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BANGLADESH

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The Food Security and Nutrition Surveillance Project Round 3: October- December 2010

The Food Security and Nutritional Surveillance Project (FSNSP) was set-up to continuously provide up-to-date information on the food security, nutrition, and health situation in Bangladesh. This bulletin presents the preliminary findings from the third round of FSNSP conducted from October 4 to December 20, 2010 and compares them to second round of surveillance which took place from June 30 to August 31, 2010. This round covered 38 districts from the six key food insecure zones outlined in the 2004 Food security atlas of Bangladesh, a joint publication by the World Food Program (WFP) and Bangladesh Bureau of Statistics (BBS). The findings provide representative estimates of selected food security and nutrition indicators for these zones. The three rounds of surveillance each year were designed to assess the seasonal changes in these indicators in each zone.

The districts sampled for each zone are:

- Northwest (NW): Dinajpur, Lalmonirhat, Nilphamari, Panchaghar, Rangpur, & Thakurgaon
- Drought prone (DR): Naogaon, Chapai Nawabganj, Rajshahi, & Joypurhat
- Northern chars (NC): Bogra, Gaibandha, Kurigram, Sirajganj, & Jamalpur
- Haor basin (HB): Kishoreganj, Mymensingh, Netrokona, Habiganj, Sunamganj, Sylhet, & Brahmanbaria
- Coastal belt (CB): Chandpur, Chittagong, Lakshmipur, Noakhali, Barguna, Barisal, Bhola, Patuakhali, Bagerhat, Khulna, Satkhira, Madaripur, & Shariatpur
- Chittagong hill tracts (CHT): Rangamati, Bandarban, Khagrachari[1]

The third round of surveillance covered 6,597 households in 342 mauza of Bangladesh.

[1]The Chittagong hill tracts (CHT) are highly food insecure but were not sampled in the first and second round due to political tension in the area; however the Chittagong hill tracts was included in the third round and subsequently in these estimates.

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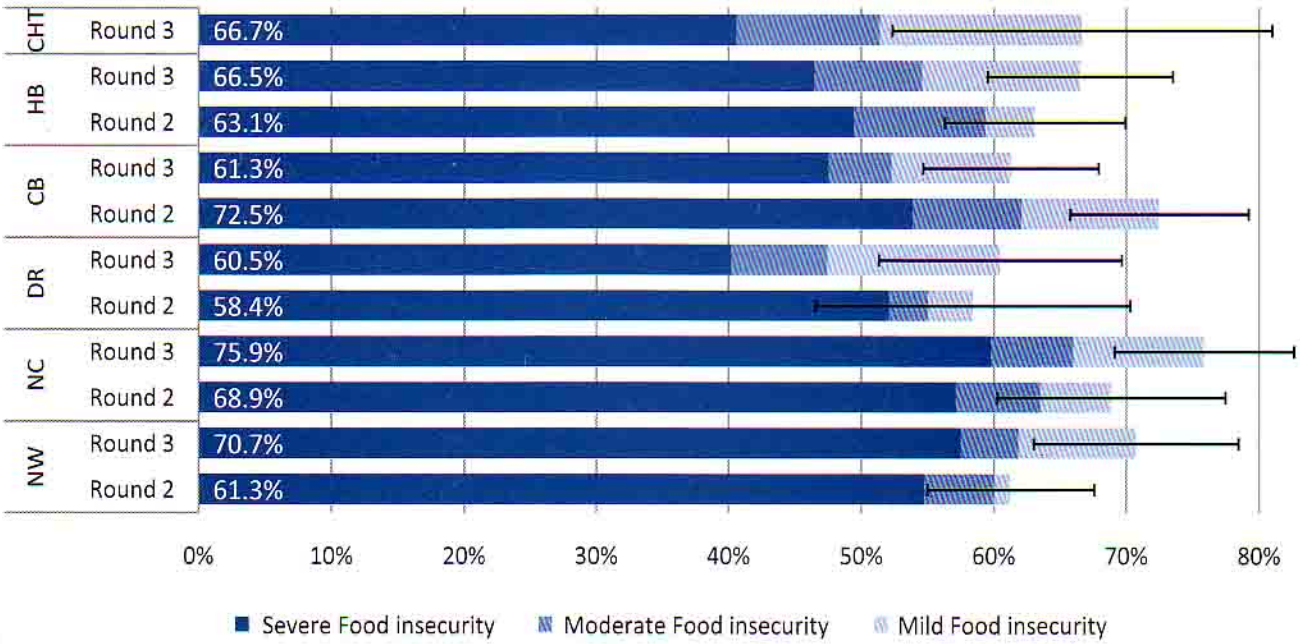
Anthropometry measurements were taken on 7,525 children under 5 years of age and their mothers. As was stated in the Round 2 preliminary results bulletin, FSNSP's second round of surveillance included 6,150 households in 315 mauza.

The results in this bulletin are presented in the form of bar graphs. In the graphs presented, the name of each zone is abbreviated (as given in the parenthesis above) and the data corresponding to second and third surveillance rounds are given as Round 2 and Round 3 respectively. Percentages given within the bars of each graph are for the overall prevalence estimates for that particular indicator (regardless of severity), and the error bars indicate the corresponding 95% confidence interval.

Food security across zones

Food security status was measured using a modified version of the Household Food Insecurity Assessment Survey (HFIAS) module developed by the Food and Nutrition Technical Assistance (FANTA) project. As shown in figure 1, the prevalence of food insecurity in all zones was higher during the third round of surveillance than it was during the second round except for the coastal belt zone, However, no change was statistically significant. The only statistically significant difference between zones is that the northern chars zone has a higher prevalence of food insecurity than the drought zone and coastal belt zone ($p<0.05$).

Figure 1: Food insecurity among households with children under 5 in BD



Price of food basket across zones

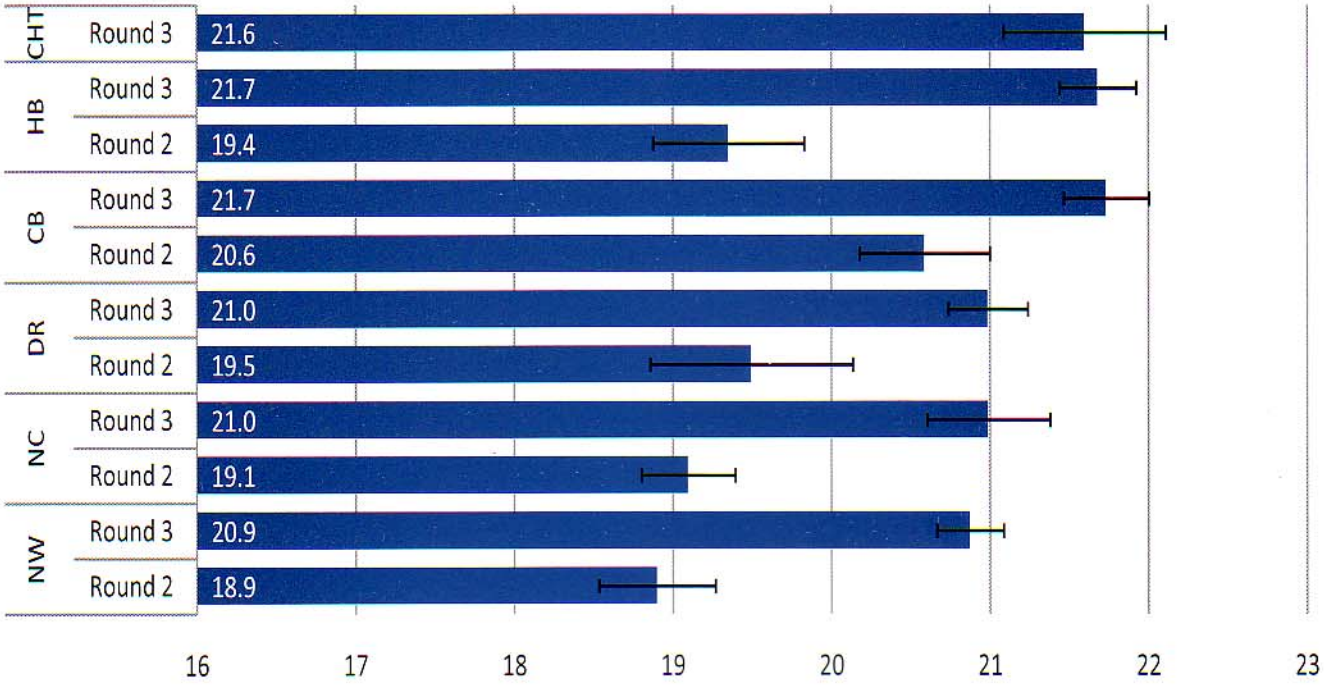
FSNSP records the prices of common food commodities in every community it samples. During analysis these prices are combined to create an indicator for food prices based on the average household food consumption patterns as described in the Report of the household income & expenditure survey 2005. For this measure, the cost of the per-person average daily amount of each item (in grams) for which FSNSP collected data was added together to create the price of the average Bangladeshi food consumption basket.

In the first and second surveillance rounds, FSNSP collected only information about major commodities (beef, egg, rice, atta, potato, moshur, khesari, mustard, soybean).[2]

A comparison of the prices of this food basket during round 2 and round 3 is depicted in Figure 2. The price of the food basket rose in all zones between the second and third rounds of surveillance and all changes were statistically significant. The average size of the increase was over Tk 1.5 per person/per day, an increase of slightly over 9%. The largest changes were observed in the haor basin, northern chars and northwest zones.

[2]Information on the amounts of each item in this basket can be found on page 45 of the BBS publication *Report of the household income & expenditure survey 2005.*

Figure 2: Percapita, daily average food cost (selected items)



Child malnutrition indicators across zones

Childhood malnutrition was estimated using anthropomorphic measurements of children under the age of 5, standardizing these results through use of the 2006 WHO reference population. FSNSP provides two estimates of the prevalence of global acute malnutrition - one based on weight-for-height z-scores (wasting) and the other based on mid-upper arm circumference (MUAC) z-scores, as well as an estimate of child underweight (weight-for-age) and chronic child malnutrition (height for age).

As shown in figure 3 below, third round results indicate a statistically significant difference between the lower levels of acute malnutrition found in the northwest and coastal belt zones, and the higher levels of acute malnutrition in the Chittagong hill tracts and northern chars zones. The prevalence of wasting has decreased in all zones in between the second and third rounds, but the reduction was only significant for the northwest, drought prone, and coastal belt zones.

FSNSP's estimates of global acute malnutrition based on MUAC, as given in Figure 4, were somewhat lower than the estimates based on weight-for-height, but the pattern was largely the same. Similar to the observed change in weight-for-height based prevalence estimates, MUAC based acute malnutrition prevalence estimates have decreased in all zones from the second to the third round, but the reduction between rounds was significant only for the northern chars and drought zones. There were no statistically significant differences between prevalence estimates between zones during the third round.

Figure 5 displays estimates of the prevalence of child underweight. During the third round, the prevalence of underweight was highest in the hoar basin (38.4%) followed by the Chittagong hill tracts (34.9%) and lowest in the drought prone zone (27.5%), and the difference between these zones was statistically significant. The prevalence of underweight has decreased in all zones between rounds two and three, and, except for the hoar basin, the reductions were statistically significant.

As shown in Figure 6, the hoar basin showed the highest prevalence of stunting (51%) and the drought prone zone showed the lowest prevalence (32.6%). During the third round the hoar basin has a higher prevalence of chronic malnutrition than coastal belt and drought prone zones and this difference was statistically significant. No changes between the two rounds of surveillance were found to be statistically significant.

Figure 3: Child acute malnutrition (WHZ, 0 to 59 months)

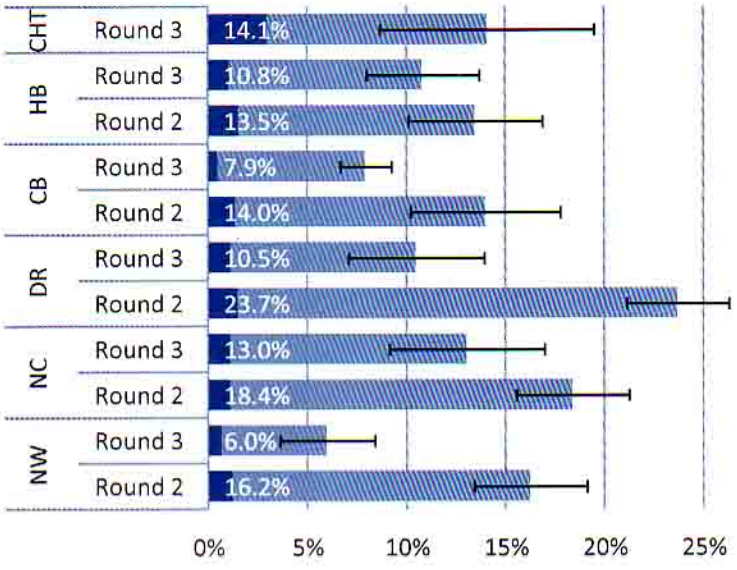


Figure 4: Child acute malnutrition (Z-MUAC, 3 to 59 months)

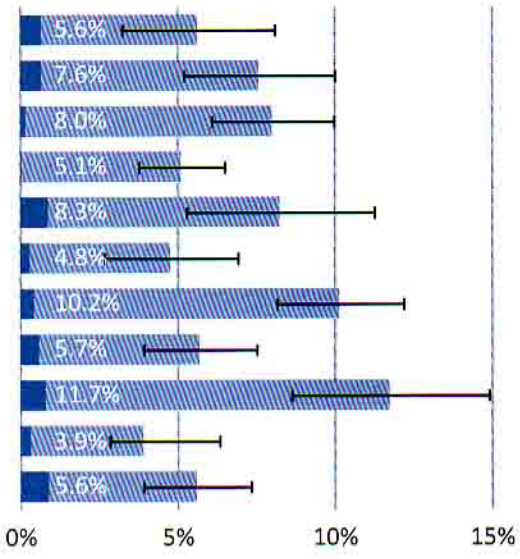


Figure 5: Child underweight (WAZ, 0 to 59 months)

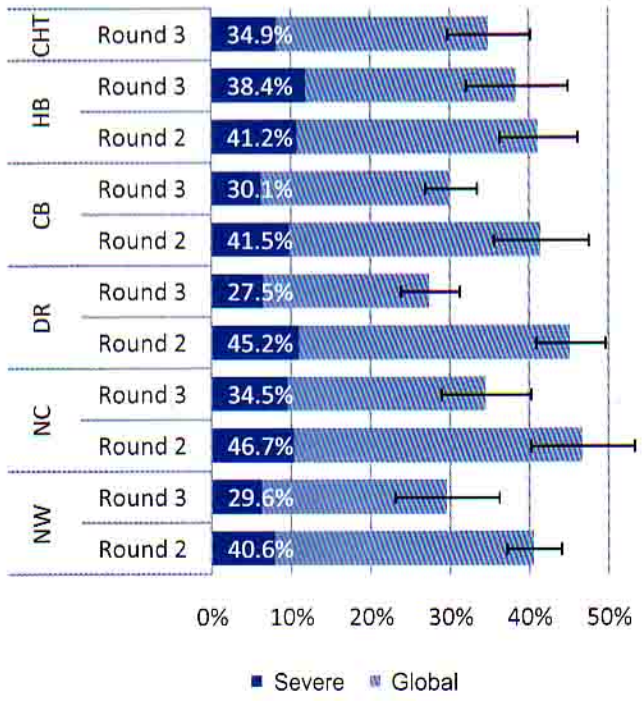
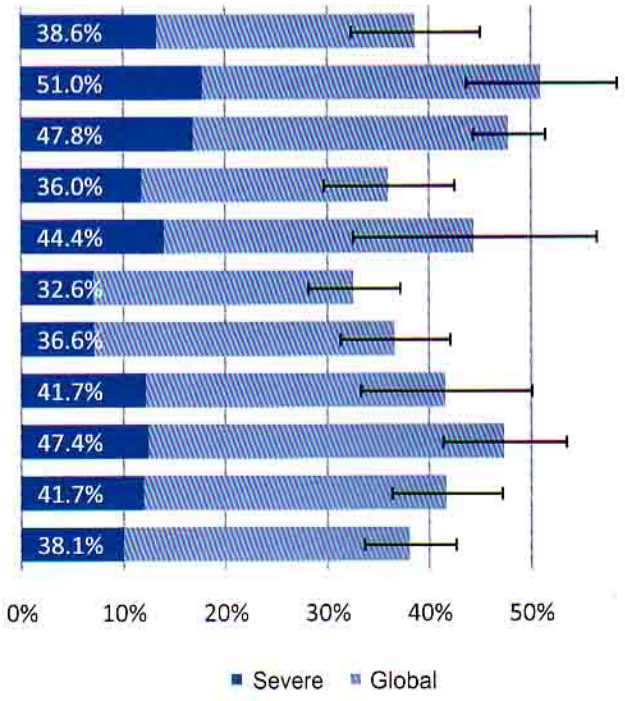


Figure 6: Child chronic malnutrition (WHZ, 0 to 59 months)



Maternal malnutrition indicators across zones

Maternal malnutrition was estimated using anthropomorphic measurements of mothers of children under the age of 5. Different cut-offs for BMI are used to ascertain both under nutrition and overweight and maternal MUAC was used as an alternative measure for under nutrition. Pregnant and recently delivered (gave birth within two months) mothers were excluded from BMI estimates for Round 3.

Estimates of maternal under nutrition (based on low BMI and low MUAC) decreased between rounds in

all zones (except the hoar basin) but no change was statistically significant. Maternal malnutrition was highest in hoar basin zone (27.5% - low MUAC, 40.9% - low BMI), and the prevalence of maternal malnutrition decreased in all zones except the haor basin between the second and third rounds.

Estimates of maternal overweight (BMI>23) was highest in Chittagong hill tracts (32.2%) and lowest in Northern chars (14%). The difference in prevalence of maternal overweight was statistically significant between the high levels observed in the Chittagong hill tracts and the lower levels found in the northern chars, drought prone, and haor basin zones. In line with the slight decrease in maternal malnutrition between the two rounds, maternal overweight rose in all zones between rounds two and three. However, the only statistically significant difference was that the Chittagong hill tracts had a higher prevalence of overweight than Northern chars, Drought zone and hoar basin.

Figure 7: Low MUAC

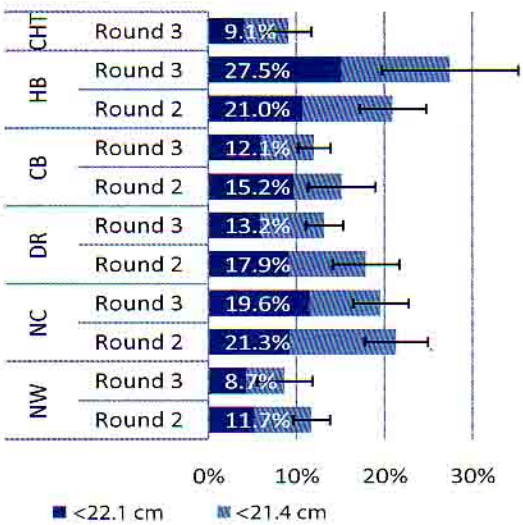


Figure 8: Low BMI

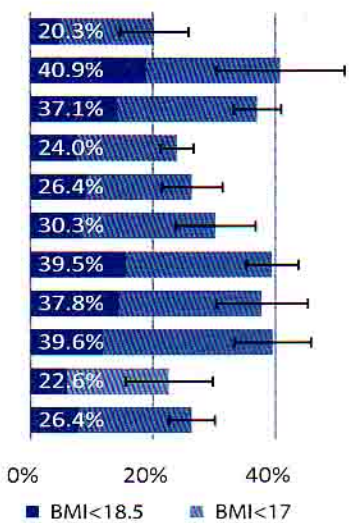
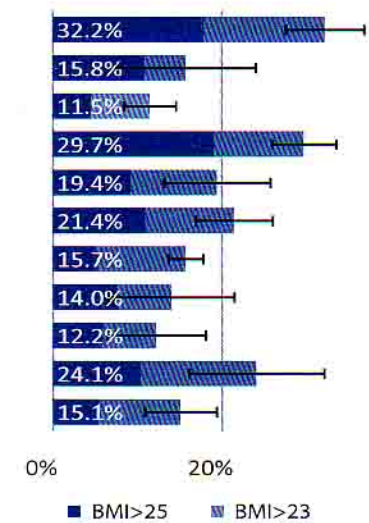


Figure 9: High BMI



Changes in child morbidity

Child morbidity was estimated by asking the mothers of children under five if their child had been sick in the last 15 days with any of four common illnesses (diarrhea, fever, cough/cold and difficulty breathing).

As was seen in the results from the second round of surveillance, the symptoms children suffered from most frequently were cold/cough and fever. The incidence of fever decreased in all zones in Round 3, but change between rounds was significant only in the northwest, northern chars and drought prone zones. Among zones, the coastal belt showed the highest prevalence of fever (56.9 %) and the drought prone zone showed the lowest prevalence of fever (43.8 %). The difference between these two zone is statistically significant.

Between rounds two and three, the proportion of children who had suffered from a cough/cold had increased in all zones, but the difference was only significant in the northwest and hoar basin zones. During the third round it was found that the proportion of children suffering from cough/cold was highest in the northwest (82.3%) and lowest in the Chittagong hill tracts (65.2 %) followed by the hoar basin (71.2 %); this difference was statistically significant.

In contrast to cough/cold, and fever, fewer children suffered from diarrhea and difficulty breathing. Between the second and third rounds, the proportion of children who suffered from diarrhea had increased in the northwest, coastal belt, and hoar basin zones and decreased in the northern chars and drought prone zone. Only the observed increase in the northwest zone was statistically significant. During the third round, the proportion of children suffering from diarrhea was highest in the northwest zone (25.1 %) followed by the coastal belt (24.5 %) and lowest in the Chittagong hill tracts (8.5 %). These differences were statistically significant.

The proportion of children suffering from difficulty breathing only increased in the northwest zone and decreased slightly in rest of the zones; no change or difference between zones was statistically significant.

Figure 10: Fever

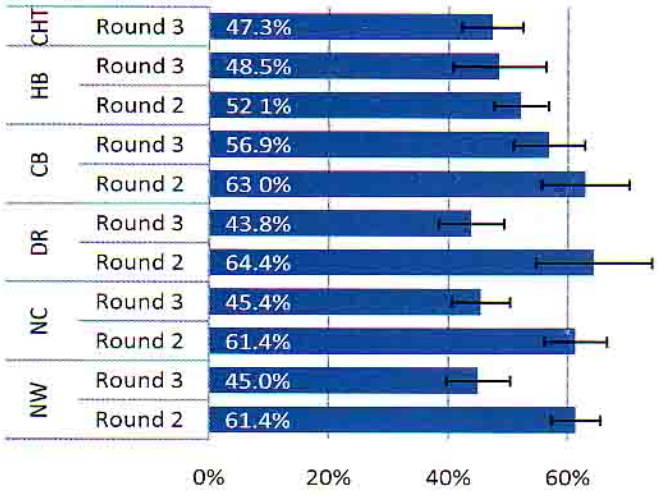


Figure 11: Cough/cold

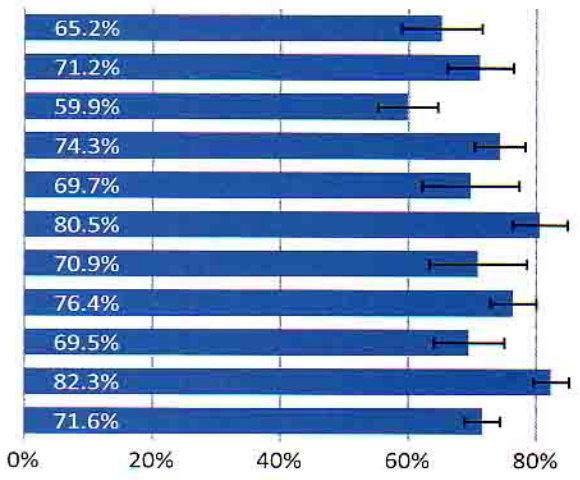


Figure 12: Diarrhea

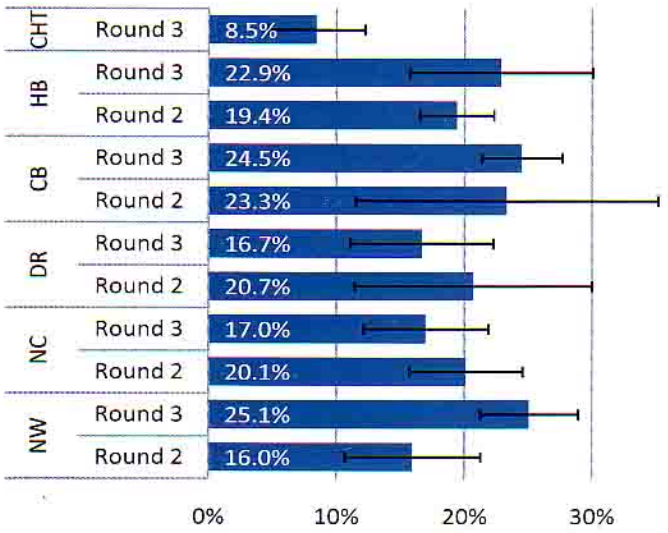
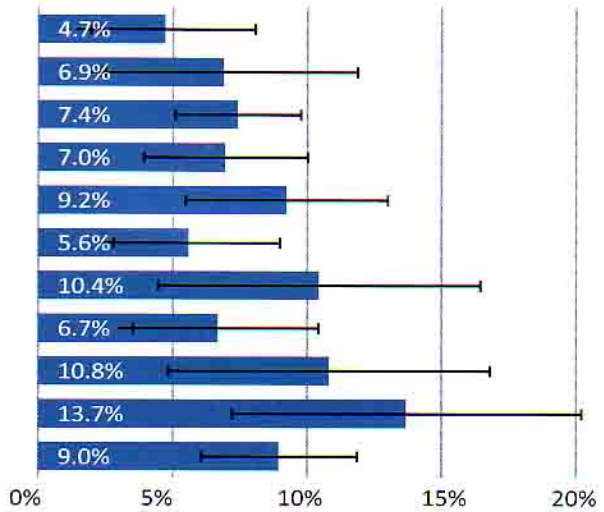


Figure 13: Difficulty breathing



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