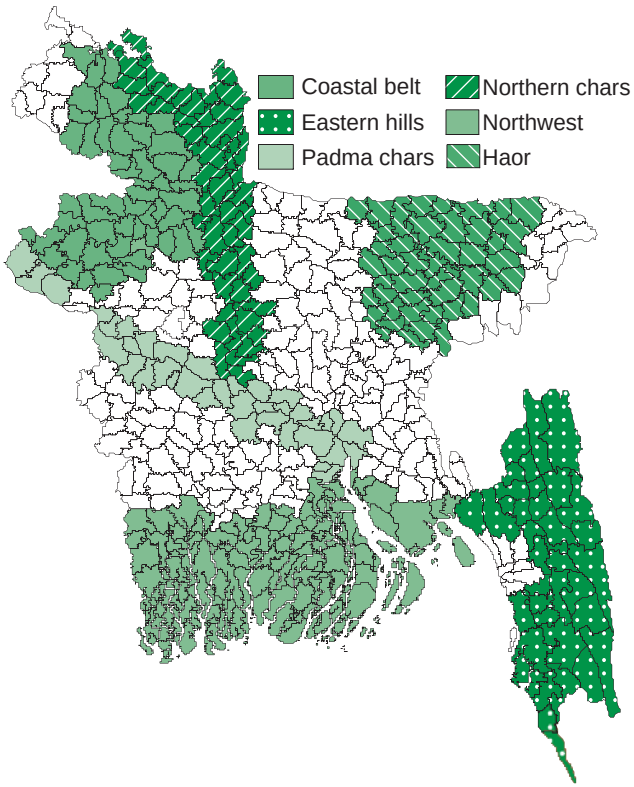
BANGLADESH

FSNSP | Round 9

The Food Security and Nutrition Surveillance Project: Results from Round 9: October to December 2012

The Food Security and Nutrition Surveillance Project (FSNSP) provides up-to-date, seasonal information on the situation of food and nutrition security in Bangladesh for six surveillance zones, depicted in Figure 1, as well as the nation as a whole. In each household multiple members are interviewed to obtain commonly referenced and standardized indicators of food security, women's care and nutrition, as well as children's care and nutrition.

Figure 1: FSNSP surveillance zones



FSNSP estimates levels of food insecurity from household coping and food consumption patterns, because food insecurity – no matter if it is due to low availability of food stocks, low household access to foods, or biased utilization of a household's food stocks – results in a similar range of experiences and observables for households and individuals. All food security questions are asked to the person identified in each household as the manager of the kitchen.

In each household, one non-pregnant woman, aged 10 to 49 years, is randomly selected to be interviewed about her diet and to have her height, weight, and

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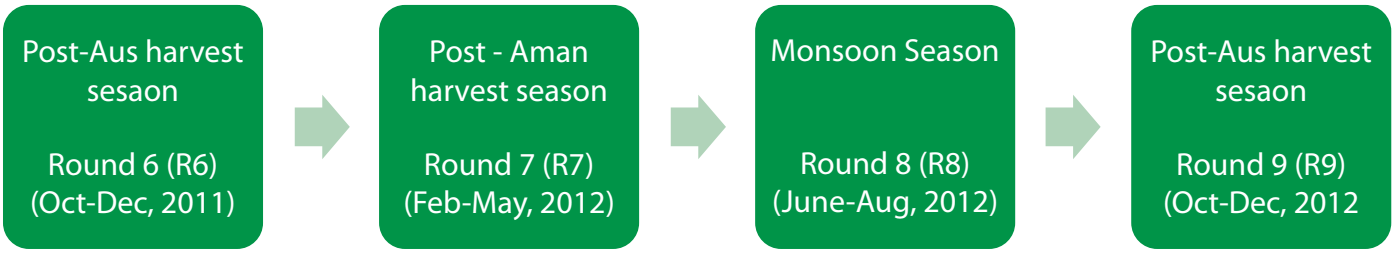
mid-upper arm circumference (MUAC) measured. In addition, all pregnant women are interviewed about their diet and the care they have received during their pregnancy, and their MUAC measurement is recorded. In addition, if the youngest child in the household is less than six months of age, that child's mother is asked about the care she received during her pregnancy with this child.

In each household with a child less than five years of age, child caregivers are asked about the care and feeding practices for the youngest child in the household. Caregivers also provide information about recent childhood illnesses, and, if the child is reported to have been ill, additional questions about care during illness are asked. The height, weight, and MUAC of all children under five years of age in the household are recorded.

Figure 2: Time period of surveillance rounds included in this bulletin



This bulletin presents selected results from the ninth round of surveillance which took place from October to December 2012. This bulletin also presents estimates from the sixth, seventh and eighth rounds of data collection, to show both seasonal variation and changes in indicators between 2011 and 2012 for the Post-Aus harvest season. The ninth round included 4,547 children less than five years of age and 9,147 women and adolescent girls aged 10 to 49 years in 9,022 households.

In this report, percentages given at the end of bars in each graph are for the overall prevalence estimates for that particular indicator (regardless of severity) and may vary from the sum of its sub-categories due to rounding error. Adjusted Wald tests were used to determine the statistical significance of changes in indicators between surveillance rounds. In the graphs rounds of data collection are indicated by the letter R and the round of data collection (For example, Round 6 is indicated by R6). Additional details about the terms used in each graph can be found in the endnotes.

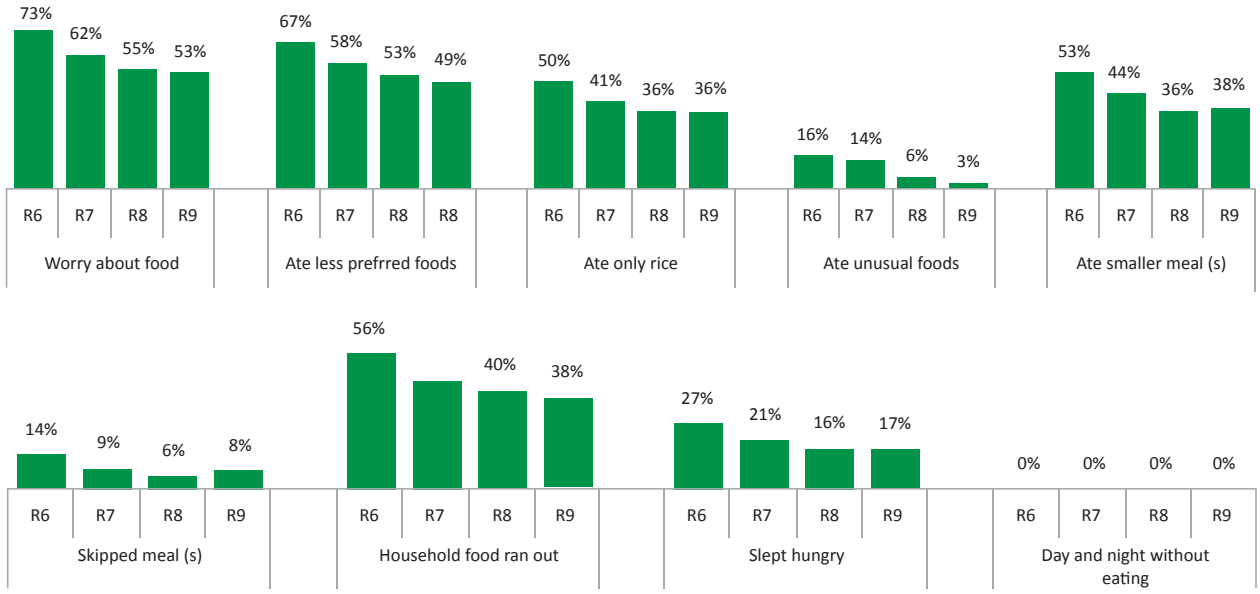
Food Security

Food insecurity as measured by Household Food Insecurity Access Scale (HFIAS) and food deficit as measured by Food Deficit Scale (FDS) was lower during Round 9 than at any point in the prior year (52% and 15%, respectively), though this level was only marginally lower than the period June to August 2012 (Round 8). Between the Post Aus harvest season of 2011 and that of 2012, there was a large and statistically significant reduction in the proportion of households that are food insecure, both indicators fell by around 30%. In contrast, the proportion of households with inadequate dietary diversity (consisting of households with poor, borderline, and acceptable low FCS values) increased significantly in Round 9 (34%) compared to Round 8 (23%) and reached the maximum level as it was one year earlier in Round 6 (34%). This pattern, where dietary diversity is greater during the monsoon months, has been observed in past years of FSNSP.

Among zones, by all measures, food insecurity was highest in Northern chars followed by Coastal belt. Additionally the very high prevalence of households with inadequate dietary diversity, especially for Northern chars and Coastal belt (51% and 48%, respectively) were major concern. The poor household dietary diversity is expected to negatively influence the health status of women and children in these areas.

Figure 3: Households experiencing food insecure conditions at least once in the month prior to the interview

The proportion of households nationally in which the kitchen manager reported that the household had ever experienced the listed conditions related to food insecurity in the month prior to the interview (presented from least to most severe, according to HFIAS) by surveillance round.[i] These estimates are derived from self-reported perceptions of the food security situation (1).



Note: Responses to the indicators given in Figure 3 are grouped into a two scales utilizing internationally standardized methodology in Figure 4.

Figure 4: National prevalence of internationally standardized food security indicators by severity and round

The proportion of households in Bangladesh which fit internationally standardized categorizes of food insecurity by surveillance round (1; 2; 3; 4).

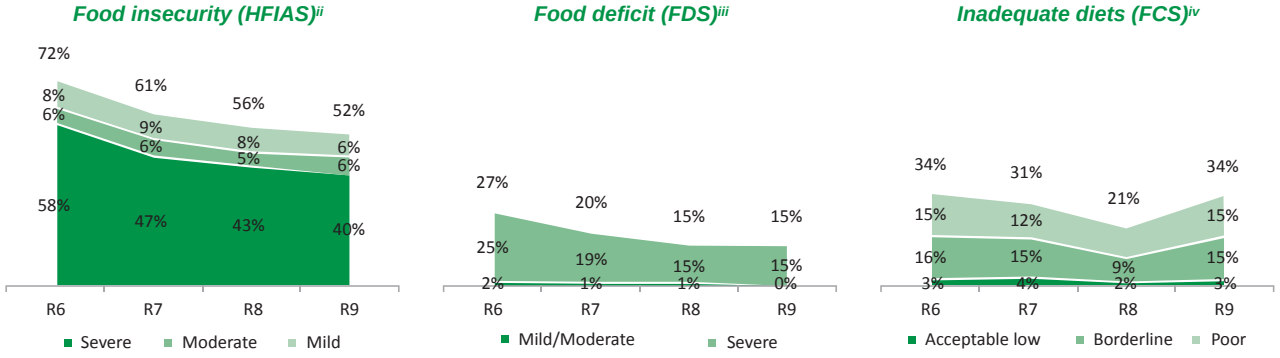
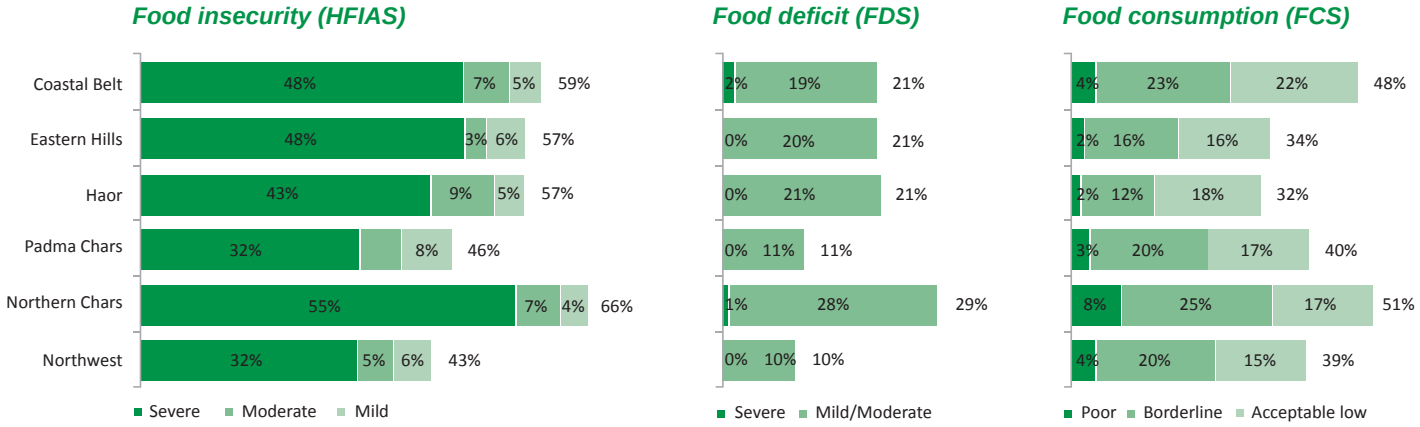


Figure 5: Prevalence of internationally standardized food security indicators during Round 8 by surveillance zone

The proportion of households which fit internationally standardized categorizes of food insecurity by surveillance zone during June to August 2012 (1; 2; 3; 4).



Care and nutrition for pregnant women and children

The proportion of pregnant women whose fetus was at increased risk of growth retardation decreased in Round 9 (26%) compared to Round 8 (34%) and Round 6 (32%), but these changes were not statistically significant. None of the other indicators of care for pregnant women changed dramatically between Rounds 6 and 9. Some of the breastfeeding indicators e.g., early initiation of breastfeeding, exclusive breastfeeding of infants has increased somewhat between Round 8 and 9 but these changes were not statistically significant. Furthermore patterns appear to have changed little over the past year; the change of breastfeeding indicators between the Post-Aus harvest seasons of 2011 and 2012 were not significant (compare Round 6 to Round 9).

In contrast, the proportion of children fed diets which meet a minimum level of diversity and fell significantly in Round 9 compared to Round 8. In contrast, prevalence of introduction to solid, semi-solid food has increased significantly between the Post-Aus harvest seasons of 2011 and 2012 (comparing Round 6 to Round 9). None of the other changes in complementary feeding indicators were remarkable. The proportion of children who were suffering from diarrhea decreased significantly in Round 9 compared to Round 8. No other changes of illness and care for children between rounds were remarkable.

Wasting peaked in prevalence in monsoon season (middle of the year) in both 2011 and 2012 (13% each) which was significantly higher than Post-Aman harvest season (February to April). Among zones, the prevalence of wasting was highest in the Eastern hills (13%) followed by the Northwest and Padma chars (12% each) and surprisingly lowest in the Haor (9%) but none of the differences were statistically significant.

Figure 6: Care during pregnancy by round

The proportion of women pregnant during interview or with recent deliveries in Bangladesh who received the listed standards of care during their pregnancy and who are malnourished (based on MUAC) by surveillance round (5; 6).[v] A woman included in the recently completed pregnancy estimates had a child less than 6 months of age at the time of the interview.

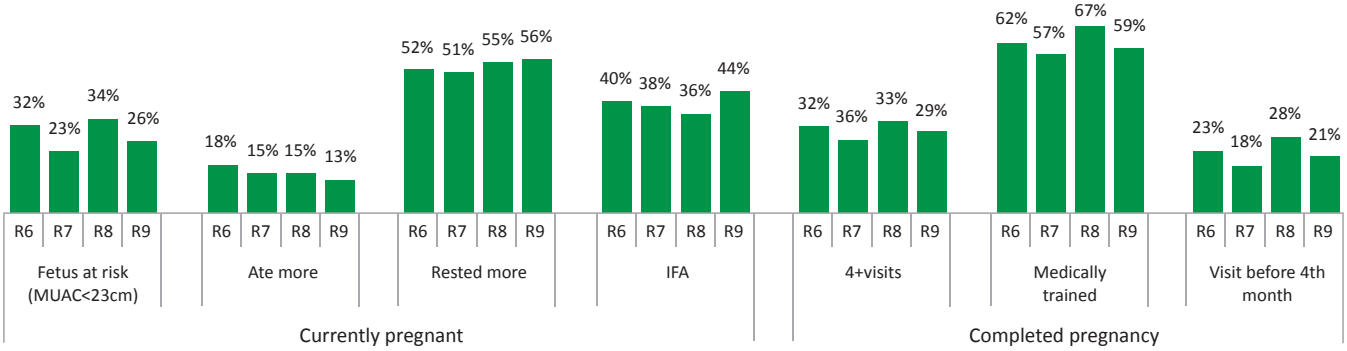


Figure 7: Child illness and care for sick children by round

The proportion of children in Bangladesh who were sick with the respective illness and who were reported to receive the listed standards of care by surveillance round (6).[vi]

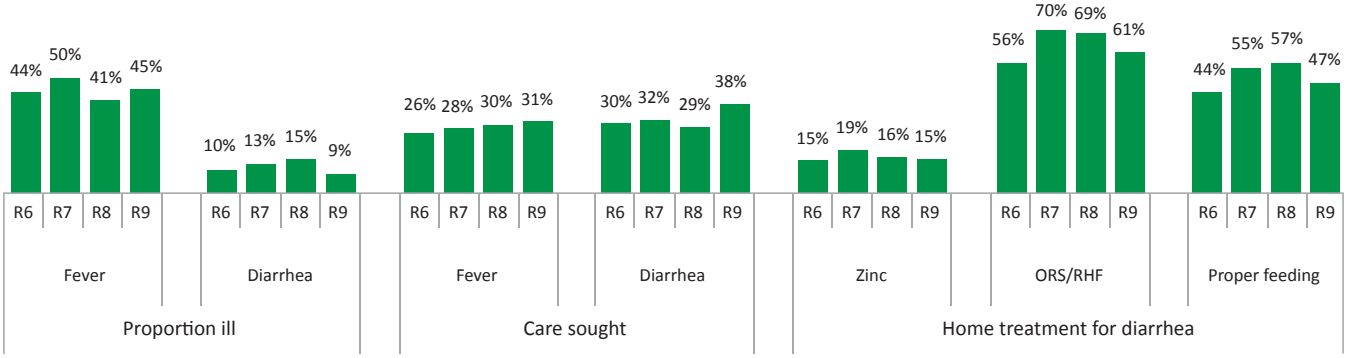
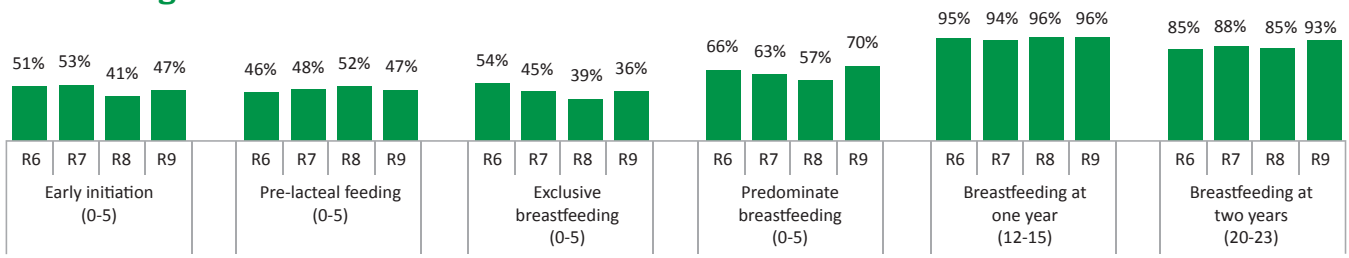


Figure 8: Infant and young child feeding practices by round

The proportion of children fed in line with the listed practices nationally.[vii] The age group in completed months is given in parenthesis. These indicators of infant and young child feeding practices of children are estimated using methodology from the World Health Organization (7; 8).

Breastfeeding



Complementary feeding

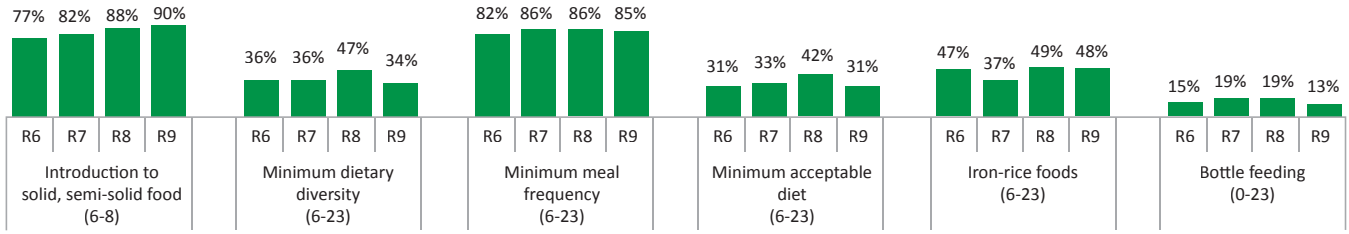
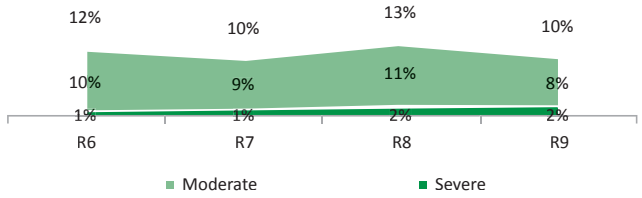


Figure 9: National prevalence of child under nutrition by severity and round

The proportion of children under five years of age in Bangladesh who were wasted and underweight by surveillance round. The proportion of children 0 to 59 months of age who were classified as malnourished based on age, weight, and height measurements as assessed with reference to the World Health Organization's 2006 growth standards (9). The overall or total prevalence indicates global malnutrition of children.[viii]

Acute (Wasting)



Underweight

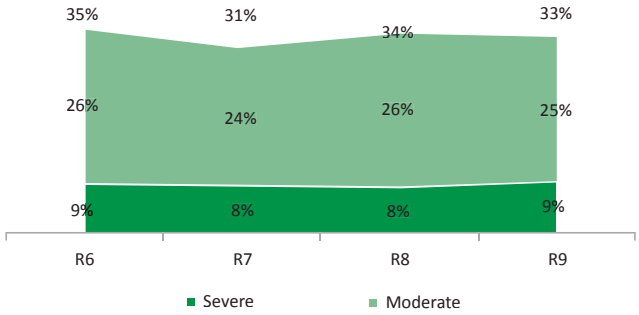
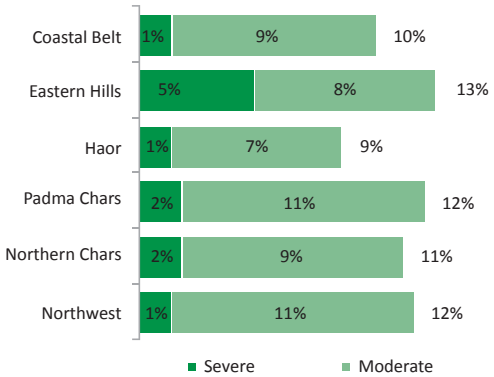


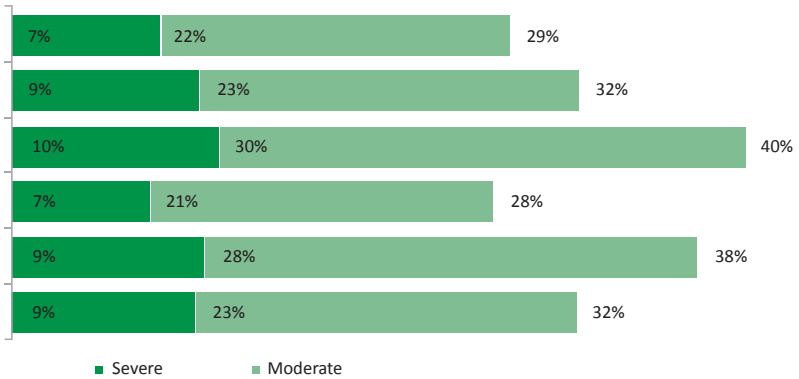
Figure 10: Prevalence of child under nutrition during Round 9 by severity and zone

Proportion of children under five years of age who were wasted and underweight by surveillance zone during October to December 2012. The proportion of children 0 to 59 months of age who were classified as malnourished based on age, weight, and height measurements as assessed with reference to the World Health Organization's 2006 growth standards (9).[ix]

Acute (Wasting)



Underweight



Nutritional status of women and adolescent girls

There was no remarkable change observed in the nutritional status of adolescent girls or women between Rounds 8 and 9. Similarly, there has been slight variation observed in chronic energy deficiency (CED) among women (BMI<18.5) over six consecutive rounds (Round 4 through 9), and within this time the only significant change occurred between the monsoon seasons of 2011 and 2012 (compare Round 5 to Round 8) where it decreased from 24% to 20%. In contrast, women overweight (Asian standard, BMI>23) continued to increase significantly between the post-Aman harvest season and between the monsoon seasons of 2011 and 2012. The slight decrease Round 9 compared to Round 8 was not significant.

Among zones, the prevalence of chronic energy deficiency (CED, BMI<18.5) among women in Round 9 was highest in the Haor (30%) followed by the Northern chars (26%) and lowest in the Eastern hills (18%). On the other hand, the proportion of overweight women was highest in the Padma chars (36%) followed by the Eastern hills (35%). The prevalence of women overweight decreased slightly in Round 9 compared to Round 8 but this was not significant. This is the third round in a row when highest prevalence of chronic energy deficiency among women was found in the Haor and highest prevalence of overweight women was found in the Padma chars. Prevalence of underweight girls was highest in the equal across homes Padma chars and Eastern hills (12% each) in Round 9 but other than Northern chars the distribution is almost equal.

Figure 11: Nutritional status of women and adolescent girls

The proportion of adolescent girls and women who fell into categories of nutritional status based on BMI (6; 10; 11). The overall prevalence indicates global underweight for adolescent girls underweight (BMI for age z-score<-2S.D.), chronic energy deficiency (CED) for women underweight (BMI<18.5), and overweight and obese by the Asian cutoff for women overweight (BMI>23) (6; 10; 11).[ix]

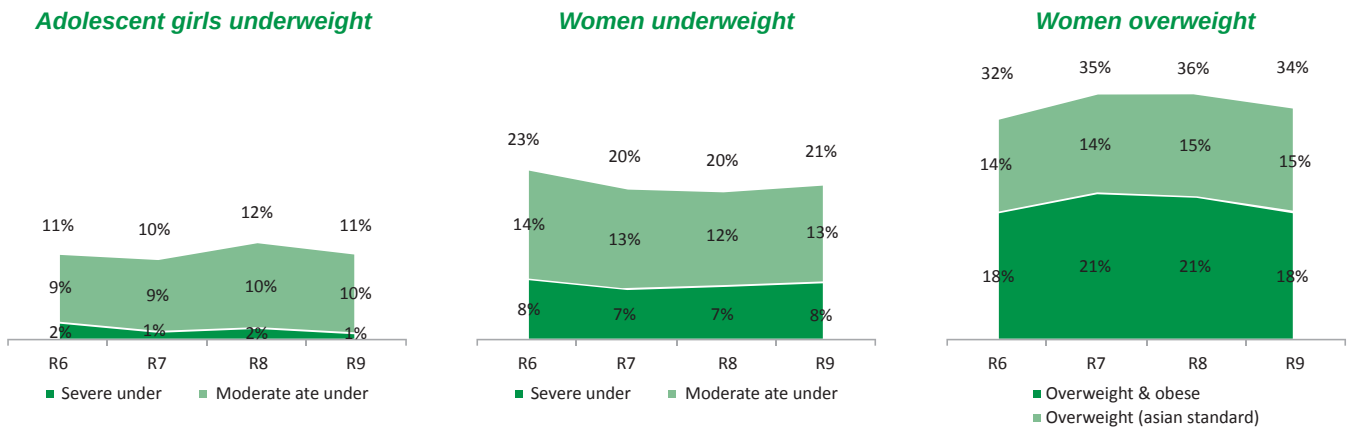
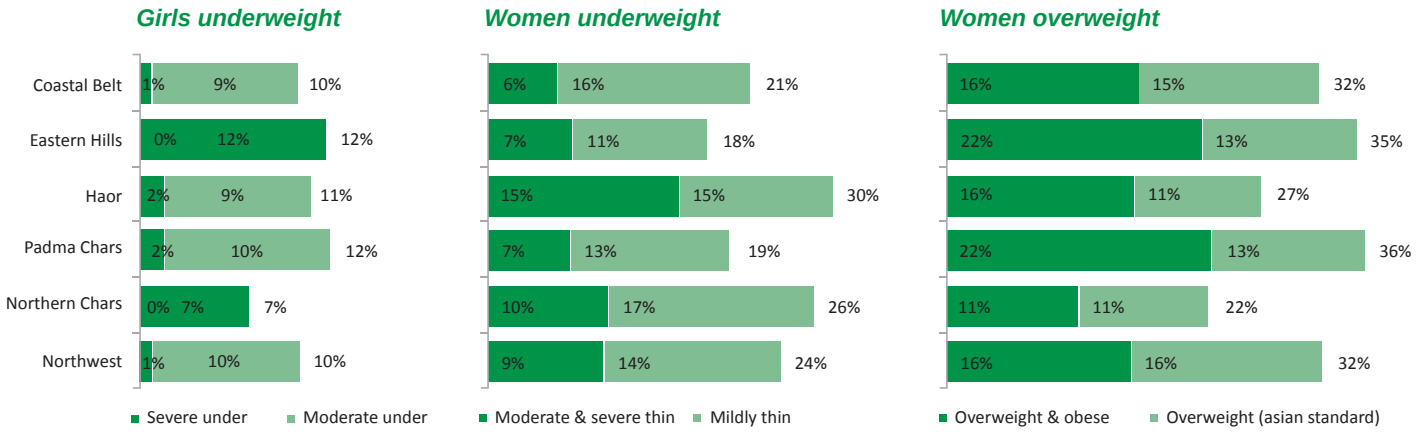


Figure 12: Nutritional status of women and adolescent girls during Round 9 by zone

The proportion of adolescent girls and women who fell into categories of nutritional status based on BMI during October to December 2012 by surveillance zone (6; 10; 11). [ix]



[i] These indicators are ordered by severity as given in the Household Food Insecurity Access Scale (HFIAS) scale. Households and household members who practiced any of these behaviors for a reason other than difficulties obtaining food are not included (for example, a household member who skipped a meal due to illness).

Worry about food: Proportion of kitchen managers who report worrying about obtaining food for their household in the past month

Ate less preferred foods: Proportion of households in which any member had to eat food they felt was inferior, i.e. broken rice instead of whole rice

Ate only rice: Proportion of households in which any member ate only rice or rice and spices for a meal

Ate unusual foods: Proportion of households in which any member ate unusual or scavenged foods, i.e. water lily

Ate smaller meals: Proportion of households in which any member ate a smaller meal than they felt they needed

Skipped meals: Proportion of households in which any member skipped a meal

Food ran out: Proportion of kitchen managers who report that any food stored in the household ran out for the day and there was no money to buy more

Slept hungry: Proportion of households in which any member slept hungry at night, even if this individual did so after eating an inadequate meal

Day and night without eating: Proportion of households in which any member was unable to eat for 24 hours

[ii] All nine indicators listed in Figure 3 are used in HFIAS. Based around the premise that some coping responses are more serious than others and indicate a household is more food insecure, HFIAS categorizes households into three degrees of food insecurity based on the most "severe" coping mechanism they have employed (1), and a household is categorized as food insecure if worry about providing food occurred more than twice in the month before the interview.

[iii] Only the three most severe indicators depicted in Figure 3 – household food stores running out, sleeping hungry, or going day and night without eating – are included in the Food Deficit Scale (FDS). FDS, identical to the internationally standardized indicator the Household Hunger Score, uses the reported frequency of experience of these three conditions to categorize households into categories of household food scarcity. A household is categorized as having a food deficit if any one of these three experiences occurred more than three times or if more than two of these conditions were experienced in the month before the interview.

[iv] FSNSP asks household kitchen managers about the frequency with which their household has eaten foods from eight standardized food groups in the week prior to the interview. These frequency scores are weighted in line with the Food Consumption Score (FCS) guidelines laid out by the World Food Program (3). Households are then grouped into food consumption categories using cut-offs designed for Bangladesh (4).

[v] The following indicators of care during pregnancy were asked to women who were pregnant at the time of interview.

Nutritional status: Based on MUAC: fetus at moderate risk – MUAC<23.0cm (5).

Ate more: Proportion of women who report eating more during their pregnancy than they did prior to their pregnancy

Rested more: Proportion of women who report resting more during their pregnancy than they did prior to their pregnancy

Took IFA at least weekly: Proportion of women who report taking iron and folic acid (IFA) tablets in the last week

The following indicators of care during pregnancy were asked to women who gave birth in the six months prior to the interview (recently completed pregnancy)

4+ visits: Proportion of women who received at least four ANC visits from any provider

Medically trained: Proportion of women who obtained any ANC from a medically trained provider as defined by DHS (6)

Visit before the fourth month: Proportion of women who obtained their first ANC before their fourth month of pregnancy

[vi] The following indicators were estimated for children who were reported ill with the respective symptoms in the two weeks preceding the interview:

Fever: Proportion of children 0 to 59 months of age whose caregiver reported that he/she had had fever

Diarrhea: Proportion of children 0 to 59 months of age whose caregiver reported that he/she had had diarrhea

Care sought: Proportion of children 0 to 59 months of age reported to have been sick with the listed illness who sought treatment from any provider except a pharmacy or traditional healer

Zinc: Proportion of children 6 to 59 months of age with a diarrheal episode who were reported to have received zinc during the illness

ORS/RHF: Proportion of children 6 to 59 months of age with a diarrheal episode who were reported to have received oral rehydration solution (ORS) and/or recommended home fluids (RHF), such as sugar-salt-water, or fluid from special saline (rice) during the episode

Adequate home care for diarrhea (proper feeding): Proportion of children 6 to 59 months of age with a diarrheal episode in who were reported to have received increased fluids and/or ORS and ate the same or more food during the episode

[vii] All indicators, except early initiation and pre-lacteal feeding are based on feeding practices the day before the interview (7; 8). Any cases where the respondent could not answer the question were excluded from the analysis.

Early initiation: Proportion of children born in the last 24 months who were reported to have been put to the breast within one hour of birth.

Pre-lacteal feeding: Proportion of children born in the last 24 months who were given anything other than breast milk in the first three days after delivery

Exclusive breastfeeding: Proportion of infants 0-5 months of age who are fed only breast milk (vitamins and medicines are also permitted)

Predominant breastfeeding: Proportion of infants 0 to 5 months of age who receive breast milk exclusively or breast milk and other non-milk based liquids (such as water, water-based drinks, fruit juice, and ritual fluids)

Continued breastfeeding at 1 year: Proportion of children 12 to 15 months of age who are fed breast milk

Continued breastfeeding at 2 years: Proportion of children 20 to 23 months of age who are fed breast milk

Introduction of solid, semi-solid or soft food: Proportion of infants 6 to 8 months of age who receive solid, semi-solid or soft foods the day before the interview

Minimum dietary diversity: Proportion of children 6 to 23 months of age who receive foods from 4 or more food groups the day before the interview

Minimum meal frequency: Proportion of children aged 6 to 23 months who receive solid or semi-solid foods the minimum number of times or more. Minimum is defined as: 2 times for breastfed infants 6 to 8 months; 3 times for breastfed children 9 to 23 months; and 4 times for non-breastfed children 6 to 23 months a day.

Minimum acceptable diet: Proportion of children aged 6 to 23 months whose diet met both the minimum diversity and minimum frequency standards

Iron rich foods: Proportion of children aged 6 to 23 months who ate an iron-rich food, an iron-fortified food, or an iron supplement day before the interview

Bottle feeding: Proportion of children 0 to 23 months of age who are fed with a bottle the day before the interview

[viii] Children whose measurements (z-score) indicate that they are between negative two standard deviations (-2 SD) and negative three standard deviation (-3 SD) from the mean of the reference population are classified as moderately malnourished for any given measure. Children who are below -3 SD are classified as severely malnourished. All children whose z-score falls below -2 SD are classified as globally malnourished (9).

Underweight: Proportion of children with low weight for their age

Acute (wasting): Proportion of children with low weight for their height

[ix] The nutritional status of non-pregnant women who have not recently given birth (no child less than 2 months of age, in line with DHS guidelines) is ascertained using body mass index (BMI, $weight_{kg}/height_{m^2}$) (6). For women, 19 to 49 years of age, nutritional status is calculated through the use of BMI cutoffs while for adolescents, 10 to 18 years of age, BMI-for-age z-scores are used (6; 10; 11)..

Girls underweight: Severe underweight – BMI z-score < -3 SD; Moderate underweight – BMI z-score greater than or equal to -3 SD but less than -2 SD

Women underweight: Moderate and severe thin – BMI less than 17; Mildly thin – BMI greater than or equal to 17 but less than 18.5

Women overweight: Overweight – BMI greater than 23 but less than 25; Overweight and obese – BMI greater than or equal to 25

Highlights

- The proportion of households with inadequate dietary diversity increased at the end of 2011 and 2012. This could indicate a seasonal trend in household dietary patterns.
- Breastfeeding indicators did not change significantly between Rounds 8 and 9 or between the Post-Aus harvest seasons of 2011 and 2012.
- The prevalence of minimum dietary diversity and minimum acceptable diet fell significantly in Round 9 compared to Round 8. This is in line with the tendency of individuals to eat more diverse diets in the monsoon season and is consistent with FSNSP findings in previous years.
- The prevalence of wasting peaked between June and August in 2012 as it had between June and August of 2011.
- From the last three rounds, Haor had the highest proportion of chronic energy deficient (CED) women and Padma chars had the highest proportion of overweight women.

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