supplied, 10 = Bought from Pharmacy/stop, 11 = Others)	
373.	When have you first started to adapt the family planning methods?	(Code: 1 = Not applicable, 2 = Just after marriage, 3 = Between first and second child, 4 = Between 2nd & 3rd child, 5 = Between 3rd & 4th child, 6 = Not applicable)	
374.	Have you adapted any permanent planning methods?	(Code: 1 = Yes, 2 = No, 3 = Not applicable)	
375.	If you have adapted the family planning methods where from you get it?	(Code: 1 = Did not adapt any method, 3 = Lygetion, 4 = Vasectomy, 5 = Others)	
376.	If you have adapted the temporary family planning method who has adapted that?	(Code: 1 = Not applicable, 2 = Hospital/Medical college, 3 = FWC, 4 = Health center, 5 = satellite clinic, 6 = MCWC, 7 = EPI centre, 8 = Others)	
377.	At your what age you have adapted permanent family planning methods?	(Code: 1 = Not applicable, 2 = Husband, 3 = Both in same rate, 4 = Not applicable)	
378.	After how many years of marriage you had your first child?	_____ years, 99= Not applicable (if permanent methods not adapted)	
379.	Total how many times did you get pregnant?	_____ Months	
380.	Did any one came to you in the last six months to talk about the family planning methods?	_____ Times	
381.	If any one came to talk about family planning or its methods, then in last six months how many times did he/she come to you?	(Code: 1 = None came, 2 = Govt. Family planning worker, 3 = Govt. Health worker, 4 = NGO worker, 5 = Not applicable)	
382.	How type of cooperation did you received during your pregnancy period?	(Code: 1 = Good, 2 = Moderate, 3 = bad, 4 = Very bad)	
383.	Was there any limitations of food for you during pregnancy?	(Code: 1 = Yes, 2 = No)	
384.	In your last pregnancy, what type of problem did you faced?	(Code: 1 = Swelling of feet, 2 = Convulsion, 3 = pain at lower abdomen, 4 = Pain at upper abdomen, 5 = Cough, 6 = Bleeding, 7 = No problem, 8 = Vomiting, 9 = Bleeding, 10 = Urinary irritation, 12 = Others)	
385.	Did you adapted family planning before your last pregnancy?	(Code: 1 = Yes, 2 = No, 3 = Not applicable)	
386.	Who bring you the last methods?	(Code: 1 = Husband, 2 = Friend, 3 = Govt. Family Planning Workers, 4 = Govt. Health workers, 5 = NGO worker, 6 = Not applicable, 7 = Others)	
387.	How long you have been using this method?	_____ months _____ Years	

### Husband - Wife Related Information

Question No.	Question	Code	Answer
388.	Are you interested to take more children?	(Code: 1 = Yes, 2 = No)	
389.	Before last pregnancy were you interested to take space?	(Code: 1 = Yes, 2 = No)	
390.	If answer is no then what is the reason of not taking child?	Code: 1 = Child have that is enough, 2 = It is difficult to rearup many children, 3 = Not applicable)	
391.	Regarding adaptation of family planning to what extent your advise has the acceptance in your family?	(Code: 1 = Both of take decision, 2 = Husband decides, 3 = I decide, 4 = Others )	
392.	In your opinion who should be more concern regarding adaptation of family planning?	(Code: 1 = Only husband, 2 = Wife, 3 = Both, 4 = Others )	
392a.	What is the spacing pattern of your children?		

Child Order	Between 1st & 2nd child	Between 2nd and 3rd child	Between 3rd & 4th child	Between 4th & 5th child
Spacing in birth (month)				

### Applicable for Lactating Mothers

Question No.	Question	Code	Answer
393.	Does your child get enough breast milk?	(Code: 1 = Yes, 2 = No)	
394.	How many times do you feed you child in a day?	(Code: 1 = 5 - 6 times, 2 = 7 - 8 times, 3 = 9 - 10 times, 4 = 11 - 12 times, 5 = On demand)	
395.	Is the child vaccinated?	(Code: 1 = Yes, 2 = No)	
396.	Is the course of vaccination completed?	(Code: 1 = Yes, 2 = No)	
397.	Have you given all the vaccination to your last child?	(Code: 1 = Yes, 2 = No, 3 = Can't remember/Don't know)	

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