

## V. NUTRITION

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### Low Birth Weight

Weight at birth is a good indicator not only of a mother's health and nutritional status but also for the new-born's chances for survival, growth, long-term health and psychosocial development. Low birth weight (defined as less than 2,500 grams) carries a range of grave health risks for children. Babies who were undernourished in the womb face a greatly increased risk of dying during their early days, months and years. Those who survive may have impaired immune function and increased risk of disease; they are likely to remain undernourished with reduced muscle strength, throughout their lives, and suffer a higher incidence of diabetes and heart disease in later life. Children born with low birth weight also risk a lower IQ and cognitive disabilities, affecting their performance in school and their job opportunities as adults.

In the developing world, low birth weight shoots primarily from the mother's poor health and nutrition. Three factors have most impact:

- ✓ the mother's poor nutritional status before conception,
- ✓ short stature (due mostly to under nutrition and infections during her childhood), and
- ✓ poor nutrition during pregnancy,

Inadequate weight gain during pregnancy is particularly important since it accounts for a large proportion of foetal growth retardation. Moreover, diseases such as diarrhoea and malaria, which are common in many developing countries, can significantly impair foetal growth if the mother becomes infected while pregnant.

In developing countries like Pakistan, teenagers who give birth when their own bodies have yet to finish growing, run a higher risk of bearing low birth weight babies.

One of the major challenges in measuring the incidence of low birth weight is that more than half of infants in the countries like Pakistan (developing countries) are not weighed at birth. In the past, most estimates of low birth weight for developing countries were based on data compiled from health facilities. However, these estimates are biased for most developing countries because the majority of newborns are not delivered in facilities, and those who are represent only a selected sample of all births.

Because many infants are not weighed at birth and those who are weighed may be a biased sample of all births, the reported birth weights usually cannot be used to estimate the prevalence of low birth weight among all children. Therefore, the percentage of births weighing below 2500 grams is estimated from two items in the questionnaire: the mother's assessment of the child's size at birth (i.e., very small, smaller than average, average, larger than average, very large) and the mother's recall of the child's weight or the weight as recorded on a health card if the child was weighed at birth.<sup>15</sup>

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<sup>15</sup> For a detailed description of the methodology, see Boerma, J. T., Weinstein, K. I., Rutstein, S.O., and Sommerfelt, A. E. , 1996. Source of Data on Birth Weight in Developing Countries in "Bulletin of the World Health Organization",

**Table NU.1: Low birth weight infants**

Percentage of last live-born children in the last two years that are estimated to have weighed below 2,500 grams at birth and percentage of live births weighed at birth, Punjab, 2014.

	Percent distribution of births by mother's assessment of size at birth					Total	Percentage of live births:		Number of last live-born children in the last two years
	Very small	Smaller than average	Average	Larger than average or very large	DK		Below 2,500 grams <sup>1</sup>	Weighed at birth <sup>2</sup>	
<b>Punjab</b>	3.9	16.6	70.2	8.4	0.8	100.0	29.4	25.6	10,653
<b>Area of residence</b>									
Rural	3.9	17.7	69.9	7.5	1.1	100.0	29.9	18.8	7,369
All Urban	4.1	14.4	70.9	10.3	0.3	100.0	28.3	41.0	3,284
Major Cities	4.1	12.6	71.9	11.2	0.2	100.0	27.4	49.1	1,692
Other Urban	4.1	16.3	69.9	9.3	0.5	100.0	29.3	32.3	1,592
<b>Mother's age at birth</b>									
Less than 20 years	4.2	17.5	69.5	7.7	1.1	100.0	30.1	19.0	694
20-34 years	3.9	16.2	70.5	8.6	0.8	100.0	29.2	26.9	8,660
35-49 years	4.1	19.1	68.5	7.5	0.9	100.0	30.8	20.3	1,299
<b>Birth order</b>									
1	4.2	15.9	70.8	8.3	0.8	100.0	29.3	32.5	2,431
2-3	3.9	16.1	71.2	8.2	0.7	100.0	29.2	28.3	4,392
4-5	3.7	17.2	69.5	8.6	1.1	100.0	29.5	21.0	2,448
6+	4.1	18.8	67.3	8.8	1.1	100.0	30.4	13.0	1,382
<b>Mother's education<sup>a</sup></b>									
None/pre-school	4.1	19.0	68.7	7.2	1.0	100.0	30.8	10.5	4,816
Primary	4.1	16.8	70.9	7.4	0.7	100.0	29.7	20.4	1,961
Middle	3.8	16.0	71.7	7.6	0.8	100.0	29.1	35.8	1,096
Secondary	4.0	11.8	72.7	10.9	0.6	100.0	27.0	42.8	1,467
Higher	3.0	13.7	70.6	12.1	0.6	100.0	27.1	61.2	1,311
<b>Wealth index quintile</b>									
Lowest	3.7	22.2	67.4	5.6	1.1	100.0	32.2	6.0	2,327
Second	4.4	18.0	68.8	8.0	0.9	100.0	30.4	12.3	2,166
Middle	4.1	15.1	72.0	7.6	1.1	100.0	28.8	21.6	2,144
Fourth	4.5	13.6	72.4	8.9	0.6	100.0	28.3	35.2	2,065
Highest	2.9	13.5	70.7	12.5	0.4	100.0	27.0	58.0	1,951
<b>Division</b>									
Bahawalpur	4.7	21.5	61.4	10.3	1.9	100.0	31.9	15.5	1,068
D.G. Khan	3.6	28.0	62.1	5.9	0.4	100.0	34.8	6.0	1,181
Faisalabad	2.7	11.6	77.9	7.4	0.4	100.0	26.5	22.2	1,237
Gujranwala	4.8	15.4	72.3	7.3	0.2	100.0	29.6	30.7	1,578
Lahore	6.1	14.8	66.2	12.1	0.8	100.0	29.5	35.8	1,914
Multan	1.6	13.8	75.4	7.9	1.4	100.0	26.6	20.7	1,162
Rawalpindi	3.9	14.1	70.5	9.9	1.6	100.0	27.9	50.8	882
Sahiwal	3.7	16.9	72.0	7.2	0.3	100.0	29.5	21.4	827
Sargodha	1.8	14.9	77.5	4.5	1.2	100.0	27.8	22.7	804

<sup>1</sup> MICS indicator 2.20 - Low-birthweight infants

<sup>2</sup> MICS indicator 2.21 - Infants weighed at birth

<sup>a</sup> Total includes 2 unweighted cases of mother's education missing

Overall, about 26 percent of births were weighed at birth and approximately 29 percent of infants are estimated to weigh less than 2,500 grams at birth (Table NU.1). Among divisions, Rawalpindi had the lowest proportion of low birth weight babies (27%) and the highest proportion was in DG Khan division (35%). The prevalence of low birth weight does not vary considerably by urban and rural areas or mother's education.

## Nutritional Status

Children's nutritional status is a reflection of their overall health. When children have access to an adequate food supply, are not exposed to repeated illness, and are well cared for, they reach their growth potential and are considered well nourished.

Under nutrition is associated with more than half of all child deaths worldwide. Undernourished children are more likely to die from common childhood ailments, and for those who survive, have recurring sicknesses and faltering growth. Three-quarters of children who die from causes related to malnutrition were only mildly or moderately malnourished – showing no outward sign of their vulnerability. The MDG target is to reduce by half the proportion of people who suffer from hunger between 1990 and 2015. A reduction in the prevalence of malnutrition will also assist in the goal to reduce child mortality.

In a well-nourished population, there is a reference distribution of height and weight for children under age five. Under-nourishment in a population can be gauged by comparing children to a reference population. The reference population used in this report is based on the WHO growth standards<sup>16</sup>. Each of the three nutritional status indicators – weight-for-age, height-for-age, and weight-for-height – can be expressed in standard deviation units (z-scores) from the median of the reference population.

**Weight-for-age** is a measure of both acute and chronic malnutrition. Children whose weight-for-age is more than two standard deviations below the median weight of the reference population are considered *moderately or severely underweight*, while those whose weight-for-age is more than three standard deviations below the median are classified as *severely underweight*.

**Height-for-age** is a measure of linear growth. Children whose height-for-age is more than two standard deviations below the median height of the reference population are considered short for their age and are classified as *moderately or severely stunted*. Those whose height-for-age is more than three standard deviations below the median are classified as *severely stunted*. Stunting is a reflection of chronic malnutrition as a result of failure to receive adequate nutrition over a long period and recurrent or chronic illness.

**Weight-for-height** can be used to assess wasting and overweight status. Children whose *weight-for-height* is more than two standard deviations below the median weight of the reference population are classified as *moderately or severely wasted*, while those who fall more than three standard deviations below the median are classified as *severely wasted*. Wasting is usually the result of a recent nutritional deficiency. The indicator of wasting may exhibit significant seasonal shifts associated with changes in the availability of food or disease prevalence.

Children whose weight-for-height is more than two standard deviations above the median reference population are classified as moderately or severely overweight.

In MICS5, weights and heights of all children under 5 years of age were measured using the anthropometric equipment recommended<sup>17</sup> by UNICEF. Findings in this section are based on the results of these measurements. Table NU.2 shows percentages of children classified into each of the above described categories and mean z-scores for all three anthropometric indicators.

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<sup>16</sup> [http://www.who.int/childgrowth/standards/technical\\_report](http://www.who.int/childgrowth/standards/technical_report)

<sup>17</sup> MICS Supply Procurement Instructions: <http://mics.unicef.org/tools#survey-design>

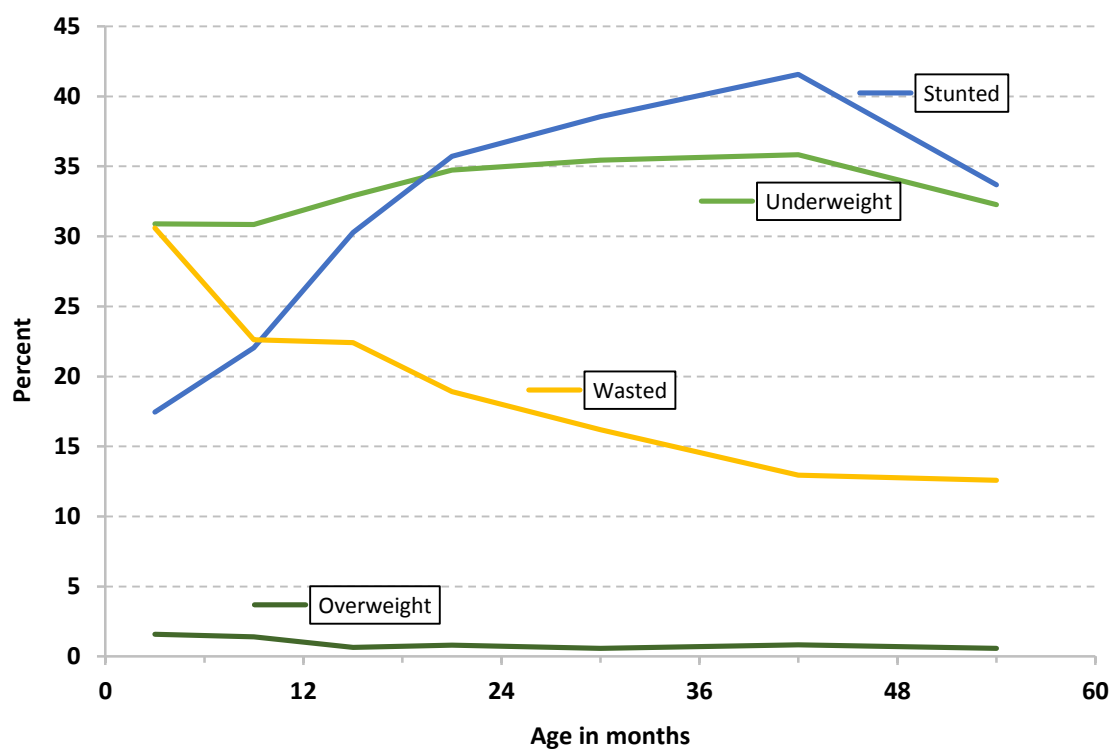
Children whose full birth date (month and year) were not obtained, and children whose measurements were outside a plausible range are excluded from Table NU.2. Children are excluded from one or more of the anthropometric indicators when their weights and heights have not been measured, whichever applicable. For example, if a child has been weighed but his/her height has not been measured, the child is included in underweight calculations, but not in the calculations for stunting and wasting. Percentages of children by age and reasons for exclusion are shown in the data quality Tables DQ.10, DQ.11, and DQ.12 in Appendix – E. These tables show that due to incomplete dates of birth, implausible measurements, and/or missing weight and/or height, 3.4 percent of children have been excluded from calculations of the weight-for-age, 4.2 percent from the height-for-age, and 3.8 percent for the weight-for-height.

Percentage of interviews completed for eligible children is shown in Table DQ.3. The completeness of reporting of both year and month is 99 percent for interviews conducted for children under 5 (Table DQ.4). There was no heaping in the weight measurements, however, a slight heaping was observed in the height measurements where interviewers preferred the digits zero, two and five (DQ.13).

Almost one in three children under age five are moderately or severely underweight (34%) and 11 percent are classified as severely underweight (Table NU.2). Thirty four percent of children are moderately or severely stunted or too short for their age and 18 percent of children are moderately or severely wasted or too thin for their height, whereas less than 1 percent are overweight or too heavy for their height.

Boys appear to be slightly more likely to be underweight, stunted, and wasted than girls. Children in rural areas are more likely to be underweight and stunted than in other urban areas and major cities. Among divisions, children in DG Khan division are twice more likely to be underweight and stunted (44% and 47%) than children in Rawalpindi division (21% respectively). All three anthropometric indicators are found to be better in Rawalpindi division. Underweight, stunting and wasting indicators are inversely correlated with mother's education and wealth. Among women with higher education, 13 percent of children are stunted, 15 percent are underweight and 12 percent are wasted compared to more than 40 percent for stunting and underweight among children whose mother have pre-school or no education. Nearly half of children living in the households in the lowest quintile are stunted and the same proportion of children is underweight compared to 17 percent of children living in the households in the highest quintile that are stunted and underweight. The age pattern shows that a higher percentage of children age 36-47 months are undernourished as prevalence of underweight and stunting is higher in this age group in comparison to children who are younger (Figure NU.1).

**Figure NU.1: Underweight, stunted, wasted and overweight children under age 5 (moderate and severe), MICS Punjab, 2014**



**Table NU.2: Nutritional status of children**

Percentage of children under age 5 by nutritional status according to three anthropometric indices: weight for age, height for age, and weight for height, Punjab, 2014.

	Weight for age			Number of children under age 5	Height for age			Number of children under age 5	Weight for height			Number of children under age 5	
	Underweight		Mean Z-Score (SD)		Stunted		Mean Z-Score (SD)		Wasted		Mean Z-Score (SD)		
	Percent below - 2 SD <sup>1</sup>	- 3 SD <sup>2</sup>			Percent below - 2 SD <sup>3</sup>	- 3 SD <sup>4</sup>			Percent below - 2 SD <sup>5</sup>	- 3 SD <sup>6</sup>			
													Percent above + 2 SD <sup>7</sup>
<b>Punjab<sup>a</sup></b>	33.7	11.3	-1.6	26,490	33.5	13.3	-1.4	26,280	17.5	4.4	0.8	-1.0	26,421
<b>Area of residence</b>													
Rural	36.3	12.9	-1.6	18,343	36.7	15.1	-1.6	18,195	18.2	4.8	0.8	-1.0	18,284
All Urban	27.7	7.7	-1.3	8,147	26.3	9.2	-1.2	8,085	16.1	3.6	1.0	-0.9	8,137
Major Cities	26.3	6.9	-1.3	4,162	25.0	8.4	-1.1	4,143	15.5	3.3	1.1	-0.9	4,166
Other Urban	29.2	8.7	-1.4	3,985	27.7	10.2	-1.2	3,942	16.6	4.0	0.9	-1.0	3,971
<b>Sex</b>													
Male	33.9	11.4	-1.6	13,410	33.9	13.5	-1.4	13,290	18.8	5.0	0.9	-1.0	13,356
Female	33.4	11.1	-1.6	13,080	33.1	13.2	-1.4	12,990	16.2	3.8	0.7	-1.0	13,065
<b>Age</b>													
0-5 months	30.9	12.8	-1.5	2,263	17.5	6.8	-0.7	2,238	30.6	11.9	1.6	-1.3	2,165
6-11 months	30.8	11.0	-1.4	2,947	22.0	7.9	-1.0	2,926	22.6	6.6	1.4	-1.1	2,941
12-23 months	33.8	12.3	-1.6	5,170	33.0	13.2	-1.4	5,116	20.7	5.5	0.7	-1.1	5,159
12-17 months	32.9	11.7	-1.5	2,583	30.3	11.3	-1.3	2,562	22.4	5.9	0.6	-1.2	2,580
18-23 months	34.7	12.9	-1.6	2,587	35.7	15.0	-1.6	2,554	18.9	5.1	0.8	-1.1	2,580
24-35 months	35.4	12.3	-1.6	5,150	38.6	16.5	-1.7	5,101	16.2	3.9	0.6	-1.0	5,132
36-47 months	35.8	11.5	-1.6	5,637	41.6	16.1	-1.7	5,601	13.0	2.0	0.8	-0.9	5,688
48-59 months	32.3	8.6	-1.5	5,324	33.7	13.2	-1.5	5,298	12.6	2.2	0.6	-0.9	5,336
<b>Mother's education</b>													
None/pre-school	42.2	16.2	-1.8	12,646	43.0	19.2	-1.8	12,529	20.0	5.4	0.7	-1.1	12,639
Primary	33.8	10.2	-1.6	4,820	33.3	11.5	-1.4	4,782	17.7	3.9	0.5	-1.0	4,798
Middle	26.9	6.7	-1.4	2,658	27.4	8.9	-1.3	2,642	15.2	4.3	1.0	-0.9	2,658
Secondary	23.3	5.4	-1.2	3,440	21.2	6.2	-1.0	3,414	14.5	3.1	1.1	-0.9	3,418
Higher	14.8	3.0	-0.9	2,927	12.9	3.2	-0.7	2,914	12.3	2.6	1.5	-0.7	2,908
<b>Wealth index quintile</b>													
Lowest	47.7	20.3	-2.0	6,072	49.4	24.1	-2.0	5,993	21.4	6.1	0.6	-1.2	6,045
Second	39.0	13.3	-1.7	5,362	39.4	15.9	-1.7	5,323	18.7	5.1	0.6	-1.1	5,350
Middle	32.2	9.5	-1.5	5,162	31.1	10.9	-1.4	5,126	18.5	4.1	0.7	-1.0	5,153
Fourth	28.0	7.0	-1.4	5,212	26.3	8.3	-1.2	5,186	15.7	3.9	1.0	-0.9	5,199
Highest	17.3	4.1	-1.0	4,682	16.9	4.7	-0.8	4,652	12.2	2.4	1.4	-0.7	4,673

**Table NU.2: Nutritional status of children**

Percentage of children under age 5 by nutritional status according to three anthropometric indices: weight for age, height for age, and weight for height, Punjab, 2014.

Division	Weight for age			Number of children under age 5	Height for age			Number of children under age 5	Weight for height			Number of children under age 5	
	Underweight		Mean Z-Score (SD)		Stunted		Mean Z-Score (SD)		Wasted		Mean Z-Score (SD)		
	Percent below				Percent below				Percent below				
	- 2 SD <sup>1</sup>	- 3 SD <sup>2</sup>			- 2 SD <sup>3</sup>	- 3 SD <sup>4</sup>			- 2 SD <sup>5</sup>	- 3 SD <sup>6</sup>			Percent above + 2 SD <sup>7</sup>
Bahawalpur	42.6	16.6	-1.8	2,940	41.3	19.2	-1.7	2,900	20.8	6.0	1.0	-1.2	2,932
D.G. Khan	43.9	17.3	-1.9	3,012	46.6	23.0	-1.9	2,977	18.8	4.4	1.0	-1.1	3,017
Faisalabad	33.8	10.7	-1.5	3,210	29.5	10.7	-1.3	3,193	21.0	6.7	1.2	-1.1	3,173
Gujranwala	24.5	6.8	-1.3	4,006	28.5	8.8	-1.3	3,985	13.2	3.2	0.8	-0.8	3,984
Lahore	31.2	9.6	-1.5	4,452	31.7	11.8	-1.4	4,414	15.2	3.4	0.8	-0.9	4,465
Multan	36.8	12.6	-1.7	2,884	34.7	14.8	-1.5	2,856	20.5	5.0	0.9	-1.1	2,878
Rawalpindi	21.4	5.5	-1.2	2,079	21.4	6.6	-1.0	2,069	13.3	2.6	1.1	-0.8	2,076
Sahiwal	36.0	12.2	-1.6	1,980	34.0	13.2	-1.5	1,971	18.3	4.3	0.2	-1.1	1,977
Sargodha	34.8	11.3	-1.6	1,927	33.3	11.8	-1.5	1,916	18.5	4.1	0.3	-1.1	1,919
Punjab <sup>a</sup>	33.7	11.3	-1.6	26,490	33.5	13.3	-1.4	26,280	17.5	4.4	0.8	-1.0	26,421

<sup>1</sup> MICS indicator 2.1a and MDG indicator 1.8 - Underweight prevalence (moderate and severe)

<sup>2</sup> MICS indicator 2.1b - Underweight prevalence (severe)

<sup>3</sup> MICS indicator 2.2a - Stunting prevalence (moderate and severe)

<sup>4</sup> MICS indicator 2.2b - Stunting prevalence (severe)

<sup>5</sup> MICS indicator 2.3a - Wasting prevalence (moderate and severe)

<sup>6</sup> MICS indicator 2.3b - Wasting prevalence (severe)

<sup>7</sup> MICS indicator 2.4 - Overweight prevalence

<sup>a</sup> Number of children under age 5 in each case differ as children are excluded from one or more anthropometric indicators when their weights or heights have not been measured

## Breastfeeding and Infant and Young Child Feeding

Proper feeding of infants and young children can increase their chances of survival. It can also promote optimal growth and development, especially in the critical window from birth to 2 years of age. Breastfeeding for the first few years of life protects children from infection, provides an ideal source of nutrients, and is economical and safe. However, many mothers don't start to breastfeed early enough, do not breastfeed exclusively for the recommended 6 months or stop breastfeeding too soon. There are often pressures to switch to infant formula, which can contribute to growth faltering and micronutrient malnutrition and can be unsafe if hygienic conditions, including safe drinking water, are not readily available. Studies have shown that, in addition to continued breastfeeding, consumption of appropriate, adequate and safe solid, semi-solid and soft foods from the age of 6 months onwards leads to better health and growth outcomes, with potential to reduce stunting during the first two years of life.<sup>18</sup>

UNICEF and WHO recommend that infants be breastfed within one hour of birth, breastfed exclusively for the first six months of life and continue to be breastfed up to 2 years of age and beyond.<sup>19</sup> Starting at 6 months, breastfeeding should be combined with safe, age-appropriate feeding of solid, semi-solid and soft foods.<sup>20</sup> A summary of key guiding principles<sup>21, 22</sup> for feeding 6-23 month olds is provided in the table on next page along with proximate measures for these guidelines.

The guiding principles for which proximate measures and indicators exist, are:

- (i) continued breastfeeding;
- (ii) appropriate frequency of meals (but not energy density); and
- (iii) appropriate nutrient content of food.

Feeding frequency is used as proxy for energy intake, requiring children to receive a minimum number of meals/snacks (and milk feeds for non-breastfed children) for their age. Dietary diversity is used to ascertain the adequacy of the nutrient content of the food (not including iron) consumed. For dietary diversity, seven food groups were created for which a child consuming at least four of these is considered to have a better quality diet. In most populations, consumption of at least four food groups means that the child has a high likelihood of consuming at least one animal-source food and at least one fruit or vegetable, in addition to a staple food (grain, root or tuber).<sup>23</sup>

These three dimensions of child feeding are combined into an assessment of the children who received appropriate feeding, using the indicator of "minimum acceptable diet". To have a minimum acceptable diet in the previous day, a child must have received:

- (i) the appropriate number of meals/snacks/milk feeds;
- (ii) food items from at least 4 food groups; and
- (iii) breastmilk or at least 2 milk feeds (for non-breastfed children).

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<sup>18</sup> Bhutta Z. et al. (2013). *Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost?* The Lancet June 6, 2013.

<sup>19</sup> WHO (2003). *Implementing the Global Strategy for Infant and Young Child Feeding. Meeting Report Geneva, 3-5 February 2003.*

<sup>20</sup> WHO (2003). *Global Strategy for Infant and Young Child Feeding.*

<sup>21</sup> PAHO (2003). *Guiding principles for complementary feeding of the breastfed child.*

<sup>22</sup> WHO (2005). *Guiding principles for feeding non-breastfed children 6-24 months of age*

<sup>23</sup> WHO (2008). *Indicators for assessing infant and young child feeding practices. Part 1: Definitions.*



Table	Guiding Principle (age 6-23 months)	Proximate measures
NU.4	Continue frequent, on-demand breastfeeding for two years and beyond	Breastfed in the last 24 hours
NU.6	Appropriate frequency and energy density of meals	<b>Breastfed children</b> Depending on age, two or three meals/snacks provided in the last 24 hours  <b>Non-breastfed children</b> Four meals/snacks <u>and/or milk feeds</u> provided in the last 24 hours
NU.6	Appropriate nutrient content of food	Four food groups <sup>24</sup> eaten in the last 24 hours
na	Appropriate amount of food	No standard indicator exists
na	Appropriate consistency of food	No standard indicator exists
na	Use of vitamin-mineral supplements or fortified products for infant and mother	No standard indicator exists
NU.9	Practice good hygiene and proper food handling	While it was not possible to develop indicators to fully capture programme guidance, one standard indicator does cover part of the principle: Not feeding with a bottle with a nipple
na	Practice responsive feeding, applying the principles of psycho-social care	No standard indicator exists

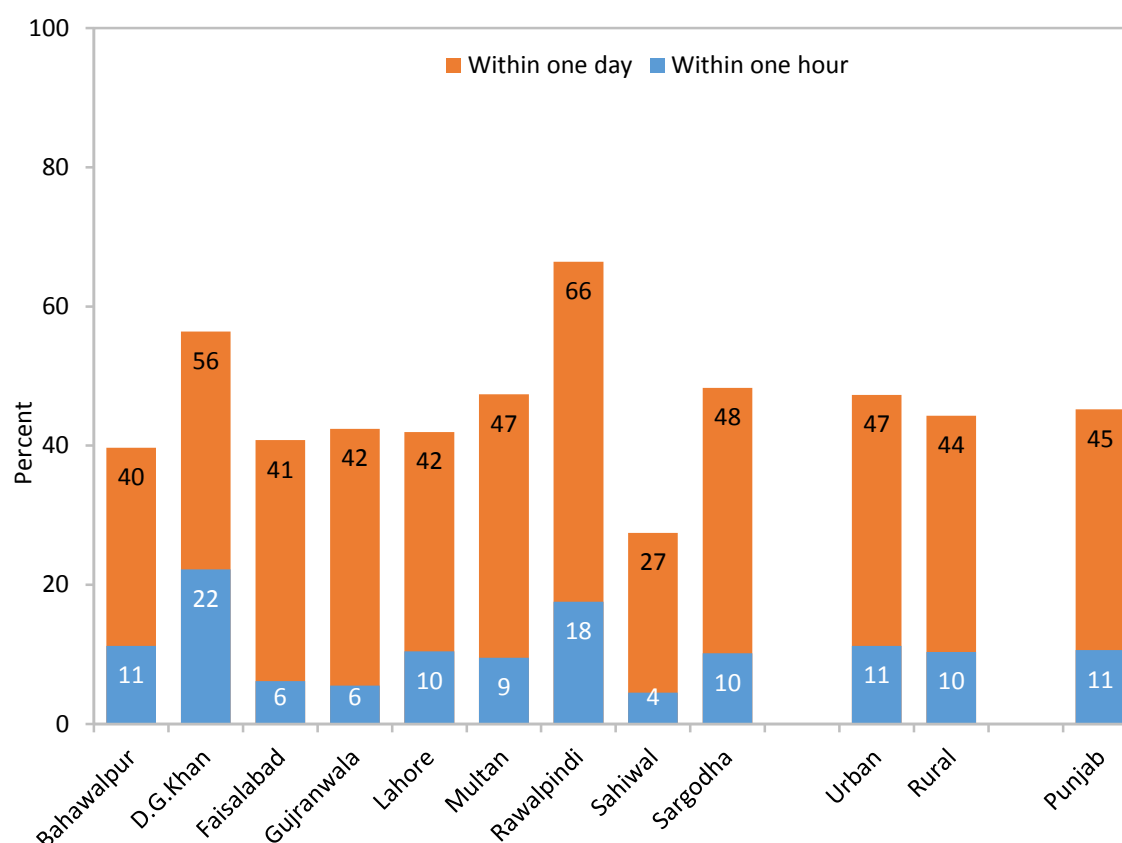
Table NU.3 is based on mothers' report of what their last-born child, born in the last two years, was fed in the first few days of life. It indicates the proportion who were ever breastfed, those who were first breastfed within one hour and one day of birth, and those who received a prelacteal feed.<sup>25</sup> Although a very important step in management of lactation and establishment of a physical and emotional relationship between the baby and the mother, only 11 percent of babies are breastfed for the first time within one hour of birth, while 45 percent of newborns start breastfeeding within one day of birth. By division, 66 percent of babies in Rawalpindi division were breastfed within one day of birth compared to only 28 percent of babies in Sahiwal. The data also show that 75 percent of newborns receive prelacteal feed. The findings are presented in Figure NU.2 by division and area of residence.

<sup>24</sup> Food groups used for assessment of this indicator are 1) Grains, roots and tubers, 2) legumes and nuts, 3) dairy products (milk, yogurt, cheese), 4) flesh foods (meat, fish, poultry and liver/organ meats), 5) eggs, 6) vitamin-A rich fruits and vegetables, and 7) other fruits and vegetables.

<sup>25</sup> Prelacteal feed refers to the provision any liquid or food, other than breastmilk, to a newborn during the period when breastmilk flow is generally being established (estimated here as the first 3 days of life).

<b>Table NU.3: Initial breastfeeding</b>					
Percentage of last live-born children in the last two years who were ever breastfed, breastfed within one hour of birth and within one day of birth, and percentage who received a prelacteal feed, Punjab, 2014.					
	<b>Percentage who were first breastfed:</b>			Percentage who received a prelacteal feed	Number of last live-born children in the last two years
	Percentage who were ever breastfed <sup>1</sup>	Within one hour of birth <sup>2</sup>	Within one day of birth		
<b>Punjab</b>	93.7	10.6	45.2	74.5	10,653
<b>Area of residence</b>					
Rural	93.9	10.3	44.3	74.4	7,369
All Urban	93.3	11.2	47.3	74.8	3,284
Major Cities	93.8	11.9	50.3	73.2	1,692
Other Urban	92.8	10.5	44.1	76.5	1,592
<b>Months since last birth</b>					
0-11 months	93.4	10.0	42.5	74.6	5,546
12-23 months	94.0	11.3	48.2	74.4	5,107
<b>Assistance at delivery</b>					
Skilled attendant	93.4	9.8	42.3	75.9	6,894
Traditional birth attendant	95.4	11.9	50.9	73.3	3,535
Other	97.3	19.5	59.5	65.5	173
No one/Missing	(7.3)	(0.0)	(3.6)	(7.3)	52
<b>Place of delivery</b>					
Home	95.6	12.9	51.8	73.3	4,125
Health facility	93.2	9.2	41.4	75.9	6,473
Public	93.7	11.8	49.9	70.9	1,909
Private	93.0	8.1	37.8	77.9	4,565
Other/DK/Missing	12.7	4.0	8.6	9.0	55
<b>Mother's education<sup>a</sup></b>					
None/pre-school	93.7	11.5	45.4	71.7	4,816
Primary	94.6	9.1	45.0	77.7	1,961
Middle	93.0	8.7	45.9	77.4	1,096
Secondary	93.8	10.4	45.8	76.4	1,467
Higher	93.1	11.3	43.8	75.6	1,311
<b>Wealth index quintile</b>					
Lowest	94.2	12.4	45.5	69.2	2,327
Second	94.7	10.9	45.3	75.2	2,166
Middle	93.6	8.8	44.9	77.6	2,144
Fourth	92.8	8.4	44.0	76.2	2,065
Highest	93.0	12.4	46.5	74.8	1,951
<b>Division</b>					
Bahawalpur	95.1	11.2	39.7	69.4	1,068
D.G. Khan	95.7	22.2	56.4	57.6	1,181
Faisalabad	93.6	6.2	40.8	82.7	1,237
Gujranwala	91.8	5.5	42.4	85.4	1,578
Lahore	92.8	10.4	42.0	74.9	1,914
Multan	94.2	9.5	47.4	63.9	1,162
Rawalpindi	92.8	17.6	66.4	69.8	882
Sahiwal	93.8	4.5	27.5	84.1	827
Sargodha	95.1	10.2	48.3	81.9	804
<sup>1</sup> MICS indicator 2.5 - Children ever breastfed					
<sup>2</sup> MICS indicator 2.6 - Early initiation of breastfeeding					
( ) Figures that are based on 25-49 unweighted cases					
<sup>a</sup> Total includes 2 unweighted cases of mother's education missing					

**Figure NU.2: Initiation of breastfeeding, MICS Punjab, 2014**



The set of Infant and Young Child Feeding indicators reported in Tables NU.4 through NU.8 are based on the mother's report of consumption of food and fluids during the day or night prior to the interview. Data are subject to a number of limitations, some related to the respondent's ability to provide a full report on the child's liquid and food intake due to recall errors as well as lack of knowledge in cases where the child was fed by other individuals.

In Table NU.4, breastfeeding status is presented for both *Exclusively breastfed* and *Predominantly breastfed*; referring to infant's age less than 6 months who are breastfed, distinguished by *the former* only allowing vitamins, mineral supplements, and medicine and *the latter* allowing also plain water and non-milk liquids. The table also shows continued breastfeeding of children at 12-15 and 20-23 months of age.

Approximately 17 percent of children age less than six months are exclusively breastfed. With 48 percent predominantly breastfed, it is evident that water-based liquids are displacing feeding of breastmilk to the greatest degree. By age 12-15 months, 66 percent of children are breastfed, and by age 20-23 months, 35 percent continue to be breastfed.

Exclusive breastfeeding for children age less than six months is slightly higher in rural areas than urban areas. In Bahawalpur division, fewer children (7%) are exclusively breastfed compared to children in the other divisions. Predominant breastfeeding ranges from 37 percent in Gujranwala division to 60 percent in Multan division.

**Table NU.4: Breastfeeding**

Percentage of living children according to breastfeeding status at selected age groups, Punjab, 2014.

	Children age 0-3 months				Children age 0-5 months				Children age 12-15 months		Children age 20-23 months	
	Percent ever breastfed	Percent exclusively breastfed <sup>1</sup>	Percent predominantly breastfed <sup>2</sup>	Number of children	Percent ever breastfed	Percent exclusively breastfed <sup>1</sup>	Percent predominantly breastfed <sup>2</sup>	Number of children	Percent breastfed (Continued breastfeeding at 1 year) <sup>3</sup>	Number of children	Percent breastfed (Continued breastfeeding at 2 years) <sup>4</sup>	Number of children
<b>Punjab</b>	96.6	22.6	55.5	1,583	96.5	16.8	47.8	2,333	65.6	1,854	34.5	1,728
<b>Area of residence</b>												
Rural	96.3	24.6	59.9	1,113	96.3	18.3	51.1	1,627	67.3	1,299	34.0	1,188
All Urban	97.5	17.8	45.0	470	96.9	13.4	40.0	706	61.5	555	35.7	540
Major Cities	99.1	14.8	41.7	236	98.4	11.5	38.6	373	56.9	251	33.3	284
Other Urban	95.9	20.8	48.4	234	95.2	15.4	41.5	333	65.4	304	38.3	256
<b>Sex</b>												
Male	95.7	22.9	55.9	757	95.7	16.7	47.8	1,138	64.4	963	35.4	903
Female	97.5	22.3	55.1	825	97.3	16.9	47.7	1,195	66.9	891	33.5	825
<b>Mother's education</b>												
None/pre-school	96.2	22.6	63.1	727	96.1	16.6	54.4	1,075	68.9	839	40.2	738
Primary	96.8	23.4	56.6	277	96.9	18.6	50.7	391	66.7	369	33.9	309
Middle	96.2	22.1	47.0	155	96.4	16.3	39.5	229	62.5	192	28.5	210
Secondary	96.9	21.6	45.3	231	96.5	16.0	38.7	330	60.6	249	32.7	237
Higher	97.8	22.9	44.2	192	97.6	16.5	36.5	307	58.9	205	24.6	234
<b>Wealth index quintile</b>												
Lowest	95.3	20.5	66.2	356	96.4	15.0	56.8	515	72.9	406	37.8	336
Second	97.1	24.0	60.8	350	96.9	17.4	51.9	527	69.5	382	36.8	340
Middle	96.9	23.8	56.5	307	97.4	18.3	50.1	431	63.5	395	39.5	351
Fourth	95.7	25.4	50.3	309	94.7	19.2	44.4	460	62.0	347	30.5	344
Highest	98.5	18.7	38.6	262	97.4	13.8	32.0	400	58.2	323	28.3	358
<b>Division</b>												
Bahawalpur	99.7	9.8	56.6	149	99.8	7.4	49.5	224	71.3	201	34.5	151
D.G. Khan	95.6	21.3	62.5	170	96.4	15.3	51.0	257	72.0	205	43.1	153
Faisalabad	94.7	15.2	47.3	168	95.6	10.0	42.3	277	68.7	200	34.5	228
Gujranwala	94.6	26.4	45.8	216	95.2	19.3	37.3	323	61.4	297	27.0	302
Lahore	97.9	18.9	48.9	290	97.1	14.1	43.2	406	55.2	315	32.3	268
Multan	96.0	24.3	66.6	210	96.5	20.1	60.2	286	64.0	203	36.3	203
Rawalpindi	97.0	34.4	57.6	120	94.6	24.1	46.9	194	63.1	128	34.5	138
Sahiwal	97.4	30.9	56.7	130	96.3	24.3	49.2	175	69.6	164	39.3	150
Sargodha	97.4	28.2	65.2	130	97.3	21.5	57.7	192	75.7	142	38.1	133

<sup>1</sup> MICS indicator 2.7 - Exclusive breastfeeding under 6 months<sup>2</sup> MICS indicator 2.8 - Predominant breastfeeding under 6 months<sup>3</sup> MICS indicator 2.9 - Continued breastfeeding at 1 year<sup>4</sup> MICS indicator 2.10 - Continued breastfeeding at 2 years

Figure NU.3 shows the detailed pattern of breastfeeding by the child's age in months. Even at the earliest ages, the majority of children are receiving liquids or foods other than breastmilk, with other milk formula being of highest prevalence, even at the early age of 0-1 months. At age 4-5 months old, the percentage of children exclusively breastfed is only 5 percent. About 30 percent of children are receiving breastmilk at age 2 years.

**Figure NU.3: Infant feeding patterns by age, MICS Punjab, 2014**

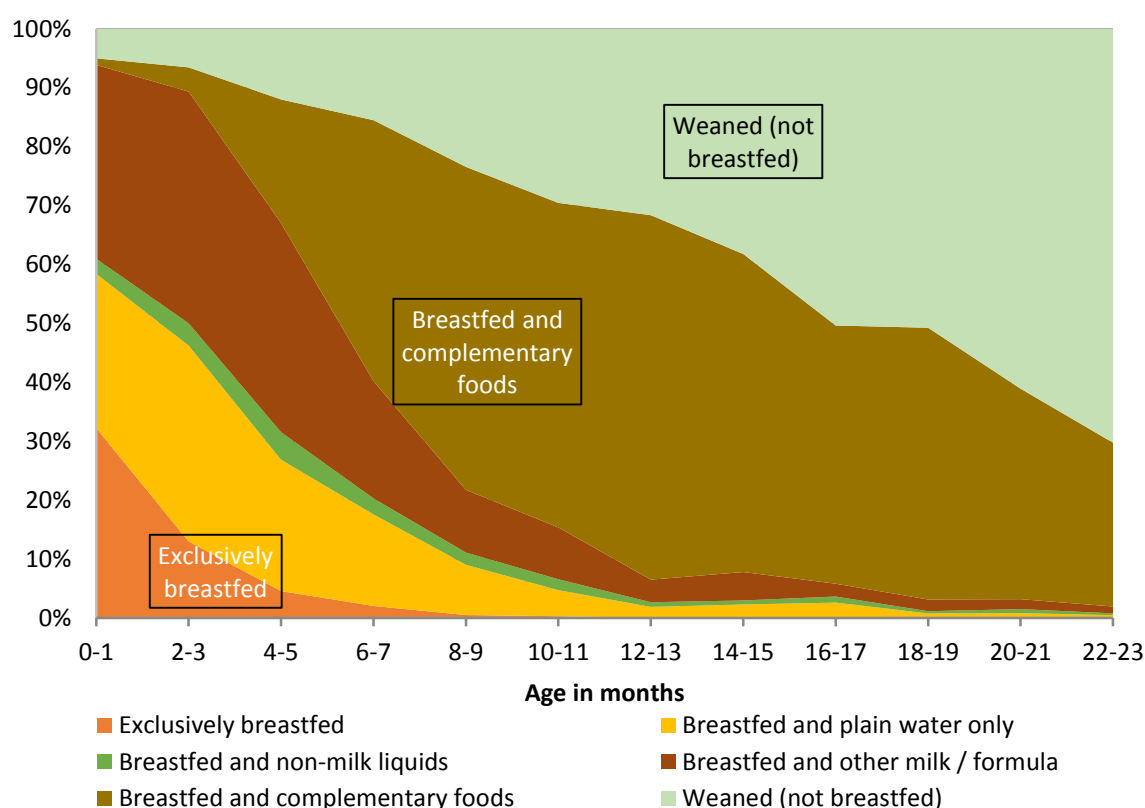


Table NU.5 shows the median duration of breastfeeding by selected background characteristics. Among children under age 3, the median duration is 17.4 months for any breastfeeding, 0.6 months for exclusive breastfeeding, and 2.2 months for predominant breastfeeding. There is no difference in median duration of exclusive breastfeeding according to background characteristics, while slight differentials are observed for predominant breastfeeding.

<b>Table NU.5: Duration of breastfeeding</b>				
Median duration of any breastfeeding, exclusive breastfeeding, and predominant breastfeeding among children age 0-35 months, Punjab, 2014.				
	<b>Median duration (in months) of:</b>			Number of children age 0-35 months
	Any breastfeeding <sup>1</sup>	Exclusive breastfeeding	Predominant breastfeeding	
<b>Median (Punjab)</b>	17.4	0.6	2.2	15,968
<b>Area of residence</b>				
Rural	17.6	0.6	2.6	11,061
All Urban	16.8	0.5	0.7	4,908
Major Cities	16.0	0.5	0.6	2,524
Other Urban	17.7	0.5	1.4	2,384
<b>Sex</b>				
Male	17.5	0.6	2.2	8,106
Female	17.3	0.6	2.2	7,863
<b>Mother's education</b>				
None/pre-school	18.2	0.5	3.1	7,277
Primary	18.3	0.6	2.6	2,960
Middle	15.1	0.5	1.5	1,657
Secondary	17.9	0.6	0.7	2,164
Higher	15.7	0.6	0.8	1,910
<b>Wealth index quintile</b>				
Lowest	18.9	0.5	3.4	3,480
Second	18.1	0.6	2.8	3,246
Middle	17.4	0.6	2.5	3,216
Fourth	16.6	0.6	1.9	3,149
Highest	15.8	0.5	0.6	2,877
<b>Division</b>				
Bahawalpur	18.7	0.5	2.5	1,682
D.G. Khan	20.0	0.5	2.6	1,767
Faisalabad	17.0	0.5	1.4	1,920
Gujranwala	15.8	0.6	1.1	2,398
Lahore	14.8	0.6	1.1	2,739
Multan	18.6	0.5	3.8	1,771
Rawalpindi	19.2	0.8	2.2	1,267
Sahiwal	16.9	0.6	2.4	1,218
Sargodha	18.2	0.6	3.4	1,206
<b>Mean (Punjab)</b>	16.7	1.0	3.6	15,968
<sup>1</sup> MICS indicator 2.11 - Duration of breastfeeding				

The age-appropriateness of breastfeeding of children under age 24 months is provided in Table NU.6. Different criteria of feeding are used depending on the age of the child. For infants age 0-5 months, exclusive breastfeeding is considered as age-appropriate feeding, while children age 6-23 months are considered to be appropriately fed if they are receiving breastmilk and solid, semi-solid or soft food. As a result of feeding patterns, only 48 percent of children age 6-23 months are being appropriately breastfed and age-appropriate breastfeeding among all children age 0-23 months, drops to 41 percent. At divisional level, age-appropriate breastfeeding among all children age 0-23 months ranges from 36 percent in Bahawalpur to 49 percent in Rawalpindi.

<b>Table NU.6: Age-appropriate breastfeeding</b>						
Percentage of children age 0-23 months who were appropriately breastfed during the previous day, Punjab, 2014.						
	<b>Children age 0-5 months</b>		<b>Children age 6-23 months</b>		<b>Children age 0-23 months</b>	
	Percent exclusively breastfed <sup>1</sup>	Number of children	Percent currently breastfeeding and receiving solid, semi-solid or soft foods	Number of children	Percent appropriately breastfed <sup>2</sup>	Number of children
<b>Punjab</b>	16.8	2,333	48.0	8,310	41.2	10,642
<b>Area of residence</b>						
Rural	18.3	1,627	48.2	5,756	41.6	7,383
All Urban	13.4	706	47.6	2,553	40.2	3,259
Major Cities	11.5	373	44.9	1,298	37.5	1,671
Other Urban	15.4	333	50.4	1,255	43.1	1,588
<b>Sex</b>						
Male	16.7	1,138	48.0	4,254	41.4	5,392
Female	16.9	1,195	48.0	4,056	40.9	5,251
<b>Mother's education</b>						
None/pre-school	16.6	1,075	47.7	3,730	40.7	4,806
Primary	18.6	391	49.5	1,529	43.2	1,921
Middle	16.3	229	44.0	887	38.3	1,116
Secondary	16.0	330	50.1	1,139	42.4	1,469
Higher	16.5	307	48.3	1,024	41.0	1,331
<b>Wealth index quintile</b>						
Lowest	15.0	515	47.3	1,794	40.1	2,308
Second	17.4	527	48.9	1,646	41.2	2,173
Middle	18.3	431	49.7	1,690	43.3	2,122
Fourth	19.2	460	46.7	1,634	40.7	2,094
Highest	13.8	400	47.5	1,546	40.6	1,946
<b>Division</b>						
Bahawalpur	7.4	224	43.0	849	35.6	1,073
D.G. Khan	15.3	257	54.5	906	45.9	1,163
Faisalabad	10.0	277	50.6	1,033	42.0	1,310
Gujranwala	19.3	323	45.2	1,296	40.0	1,620
Lahore	14.1	406	43.9	1,418	37.3	1,824
Multan	20.1	286	46.9	892	40.4	1,177
Rawalpindi	24.1	194	56.4	656	49.0	850
Sahiwal	24.3	175	46.2	651	41.6	825
Sargodha	21.5	192	51.3	609	44.1	801
<sup>1</sup> MICS indicator 2.7 - Exclusive breastfeeding under 6 months						
<sup>2</sup> MICS indicator 2.12 - Age-appropriate breastfeeding						

Overall, 61 percent of infants age 6-8 months received solid, semi-solid, or soft foods at least once during the previous day (Table NU.7). Among currently breastfeeding infants this percentage is 59 while it is 72 among infants currently not breastfeeding. The proportion is higher (70%) in urban compared to 58 percent in rural areas. Similarly, the percentage of children receiving solid, semi-solid or soft food shows a positive relation with household wealth.

<b>Table NU.7: Introduction of solid, semi-solid, or soft foods</b>						
Percentage of infants age 6-8 months who received solid, semi-solid, or soft foods during the previous day, Punjab, 2014.						
	<b>Currently breastfeeding</b>		<b>Currently not breastfeeding</b>		<b>All</b>	
	Percent receiving solid, semi-solid or soft foods	Number of children age 6-8 months	Percent receiving solid, semi-solid or soft foods	Number of children age 6-8 months	Percent receiving solid, semi-solid or soft foods <sup>1</sup>	Number of children age 6-8 months
<b>Punjab</b>	58.7	1,295	72.4	282	61.1	1,577
<b>Area of residence</b>						
Rural	56.4	948	64.5	172	57.7	1,120
All Urban	64.7	347	84.6	110	69.5	457
Major Cities	63.2	157	(87.4)	63	70.2	220
Other Urban	66.0	190	81.0	47	69.0	238
<b>Sex</b>						
Male	58.7	645	70.9	134	60.8	779
Female	58.7	650	73.7	149	61.5	799
<b>Mother's education</b>						
None/pre-school	49.1	629	54.9	101	49.9	730
Primary	60.0	229	70.7	51	61.9	280
Middle	61.8	135	(74.1)	34	64.3	169
Secondary	67.0	162	(89.0)	41	71.4	203
Higher	86.6	140	92.7	55	88.3	195
<b>Wealth index quintile</b>						
Lowest	44.6	336	(54.0)	50	45.9	386
Second	56.9	259	(58.7)	41	57.1	301
Middle	59.2	274	70.2	58	61.1	332
Fourth	63.4	237	76.5	55	65.8	292
Highest	79.3	189	90.1	78	82.5	267
<b>Division</b>						
Bahawalpur	44.9	147	(*)	22	48.4	168
D.G. Khan	55.1	172	(63.8)	23	56.2	196
Faisalabad	65.3	173	(83.1)	42	68.8	215
Gujranwala	66.7	169	(69.4)	49	67.3	218
Lahore	53.0	213	76.1	61	58.1	274
Multan	54.8	150	(*)	24	55.9	174
Rawalpindi	83.9	98	(*)	26	83.8	123
Sahiwal	52.3	83	(*)	22	55.2	105
Sargodha	58.6	90	(*)	13	57.7	103
<sup>1</sup> <b>MICS indicator 2.13 - Introduction of solid, semi-solid or soft foods</b>						
( ) Figures that are based on 25-49 unweighted cases						
(*) Figures that are based on fewer than 25 unweighted cases						

Overall, 65 percent of the children age 6-23 months are receiving solid, semi-solid and soft foods the minimum number of times (Table NU.8). A slightly higher proportion of children in urban areas (71%) were achieving the minimum meal frequency compared to children in rural areas (63%). The proportion of children (17%), receiving the minimum dietary diversity or foods from at least 4 food groups, was much lower than that for minimum meal frequency indicating the need to focus on improving diet quality and nutrients intake among this vulnerable group. A higher proportion of older (18-23 month) children (26%) were achieving the minimum dietary diversity compared to younger (6-8 month old) children (6%). The overall assessment using the indicator of minimum acceptable diet revealed that only 10 percent of children are benefitting from a diet sufficient in both diversity and frequency. The proportion is slightly higher in urban areas (14%) compared to rural areas (8%). Children living in the households in highest wealth quintile, those whose mothers have higher education and from Rawalpindi division are most likely to receive as recommended the minimum meal frequency, minimum dietary diversity, and minimum acceptable diet.



**Table NU.8: Infant and young child feeding (IYCF) practices**

Percentage of children age 6-23 months who received appropriate liquids and solid, semi-solid, or soft foods the minimum number of times or more during the previous day, by breastfeeding status, Punjab, 2014.

	Currently breastfeeding				Currently not breastfeeding					All			
	Percent of children who received:			Number of children age 6-23 months	Percent of children who received:				Number of children age 6-23 months	Percent of children who received:			Number of children age 6-23 months
	Minimum dietary diversity <sup>a</sup>	Minimum meal frequency <sup>b</sup>	Minimum acceptable diet <sup>1, c</sup>		Minimum dietary diversity <sup>a</sup>	Minimum meal frequency <sup>b</sup>	Minimum acceptable diet <sup>2, c</sup>	At least 2 milk feeds <sup>3</sup>		Minimum dietary diversity <sup>4, a</sup>	Minimum meal frequency <sup>5, b</sup>	Minimum acceptable diet <sup>c</sup>	
<b>Punjab</b>	12.5	49.8	11.2	4,992	25.2	92.2	7.3	90.8	2,866	17.3	65.3	9.7	8,310
<b>Area of residence</b>													
Rural	9.8	47.3	8.9	3,558	22.7	91.7	6.0	90.5	1,930	14.6	62.9	7.9	5,756
All Urban	19.0	56.1	16.7	1,434	30.5	93.2	9.9	91.4	937	23.6	70.8	14.0	2,553
Major Cities	20.7	55.9	17.6	687	33.1	91.9	12.2	90.3	501	26.3	71.1	15.3	1,298
Other Urban	17.5	56.3	15.8	748	27.4	94.8	7.3	92.6	435	20.8	70.5	12.7	1,255
<b>Sex</b>													
Male	12.7	49.3	11.1	2,546	27.3	91.8	9.1	90.8	1,484	18.3	64.9	10.4	4,254
Female	12.2	50.4	11.3	2,446	23.0	92.6	5.3	90.8	1,382	16.3	65.6	9.1	4,056
<b>Age</b>													
6-8 months	5.0	44.4	4.6	1,295	7.6	84.5	2.3	90.4	209	5.6	49.9	4.3	1,577
9-11 months	8.3	39.9	7.1	1,035	16.6	93.1	4.9	96.6	323	10.2	52.6	6.5	1,433
12-17 months	16.3	53.9	14.8	1,606	22.9	93.3	7.3	92.8	890	19.1	67.9	12.1	2,640
18-23 months	19.8	60.1	17.6	1,056	31.1	92.4	8.5	88.3	1,445	26.4	78.8	12.3	2,660
<b>Mother's education</b>													
None/pre-school	7.9	42.9	7.1	2,397	17.7	88.8	3.8	87.4	1,158	11.3	57.9	6.0	3,730
Primary	12.5	49.9	11.9	934	23.4	94.9	4.8	91.7	527	16.4	66.1	9.3	1,529
Middle	12.5	54.2	11.9	486	27.4	94.9	9.7	92.8	336	18.8	70.8	11.0	887
Secondary	18.2	56.4	13.9	656	29.7	94.6	7.8	94.2	427	23.1	71.5	11.5	1,139
Higher	26.0	69.3	24.3	519	41.9	93.3	17.5	93.9	419	33.0	80.0	21.3	1,024
<b>Wealth index quintile</b>													
Lowest	6.4	37.9	5.5	1,204	14.6	85.0	3.5	85.1	516	8.9	52.0	4.9	1,794
Second	8.1	45.1	7.4	1,043	18.5	90.8	3.8	88.7	540	11.6	60.7	6.2	1,646
Middle	11.5	52.6	10.7	1,029	22.9	95.2	6.4	92.0	583	15.8	68.0	9.1	1,690
Fourth	16.3	56.2	14.3	915	30.5	95.1	8.5	94.3	607	21.7	71.7	12.0	1,634
Highest	24.2	62.9	21.6	801	36.9	93.7	13.0	92.7	621	30.3	76.3	17.8	1,546

**Table NU.8: Infant and young child feeding (IYCF) practices**

Percentage of children age 6-23 months who received appropriate liquids and solid, semi-solid, or soft foods the minimum number of times or more during the previous day, by breastfeeding status, Punjab, 2014.

Division	Currently breastfeeding				Currently not breastfeeding					All			
	Percent of children who received:			Number of children age 6-23 months	Percent of children who received:				Number of children age 6-23 months	Percent of children who received:			Number of children age 6-23 months
	Minimum dietary diversity <sup>a</sup>	Minimum meal frequency <sup>b</sup>	Minimum acceptable diet <sup>1, c</sup>		Minimum dietary diversity <sup>a</sup>	Minimum meal frequency <sup>b</sup>	Minimum acceptable diet <sup>2, c</sup>	At least 2 milk feeds <sup>3</sup>		Minimum dietary diversity <sup>4, a</sup>	Minimum meal frequency <sup>5, b</sup>	Minimum acceptable diet <sup>c</sup>	
Bahawalpur	5.3	32.1	4.4	546	12.6	82.5	2.1	85.3	271	7.6	48.8	3.7	849
D.G. Khan	11.8	44.1	9.6	639	26.9	88.9	8.7	87.8	239	15.9	56.3	9.3	906
Faisalabad	13.9	62.7	13.6	623	24.7	97.7	8.3	94.6	348	18.0	75.2	11.7	1,033
Gujranwala	11.3	58.6	10.2	682	24.1	94.9	6.2	92.1	514	17.7	74.2	8.5	1,296
Lahore	16.0	52.7	15.2	773	34.5	93.9	9.1	91.3	556	23.5	69.9	12.6	1,418
Multan	5.8	38.8	5.1	553	19.7	88.1	3.8	93.0	296	11.1	56.0	4.6	892
Rawalpindi	25.9	57.8	20.5	399	35.6	92.8	15.2	86.4	214	29.4	70.0	18.7	656
Sahiwal	10.8	52.7	10.6	389	20.6	92.9	7.4	88.9	231	14.3	67.6	9.4	651
Sargodha	13.8	47.1	12.6	388	20.9	92.3	5.3	93.9	199	16.1	62.4	10.2	609
<b>Punjab</b>	<b>12.5</b>	<b>49.8</b>	<b>11.2</b>	<b>4,992</b>	<b>25.2</b>	<b>92.2</b>	<b>7.3</b>	<b>90.8</b>	<b>2,866</b>	<b>17.3</b>	<b>65.3</b>	<b>9.7</b>	<b>8,310</b>

<sup>1</sup> MICS indicator 2.17a - Minimum acceptable diet (breastfed)

<sup>2</sup> MICS indicator 2.17b - Minimum acceptable diet (non-breastfed)

<sup>3</sup> MICS indicator 2.14 - Milk feeding frequency for non-breastfed children

<sup>4</sup> MICS indicator 2.16 - Minimum dietary diversity

<sup>5</sup> MICS indicator 2.15 - Minimum meal frequency

<sup>a</sup> Minimum dietary diversity is defined as receiving foods from at least 4 of 7 food groups: 1) Grains, roots and tubers, 2) legumes and nuts, 3) dairy products (milk, yogurt, cheese), 4) flesh foods (meat, fish, poultry and liver/organ meats), 5) eggs, 6) vitamin-A rich fruits and vegetables, and 7) other fruits and vegetables.

<sup>b</sup> Minimum meal frequency among currently breastfeeding children is defined as children who also received solid, semi-solid, or soft foods 2 times or more daily for children age 6-8 months and 3 times or more daily for children age 9-23 months. For non-breastfeeding children age 6-23 months it is defined as receiving solid, semi-solid or soft foods, or milk feeds, at least 4 times daily.

<sup>c</sup> The minimum acceptable diet for breastfed children age 6-23 months is defined as receiving the minimum dietary diversity and the minimum meal frequency, while it for non-breastfed children further requires at least 2 milk feedings and that the minimum dietary diversity is achieved without counting milk feeds.

The continued practice of bottle-feeding is a matter of concern because of the possible contamination due to unsafe water and lack of hygiene in preparation. Table NU.9 shows that 58 percent of children under 2 years are fed using a bottle with a nipple. More than two-third (68%) of the children under 2 years are bottle fed in Gujranwala division compared to 44 percent in Bahawalpur division. The practice of bottle feeding is higher in urban (66%) compared to rural areas (54%). Bottle feeding has a positive relation with education of the mother and household wealth. For example, bottle feeding is 49 percent for children whose mother have pre-school or no education compared to 72 percent of children whose mothers have higher education. The data further show that 45 percent of children age less than six months are fed using a bottle with a nipple even though the children are expected to be exclusively breastfed at that age.

<b>Table NU.9: Bottle feeding</b>		
Percentage of children age 0-23 months who were fed with a bottle with a nipple during the previous day, Punjab, 2014.		
	Percentage of children age 0-23 months fed with a bottle with a nipple <sup>1</sup>	Number of children age 0-23 months
<b>Punjab</b>	57.7	10,642
<b>Area of residence</b>		
Rural	54.1	7,383
All Urban	65.7	3,259
Major Cities	68.2	1,671
Other Urban	63.1	1,588
<b>Sex</b>		
Male	58.0	5,392
Female	57.3	5,251
<b>Age</b>		
0-5 months	45.0	2,333
6-11 months	58.3	3,010
12-23 months	62.9	5,300
<b>Mother's education</b>		
None/pre-school	49.1	4,806
Primary	58.5	1,921
Middle	64.8	1,116
Secondary	66.3	1,469
Higher	71.8	1,331
<b>Wealth index quintile</b>		
Lowest	44.1	2,308
Second	50.8	2,173
Middle	60.6	2,122
Fourth	63.1	2,094
Highest	72.4	1,946
<b>Division</b>		
Bahawalpur	44.4	1,073
D.G. Khan	51.1	1,163
Faisalabad	57.6	1,310
Gujranwala	68.4	1,620
Lahore	66.5	1,824
Multan	53.0	1,177
Rawalpindi	61.3	850
Sahiwal	54.3	825
Sargodha	49.4	801
<sup>1</sup> MICS indicator 2.18 - Bottle feeding		

## Salt Iodization

Iodine Deficiency Disorders (IDD) is the world's leading cause of preventable mental retardation and impaired psychomotor development in young children. In its most extreme form, iodine deficiency causes cretinism. It also increases the risks of stillbirth and miscarriage in pregnant women. Iodine deficiency is most commonly and visibly associated with goitre. The IDD takes its greatest toll in impaired mental growth and development, contributing in turn to poor school performance, reduced intellectual ability, and impaired work performance. The indicator is the percentage of households consuming adequately iodized salt ( $\geq 15$  parts per million). In Pakistan iodine deficiency disorders have been recognized as a public health problem for nearly 50 years. Various surveys have reflected that Pakistan is a country with more than half of the population estimated to be at risk for IDD (Iodine Deficiency Disorders). The situation is worse especially in the northern districts of Pakistan which is considered to be one of the most severely endemic areas in the world for IDD.

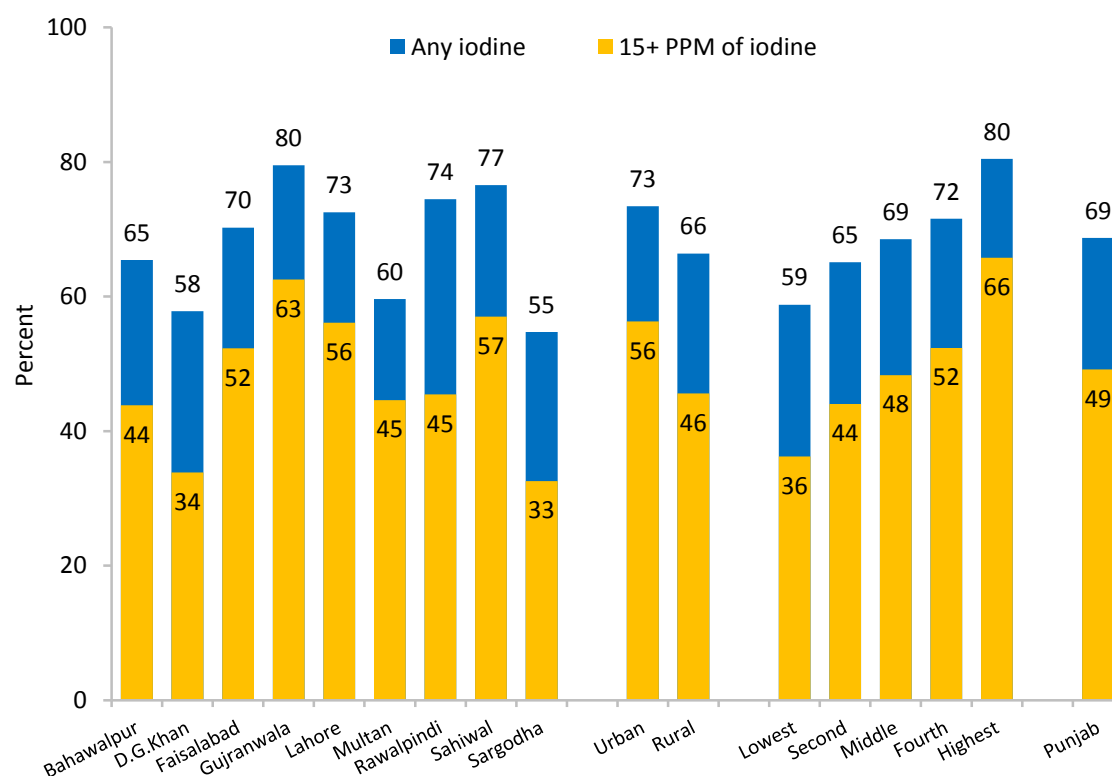
A National IDD Control Program was initiated in 1989 with a focus on elimination of IDD through Universal Salt Iodization (USI). The Program has been implemented by Government of Pakistan with the support for national USI partners including UNICEF, the Micronutrient Initiative and GAIN (Global Alliance for Improved Nutrition). The Program is being implemented in all provinces with the objective to improve the availability and accessibility of adequately iodized salt to the entire population including the most vulnerable.

Table NU.10: Iodized salt consumption								
Percent distribution of households by consumption of iodized salt, Punjab, 2014.								
	Percentage of households in which salt was tested	Number of households	Percent of households with:				Total	Number of households in which salt was tested or with no salt
			No salt	Salt test result				
				Not iodized 0 PPM	>0 and <15 PPM	15+ PPM <sup>1</sup>		
Punjab	98.2	38,405	1.1	30.2	19.6	49.2	100.0	38,119
Area of residence								
Rural	98.4	25,577	1.1	32.5	20.8	45.6	100.0	25,445
All Urban	97.7	12,828	1.1	25.4	17.1	56.3	100.0	12,675
Major Cities	97.2	6,717	1.1	27.9	16.2	54.8	100.0	6,605
Other Urban	98.2	6,111	1.1	22.8	18.2	57.9	100.0	6,070
Education of household head <sup>a</sup>								
None/pre-school	98.2	15,399	1.3	34.2	20.8	43.7	100.0	15,311
Primary	98.4	6,639	1.2	31.7	20.0	47.1	100.0	6,607
Middle	98.5	4,863	0.8	30.4	20.4	48.3	100.0	4,829
Secondary	98.0	7,022	1.0	26.5	18.9	53.6	100.0	6,953
Higher	97.8	4,472	0.8	19.2	14.9	65.0	100.0	4,410
Wealth index quintile								
Lowest	97.7	8,027	1.9	39.3	22.5	36.3	100.0	7,991
Second	98.4	7,721	1.1	33.7	21.1	44.0	100.0	7,687
Middle	98.6	7,508	0.9	30.6	20.2	48.3	100.0	7,469
Fourth	98.3	7,551	0.8	27.7	19.2	52.4	100.0	7,479
Highest	97.9	7,598	0.8	18.8	14.7	65.8	100.0	7,494

Table NU.10: Iodized salt consumption								
Percent distribution of households by consumption of iodized salt, Punjab, 2014.								
Division	Percentage of households in which salt was tested	Number of households	Percent of households with:				Total	Number of households in which salt was tested or with no salt
			No salt	Salt test result				
				Not iodized 0 PPM	>0 and <15 PPM	15+ PPM <sup>1</sup>		
Bahawalpur	98.2	4,091	1.4	33.1	21.6	43.8	100.0	4,077
D.G.Khan	98.5	3,436	1.2	41.0	24.0	33.9	100.0	3,424
Faisalabad	98.8	4,889	0.8	29.0	17.9	52.3	100.0	4,867
Gujranwala	98.4	5,569	0.9	19.6	16.9	62.6	100.0	5,527
Lahore	97.5	6,631	1.1	26.4	16.4	56.1	100.0	6,537
Multan	97.6	4,633	1.6	38.7	15.0	44.6	100.0	4,596
Rawalpindi	97.4	3,633	1.1	24.4	29.0	45.5	100.0	3,579
Sahiwal	98.6	2,638	1.3	22.1	19.6	57.0	100.0	2,636
Sargodha	99.1	2,885	0.6	44.7	22.2	32.6	100.0	2,874
Punjab	98.2	38,405	1.1	30.2	19.6	49.2	100.0	38,119
<sup>1</sup> MICS indicator 2.19 - Iodized salt consumption								
<sup>a</sup> Total includes 11 unweighted cases of household head's education missing								

In 98 percent of households, salt used for cooking was tested for iodine content by using salt test kits to test the presence of potassium iodate content in the salt. Table NU.10 shows that in about 1 percent of households, there is no salt available. These households are, however, included in the denominator of the indicator. In 49 percent of households, salt is found to contain 15 parts per million (ppm) or more of iodine. Use of iodized salt was lowest in Sargodha division (33%) and highest in Gujranwala division (63%). More urban households (56%) were found to be using adequately iodized salt compared to 46 percent in rural areas. Similarly, 66 percent of households in the highest wealth quintile are using adequately iodized salt compared to 36 percent of households in the lowest quintile. The consumption of adequately iodized salt is graphically presented in Figure NU.4.

**Figure NU.4: Consumption of iodized salt, MICS Punjab, 2014**



### Children's Vitamin A Supplementation

Vitamin A is essential for eye health and proper functioning of the immune system. It is found in foods such as milk, liver, eggs, red and orange fruits, red palm oil and green leafy vegetables, although the amount of vitamin A readily available to the body from these sources varies widely. In developing areas of the world, where vitamin A is largely consumed in the form of fruits and vegetables, daily per capita intake is often insufficient to meet dietary requirements. Inadequate intakes are further compromised by increased requirements for vitamin as children grow or during periods of illness, as well as increased losses during common childhood infections. As a result, vitamin A deficiency is quite prevalent in developing world and particularly in countries with highest burden of under-five deaths.

The 1990 World Summit for Children set the goal of virtual elimination of vitamin A deficiency and its consequences, including blindness, by the year 2000. This goal was also endorsed at the Policy Conference on Ending Hidden Hunger in 1991, the 1992 International Conference on Nutrition, and the UN General Assembly's Special Session on Children in 2002. The critical role of vitamin A in child health and immune function makes control of deficiency a primary component of child survival efforts, and therefore critical to the achievement of the fourth Millennium Development Goal: a two-thirds reduction in under-five mortality by the year 2015.

For countries where vitamin A deficiency is common, current international recommendations call for high-dose supplementation every 4–6 months for all children aged 6–59 months living in affected areas. Providing young children with two high-dose vitamin A capsules a year is a safe, cost-effective, efficient strategy for eliminating vitamin A deficiency and improving child survival. Giving vitamin A to new mothers helps protect their children during the first months of life and helps to replenish the mother's own stores of vitamin A which are depleted during pregnancy and lactation. Under Pakistan's National Health Policy 2001, vitamin A supplements are to be provided annually to all children aged 6-59 months on National Immunisation Days through the Expanded Programme on Immunization (EPI) network. This survey uses as an indicator the percentage of children 6–35 months of age who receive at least one high-dose of vitamin A supplement in the preceding 6 months.

MICS Punjab, 2014 finds that about 65 percent of children aged 6–59 months received at least one dose of vitamin A supplement during the 6 months period prior to the interview (Table NU.11). Children age 6–11 months have least coverage (53%) compared to older children age 36-47 months who have highest coverage (67%). Among divisions, nine in ten children (91%) in Bahawalpur division received Vitamin A dose during the last 6 months compared to only four in ten children in Multan division (45%).

<b>Table NU.11: Children's vitamin A supplementation</b>		
Percent distribution of children age 6-59 months by receipt of a high dose vitamin A supplement in the last 6 months, Punjab, 2014.		
	Percentage of children who received Vitamin A during the last 6 months <sup>1</sup>	Number of children age 6-59 months
<b>Punjab</b>	64.8	24,706
<b>Area of residence</b>		
Rural	65.2	17,086
All Urban	64.0	7,620
Major Cities	57.9	3,896
Other Urban	70.4	3,723
<b>Sex</b>		
Male	65.2	12,533
Female	64.4	12,172
<b>Age</b>		
6-11 months	52.9	3,010
12-23 months	65.0	5,300
24-35 months	66.5	5,326
36-47 months	67.3	5,894
48-59 months	67.1	5,176
<b>Mother's education</b>		
None/pre-school	63.9	11,885
Primary	66.6	4,508
Middle	64.6	2,471
Secondary	64.5	3,139
Higher	66.9	2,703
<b>Wealth index quintile</b>		
Lowest	63.2	5,728
Second	66.8	4,966
Middle	67.1	4,821
Fourth	63.8	4,810
Highest	63.4	4,381

**Table NU.11: Children's vitamin A supplementation**

Percent distribution of children age 6-59 months by receipt of a high dose vitamin A supplement in the last 6 months, Punjab, 2014.

	Percentage of children who received Vitamin A during the last 6 months <sup>1</sup>	Number of children age 6-59 months
<b>Division</b>		
Bahawalpur	90.9	2,807
D.G. Khan	46.9	2,859
Faisalabad	70.7	2,937
Gujranwala	69.4	3,673
Lahore	59.0	4,191
Multan	44.8	2,691
Rawalpindi	60.4	1,924
Sahiwal	73.8	1,837
Sargodha	72.9	1,787
<b>Punjab</b>	64.8	24,706
<sup>1</sup> MICS indicator 2.S1 - Vitamin A supplementation		