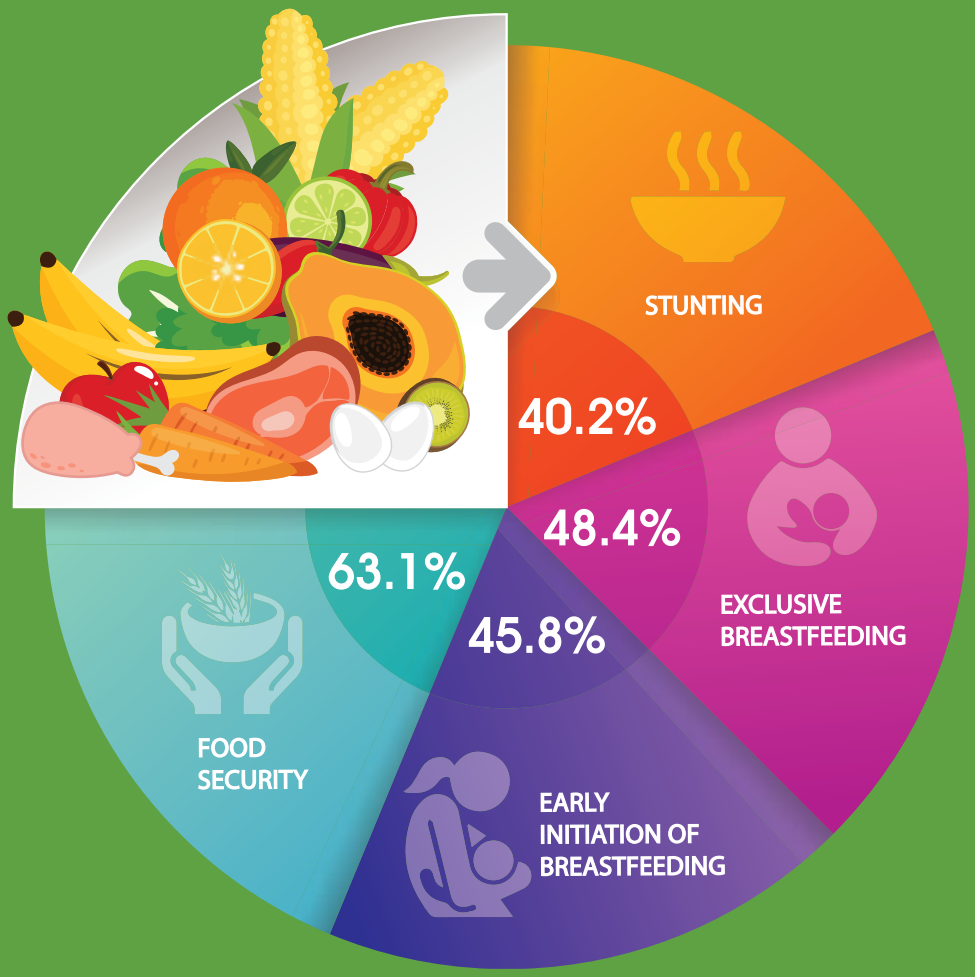
NUTRITION WING
Ministry of National Health Services,
Regulations and Coordination
Government of Pakistan

NATIONAL NUTRITION SURVEY 2018

KEY FINDINGS REPORT

TOPLINE RESULTS



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Executive summary

The Ministry of National Health Services, Regulations and Coordination (MoNHSR&C), Pakistan, with the technical support of United Nations Children's Fund (UNICEF) Pakistan and funding from DFID, conducted the National Nutrition Survey (NNS) 2018 with Aga Khan University (AKU) to ascertain the nutritional statuses of children and women across Pakistan. Survey field activities were implemented by AKU and its collaborating partners across different provinces and subnational regions in Pakistan. MoNHSR&C and UNICEF were closely involved in oversight from inception until the end of survey activities, through a national steering committee and provincial partners. The survey was initiated in April 2018 and field activities formally ended in January 2019.

The main objective of the survey was to assess the current nutrition status of children and adolescents (girls and boys) and women of reproductive age, to establish trends compared to previous surveys conducted in 2001 and 2011, and to provide a benchmark for the national, provincial, district and regional nutrition landscape in the context of Sustainable Development Goal (SDG) 2. Hitherto, up-to-date nutrition data that reflected the situation post-devolution had not been available in Pakistan. Also included in the survey was an evaluation of major contextual factors contributing to undernutrition, such as infant and young child feeding (IYCF) practices, food security, water, sanitation and hygiene (WASH) and health-seeking behaviours. For the first time in Pakistan, the survey was designed with a district representative sample to produce district-level estimates. The survey findings will thus help evaluate progress in nutrition interventions and guide granular, evidence-based decision-making to prioritize nutrition interventions and their implementation in Pakistan.

NNS 2018 was a national cross-sectional survey at household level and a two-stage stratified sample design methodology was applied. The overall sampling frame and the list of enumeration blocks were provided by the Pakistan Bureau of Statistics (PBS) based on the Population and Housing Census 2017. A total of 100,304 households (5,507 PSUs) were successfully interviewed with an overall response rate of 94.9%.

The quantitative survey collected data on the overall nutritional status of target groups based on interviews, anthropometric indices, and blood and urine assessment for micronutrient status. The population groups surveyed were children aged 0–59 months, children aged 6–12 years, adolescents aged 10–19 years and women of reproductive age aged 15-49 years. A total of 68,493 mothers/caretakers of children aged 0–59 months were interviewed and their anthropometric measurements obtained, and an additional 24,209 children aged 0–23 months were assessed for Infant and Young Child Feeding (IYCF) practices. A total of 123,092 women were assessed for their nutrition status and dietary diversity. Also, the body mass index (BMI) of 48,750 adolescent boys and girls was obtained and of these, 14,418 girls also had spot haemoglobin tests done to derive anaemia estimates. Height, weight and mid-upper arm circumference (MUAC) measurements along with clinical examination for anaemia, goitre and oedema were undertaken to determine nutrition status of different target age groups. Blood and urine samples were collected from the target age groups for micronutrient assays. Standard methods and procedures were adopted for collection and transportation of the specimens. Haemoglobin levels were tested in the field using HemoCue machines, whereas other biochemical assessments including ferritin, vitamin A, vitamin D, vitamin B12, folic acid, zinc, urinary iodine, C-reactive protein (CRP), alpha glycoprotein (AGP) etc. were analysed at the Nutritional Research Laboratory of the Aga Khan University in Karachi. Drinking water samples were also collected from targeted households to determine water quality by microbiological and chemical testing.

Over half of the households (63.1%) were found to be food secure, more so in urban (68.2%) areas than rural (60.0%). Households experiencing a severe grade of food insecurity were 18.3%. The national prevalence of stunting was 40.2%, and of severe stunting 19.6%, with slightly higher prevalence in boys (40.9% and 20.2% respectively) compared to girls (39.4% and 19.1%). Stunting was highest (46.6%) among children aged 18–23 months and lowest among younger infants aged 0–5 months (28.6%).

About 17.7% children nationally suffered from wasting, with a higher percentage in rural (18.6%) compared to urban (16.2%) strata. Boys (18.4%) were more likely to suffer from wasting than girls (17.0%), and younger infants

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aged 0–5 months more so than older children aged 48–59 months (26.6% and 14.7% respectively). Wasting rates have increased from the previous two editions of NNS in 2001 (13.1%) and 2011 (15.1%). NNS 2018 also presents data for the first time on the concurrence of stunting and wasting (5.9%), which is largely clustered in the south of the country, and is indicative of a close relation between these two forms of malnutrition.

The nutritional status of adolescent girls and boys (aged 10–19 years) was assessed for the first time in NNS 2018. The survey suggests that that boys have worse nutrition indicators than girls in almost all cases: underweight (boys: 21.1%; girls: 11.8%), overweight (boys: 17.8%; girls: 16.8%), obesity (7.6% and 5.5%) and short stature (boys: 31.7%; girls: 28.5%). Under half (46.4%) of women of reproductive age (aged 15–49 years), had normal BMI; 14.5% were underweight, 24.2% were overweight and 13.9% were obese.

NNS 2018 confirms that micronutrient deficiencies are widespread in Pakistan. Anaemia was common in non-pregnant women of reproductive age (43.0%) and among children 6-59 months of age (overall 53.7%; 54.2% in boys and 53.1% in girls). Over all 49.1% children were iron deficient. Iron deficiency anaemia affected 18.0% of non-pregnant women of reproductive age, compared to 21.2% in pregnant women.

Vitamin A deficiency (< 0.70 µmol/l) was notable among women of reproductive age (27%) as well as among children aged 6–59 months (overall: 51.5%; boys: 51.6%; girls: 51.3%). Zinc deficiency was also observed in both women and children, with a prevalence of 22.1% and 18.6% respectively, showing some improvement since 2001 and 2011. Iodine deficiency was present among both women of reproductive age and children aged 6–12 years as the median urinary iodine concentration was found to be 108.3 and 122.9 respectively (8.6%). Some 79.6% households were found to possess adequately iodized salt i.e. with 15 ppm or more of iodine.

The majority of women of reproductive age (79.7%) and children aged 6–59 months (62.7%) were found to be deficient in vitamin D (<20.0 ng/mL) while a large proportion of women reproductive age (25.7%) also had evidence of severe vitamin D deficiency (<8.0 ng/mL).

Information related to IYCF practices was collected from mothers of children under 24 months of age. Most infants aged 0–23 months (overall: 88.7%; boys: 88.4%; girls: 89.0%) had been ever breastfed after birth. However, only 45.8% were reported to have been breastfed within one hour of birth. Almost half of children who were breastfed within an hour of birth (39.9%) had also received pre-lacteal feed. Almost half (overall: 48.4%; boys: 47.8%; girls: 48.9%) of infants under six months of age were exclusively breastfed and 63.3% infants in same age group were predominantly breastfed. Only 38.2% infants aged 6–8 months were currently being breastfed and provided solid, semi-solid or soft foods. Overall, 40.1% infants aged 0–23 months were appropriately breastfed.

While only 3.6% of children aged 6–23 months received a minimum acceptable diet, the proportion rose with mother's level of education and wealth index. Minimum dietary diversity and minimum meal frequency stood at 14.2% and 18.2% respectively, with higher rates for boys in terms of dietary diversity but slightly lower in terms of minimum meal frequency.

We also assessed delivery platforms for nutrition interventions at the primary care level. Nationally, 63.4%% women sought antenatal care (ANC) during their last pregnancy, but only 31.7% reported to have had four or more antenatal care visits during their last pregnancy and 10.7% had the WHO-recommended eight or more. Among women who accessed ANC, around 39.9% made their first ANC visit during the first trimester of pregnancy, 8.6% visited for the first time during the 4–5th months, and 3.6% during the 6–7th months. Services received by pregnant women during ANC visits included weight (41.4%) and blood pressure (51.4%) measurements, urine (39.4%) and blood sampling (37.4%). Less than a third (29.3%) received all recommended ANC services, while 52.9% received ultrasound examinations. During ANC visits, 15.1% women received information and counselling about eating more nutritious food, 7.4% received counselling on breastfeeding and 4.5%.

In addition to poverty and poor living conditions (as assessed by housing quality and assets), and notwithstanding high rates of access to improved water (92.6%), water samples tested showed widespread use of unsafe water. Microbiological contamination of drinking water was high with coliform contamination in 82.7% of households and E.coli in 31.3% of households.

In summary, NNS 2018 indicates that malnutrition is rampant among women, children and adolescents in Pakistan. In addition to high levels of stunting, wasting and micronutrient malnutrition, Pakistan has begun to see a substantial burden of overweight and obesity, thus creating a triple burden of malnutrition. This is caused by a combination of dietary deficiencies, poor maternal and child health, high burden of morbidity, and low micronutrient content in the soil, especially iodine and zinc.

Stunting, wasting and micronutrients deficiencies have profound effects on immunity, growth, and mental development of children. Furthermore, the high rates of malnutrition and micronutrient deficiencies among women of reproductive age point to a vicious cycle of malnutrition which may underlie the high burden of morbidity and mortality among women and children (both boys and girls) in Pakistan and could also contribute to high risk of noncommunicable diseases in the future.

As the qualitative component of NNS 2018 suggests, increasing acute malnutrition and chronic malnutrition may be primarily due to poverty, low levels of maternal education, gender inequalities, lack of awareness, poor access to improved water and sanitation facilities and food insecurity. Inadequate infant feeding practices and lack of access to age-appropriate foods are also major contributors. Although the nutrition situation in Pakistan is alarming and much effort will be needed to achieve SDG2 targets, there is much scope for evidence-based interventions. The frameworks and delivery platforms exist, and urgent action is needed for the development and strategic implementation of a comprehensive nutrition strategy in Pakistan which addresses malnutrition in all its forms.

Key results

Nutritional status (children 0–59 months)			
	Male	Female	All
Underweight prevalence	29.3%	28.4%	28.9%
Stunting prevalence	40.9%	39.4%	40.2%
Wasting prevalence	18.4%	17.0%	17.7%
Overweight prevalence	9.7%	9.2%	9.5%
Nutritional status (adolescents 10–19 years)			
	Male	Female	All
Underweight prevalence	21.1%	11.8%	-
Short stature prevalence	31.7%	28.5%	-
Overweight prevalence	17.8%	16.8%	-
Obesity prevalence	7.6%	5.5%	-
Anaemia among adolescent girls	54.7%		
Nutritional status (women of reproductive age 15–49 years)			
Underweight prevalence	14.5%		
Overweight prevalence	24.2%		
Obesity prevalence	13.9%		
Micronutrient deficiencies (children 6–59 months)			
	Male	Female	Overall
Anaemia	54.2%	53.1%	53.7%
Iron deficiency	50.0%	48.2%	49.1%
Iron deficiency anaemia	29.1%	28.1%	28.6%
Vitamin A deficiency	51.6%	51.3%	51.5%
Vitamin D deficiency	62.3%	63.0%	62.7%
Zinc deficiency	18.8%	18.4%	18.6%
Folic Acid deficiency	34.3%	35.5%	34.9%

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Vitamin B12 defici	26.0%	24.1%	25.1%
Median urinary iodine concentration in school-age children (6–12 years)	126.7	121.3	122.9
Calcium	32%	32.4%	32.2%
Micronutrient deficiencies (women of reproductive age 15–49 years)			
	Non-Pregnant	**Pregnant**	**Overall**
Anaemia	43.0%	35.5%	42.6%
Iron deficiency	33.6%	46.9%	34.3%
Iron deficiency anaemia	18.0%	21.2%	18.2%
Vitamin A deficiency	30%	27%	27%
Vitamin D deficiency	79.6%	81.2%	79.7%
Zinc deficiency	21.1%	37.5%	22.1%
Median urinary iodine concentration	108.4	108	108.3
Calcium deficiency	16.2%	32.6%	26.5%
Folic Acid deficiency	45.29%	44.5	44.5%
Vitamin B12 deficiency	19.51%	32.3	20.3%
Infant and young child feeding			
	Male	**Female**	**Overall**
Percentage who were ever breastfed	88.4%	89.0%	88.7%
Percentage who were breastfed in first hour of birth	44.2%	47.5%	45.8%
Percentage who received a pre-lacteal feed	41.3%	38.5%	39.9%
Exclusive breastfeeding (0–5 months)	47.8%	48.9%	48.4%
Percentage predominantly breastfeed (0–5 months)	61.2%	65.4%	63.3%
Appropriately breastfed (0–23 months)	40.2%	40.0%	40.1%
Initiation of solid, semi-solid and soft foods (all infants aged 6–8 months)	34.6%	37.3%	35.9%
Initiation of solid, semi-solid and soft foods at 6–8 months with concurrent breastfeed	35.4%	41.0%	38.2%
Minimum meal frequency (6–23 months)	18.3%	18.2%	18.2%

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Minimum dietary diversity	14.3%	14.2%	14.2%
Minimum acceptable diet	3.6%	3.6%	3.6%
Water and sanitation			
Use of improved drinking water sources	92.6%		
Water treatment	11.6%		
Use of improved sanitation facilities	84.7%		
Maternal and newborn health			
At least one antenatal care visit by skilled personnel	63.4%		
At least eight antenatal care visits by skilled personnel	10.7%		
Recommended content of antenatal care (blood pressure measured, urine and blood samples taken)	29.3%		
Skilled attendant at delivery	68.5%		
Postnatal health checks	32.2%		
Received iron folic acid during pregnancy of last live birth	33.4%		
Household iodized salt utilization			
Salt with adequate iodine content (rapid test kit)	79.6%		
Household food security			
Food Insecurity Experience Scale	36.9%		

Introduction

The 2018 Pakistan National Nutrition Survey (NNS 2018), the largest national nutrition survey, in Pakistan. It is designed to provide to policymakers, programme managers and academicians a unique set of nutrition-related data including environmental, anthropometric and biochemical indicators. The study group included children, women of reproductive age (WRA) and adolescent boys and girls. NNS 2018 is the fifth national nutrition survey since 1965, but the first to yield district-representative data and to include adolescents and a component on water.

NNS 2018 employed a cross-sectional survey design at the household level. It used a mixed-method data collection methodology with both quantitative and qualitative approaches.

The sample design provides district level estimation at the national level for urban and rural localities and by gender, for the four provinces (Punjab, Sindh, Balochistan and Khyber Pakhtunkhwa, KP); and for the regions (Azad Jammu and Kashmir, AJK, and Gilgit-Baltistan, GB), KP-NMD and Islamabad Capital Territory (ICT).

A national, province and district representative sample of 76,742 children (aged 0–59 months), 145,847 adolescents (10–19 years) and 145,324 WRA (15–45 years) was selected from 115,600 households.

Household Sampled

		Households				Women (15-49 years)			Adolescent (10-19 years)	Children under 5		
		Sampled	Occupied	Interviewed	Household response rate	Eligible	Interviewed	Women's response rate	Eligible	Eligible	Mothers/ caretakers interviewed	Under-5's response rate
National	Total	110146	105704	100304	94.9	155614	123092	79.1	64829	81324	68493	84.2
	Urban	33328	31908	29858	93.6	47155	37367	79.2	18314	22999	19641	85.4
	Rural	76818	73796	70446	95.5	108459	85725	79.0	46515	58325	48852	83.8
Punjab	Total	40452	38825	37086	95.5	55491	44409	80.0	20575	28139	24281	86.3
	Urban	13312	12712	12016	94.5	18515	14644	79.1	6592	8893	7565	85.1
	Rural	27140	26113	25070	96.0	36976	29765	80.5	13983	19246	16716	86.9
Sindh	Total	18768	18149	17156	94.5	25895	20977	81.0	11664	14802	13082	88.4
	Urban	10027	9702	9003	92.8	14068	11241	79.9	5823	7033	6233	88.6
	Rural	8741	8447	8153	96.5	11827	9736	82.3	5841	7769	6849	88.2
KP	Total	13710	13246	12222	92.3	20166	16110	79.9	9144	9736	8232	84.6
	Urban	2803	2722	2464	90.5	4189	3316	79.2	1699	1952	1640	84.0
	Rural	10907	10524	9758	92.7	15977	12794	80.1	7445	7784	6592	84.7
Balochistan	Total	18145	17230	16315	94.7	24874	20302	81.6	10483	14165	11879	83.9
	Urban	4011	3751	3495	93.2	5699	4625	81.2	2310	2938	2431	82.7
	Rural	14134	13479	12820	95.1	19175	15677	81.8	8173	11227	9448	84.2
ICT	Total	1356	1304	1205	92.4	1792	1473	82.2	657	965	826	85.6
	Urban	659	632	582	92.1	817	654	80.0	281	482	405	84.0
	Rural	697	672	623	92.7	975	819	84.0	376	483	421	87.2
KP-TD	Total	3595	3559	3355	94.3	5229	3475	66.5	2319	2463	1707	69.3
	Urban	199	197	188	95.4	324	201	62.0	112	114	72	63.2
	Rural	3396	3362	3167	94.2	4905	3274	66.7	2207	2349	1635	69.6
AJK	Total	8449	7910	7579	95.8	12039	9229	76.7	4750	5634	4614	81.9
	Urban	1579	1484	1417	95.5	2246	1786	79.5	796	979	847	86.5
	Rural	6870	6426	6162	95.9	9793	7443	76.0	3954	4655	3767	80.9
GB	Total	5671	5481	5386	98.3	10128	7117	70.3	5237	5420	3872	71.4
	Urban	738	708	693	97.9	1297	900	69.4	701	608	448	73.7
	Rural	4933	4773	4693	98.3	8831	6217	70.4	4536	4812	3424	71.2

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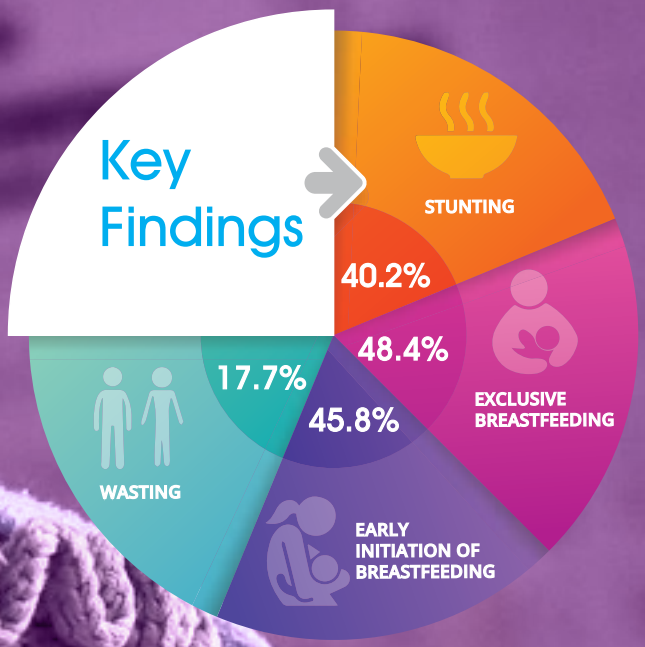
For the biochemical assessment, 31,828 blood samples for WRA and 31,828 samples for children were planned to analyse. For water quality a sample size of 31,828 was estimated based on the prevalence of coliform and E. coli contamination of water.

Planned Survey Sample

Province/ Region	PSUs	HHs	Blood Samples		Urine Samples		Water Samples
			WRA	Children	WRA	Children	
Balochistan	794	15,880	7,297	7,297	745	745	7,297
KP	807	16,140	5,096	5,096	807	807	5,096
KP-NMD	377	7,540	2,070	2,070	377	377	2,070
Punjab	2,051	41,020	7,704	7,704	2,051	2,051	7,704
Sindh	945	18,900	5,656	5,656	945	945	5,656
ICT	68	1,360	340	340	68	68	340
GB	328	6,560	2,640	2,640	190	190	2,640
AJK	410	8,200	1,025	1,025	597	597	1,025
Grand Total	**5,780**	**115,600**	**31,828**	**31,828**	**5,780**	**5,780**	**31,828**

CHILDREN UNDER FIVE YEARS OF AGE



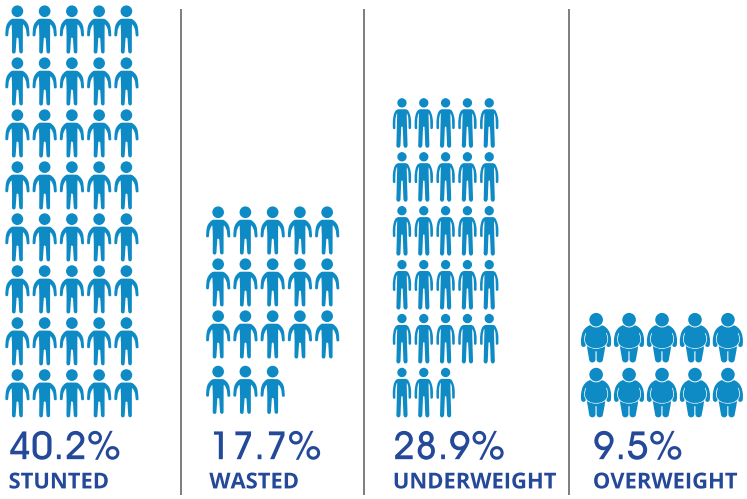
A total of 68,493 mothers/caretakers of children under five were interviewed. Of these, 24,209 children under two years were assessed for infant and young child feeding (IYCF) practices. Of these children, 50.9% were boys and 49.1% girls. About 36.4% lived in urban localities and 63.6% in rural areas. About 55.8% of the mothers of the sampled children were illiterate and 42.5% children belonged to the lowest two wealth quintiles.

NUTRITIONAL STATUS OF CHILDREN UNDER FIVE YEARS OF AGE

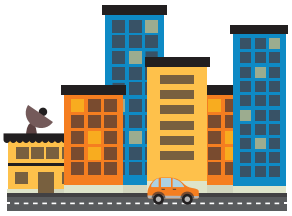
- STUNTING
- WASTING
- UNDERWEIGHT
- OVERWEIGHT

In Pakistan, four out of ten children under five years of age are stunted while 17.7% suffer from wasting. The double burden of malnutrition is becoming increasingly apparent, with almost one in three children underweight (28.9%) alongside a high prevalence of overweight (9.5%) in the same age group. The prevalence of overweight among children under five has almost doubled over seven years, increasing from 5% in 2011 to 9.5% in 2018.

Prevalence of Malnutrition (Children Under Five)



Prevalence of Malnutrition by Locality (Urban/Rural)



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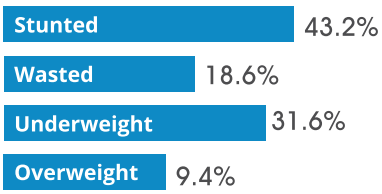
RURAL



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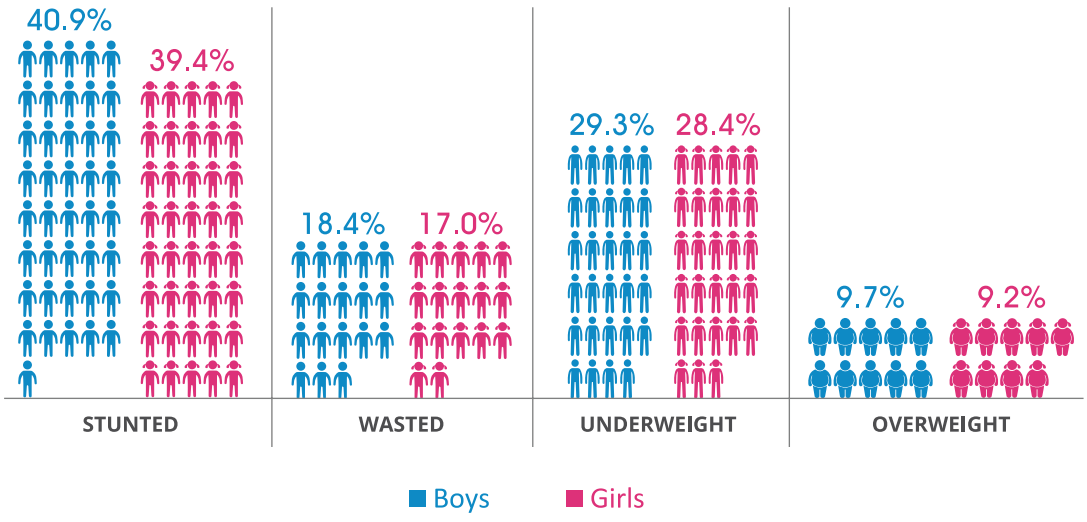
The pattern of distribution of malnutrition among boys and girls remains the same, with boys being more affected than girls by all forms of malnutrition. Children living in urban areas suffer more from undernutrition (wasting, stunting and wasting) than their peers in rural areas. Overweight affects children equally, irrespective of locality.

Prevalence of Malnutrition by Gender

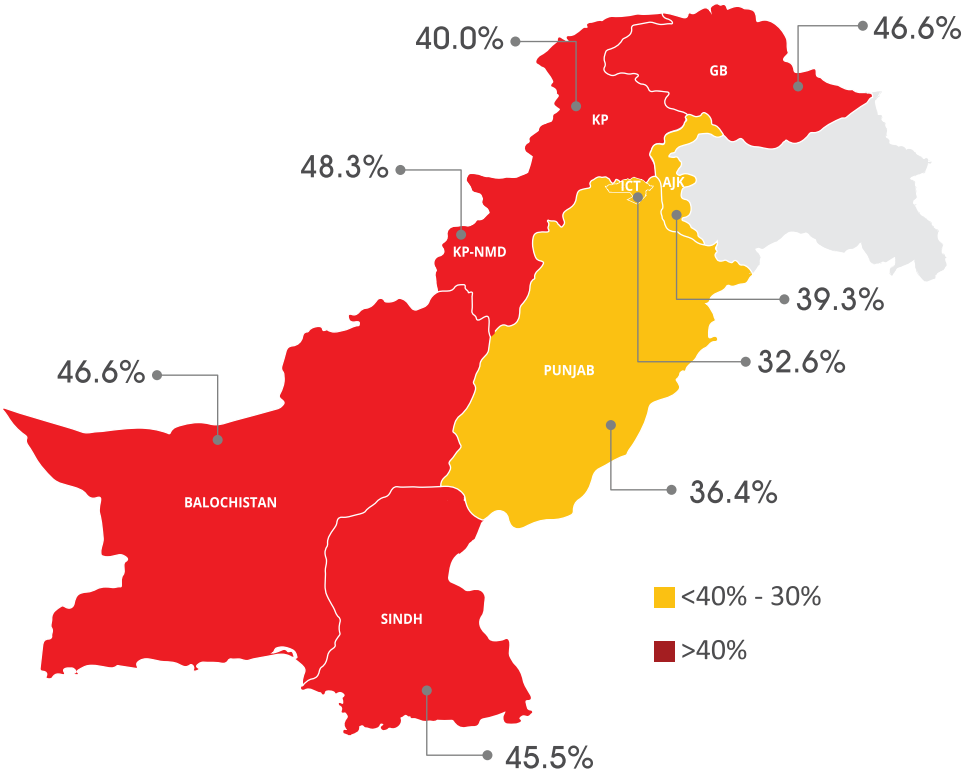


STUNTING

Stunting is a major problem in Pakistan, with 12 million children with low height for age. To ensure that this form of malnutrition does not continue to compromise the human capital required to sustain the socioeconomic development of Pakistan, stunting reduction is a top national priority.

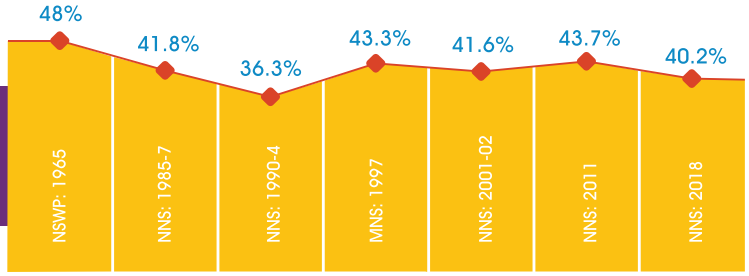
The national average (40.2%) masks provincial disparities. The prevalence of stunting varies from 32.6% in ICT to 48.3% in KP-NMD. The prevalence of stunting among young children in Sindh, Balochistan, KP-NMD and GB is higher than the national average.

Prevalence of Stunting by Province/Region



The prevalence of stunting improved from 1965 (48%) to 1994 (36.3%) but deteriorated from 2001 (41.6%) to 2011 (43.7%). In 2018, at 40.2%, it remains at a global critical level. The average annual reduction rate is estimated at 0.5%, too slow to significantly reduce the stunting rate in Pakistan.

Trends of Stunting in Pakistan



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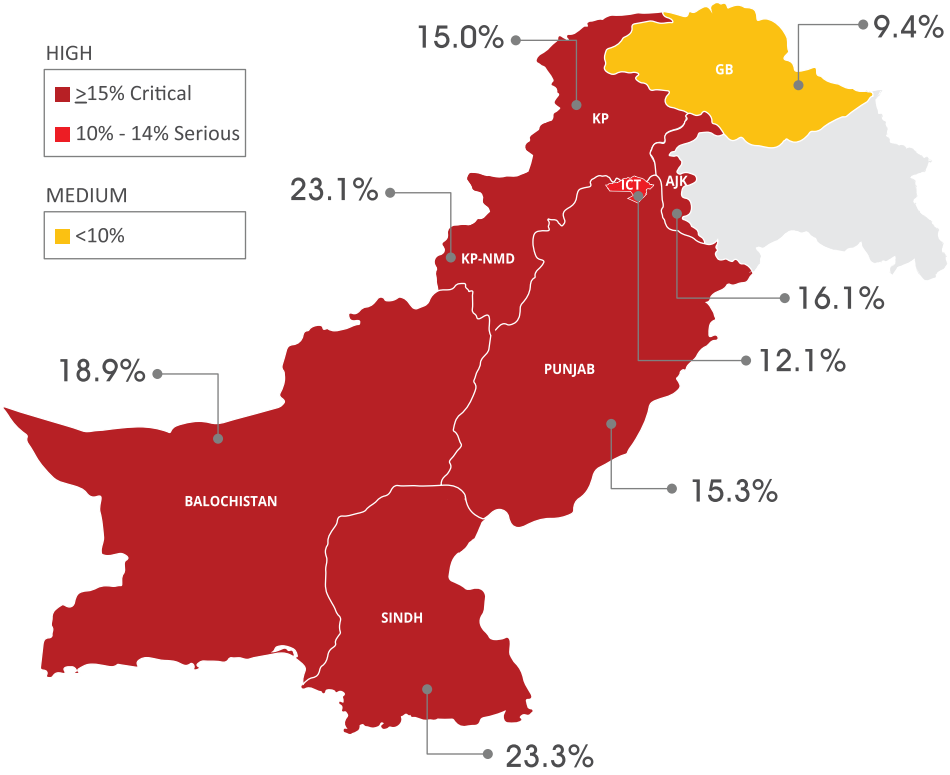
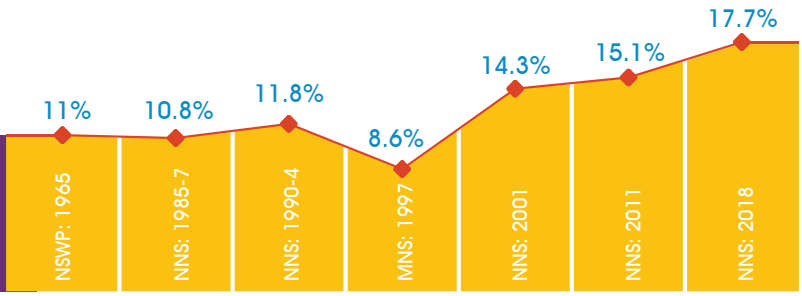
WASTING

Since 1997, the prevalence of low weight for height among young children is on the rise, from 8.6% in 1997 to 15.1% in 2011 and 17.7% in 2018. Despite improvements in other socioeconomic indicators, acute malnutrition remains in a state of nutrition emergency. This is the highest rate of wasting in Pakistan's history.

Prevalence of Wasting by Province/Region



Trends of Wasting in Pakistan



This form of malnutrition is most prevalent in Sindh (23.3%) and KP-NMD (23.1%), whereas GB and ICT have the lowest proportion of children with wasting, at 9.4% and 12.1% respectively. Sindh, Balochistan and KP-NMD have a higher prevalence of wasting than the national average. The prevalence of wasting among children under five in all provinces/regions excluding ICT and GB exceeds the emergency threshold (15%).

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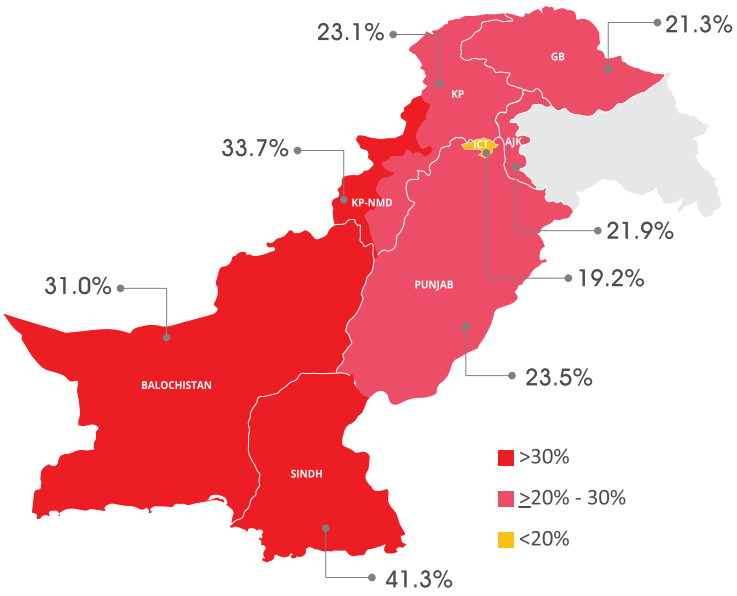
UNDERWEIGHT

The prevalence of underweight among children under five years of age (i.e. weight for age below 2 z-score) is high in all provinces/regions, from 19.2% in ICT to 41.3% in Sindh. The prevalence of underweight is below 20% only in ICT.

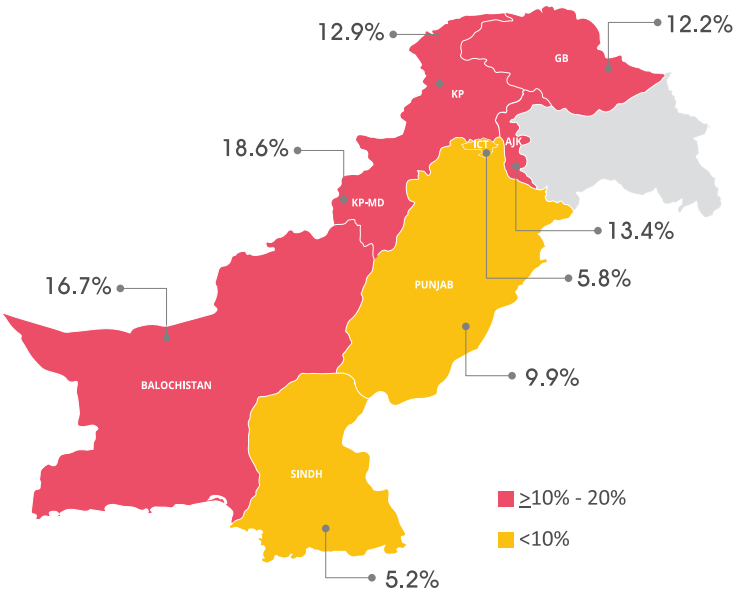
Prevalence of Underweight by Province/Region



OVERWEIGHT

The study estimated the proportion of overweight children under five to be 9.5%, twice the target set by the World Health Assembly. Prevalence is highest in KP-NMD (18.7%) and Balochistan (16.7%), and lowest in Sindh (5.2%) and ICT (5.8%). The prevalence of overweight among young children exceeds 10% in KP, Balochistan, KP-NMD, AJK and GB.

Prevalence of Overweight by Province/Region



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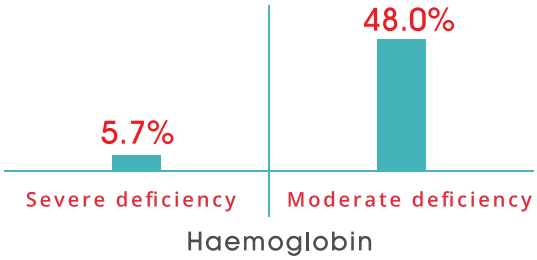
MICRONUTRIENT DEFICIENCIES IN CHILDREN UNDER FIVE YEARS OF AGE

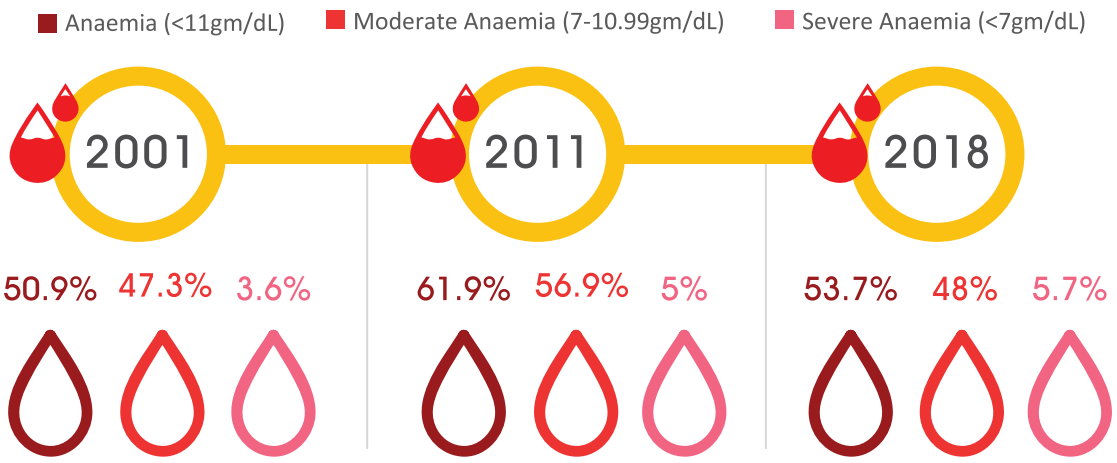
Anaemia in Children Under Five



More than half (53.7%) of Pakistani children are anaemic and 5.7% are severely anaemic. The prevalence of anaemia is slightly higher (54.2%) amongst boys than girls (53.1%). Children in rural areas are more likely to be anaemic (56.5%) than in urban areas (48.9%). A similar pattern was observed for severe anaemia (rural: 5.9%; urban: 5.2%).

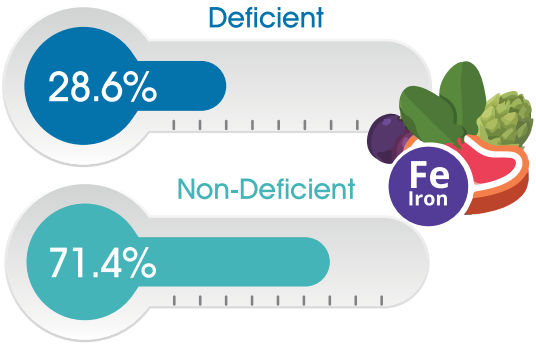
Trends of Anaemia in Pakistan

The prevalence of anaemia has been consistently high since 2001 when it stood at 50.9%, then rose to 61.9% in 2011, and declined to 53.7% in 2018.



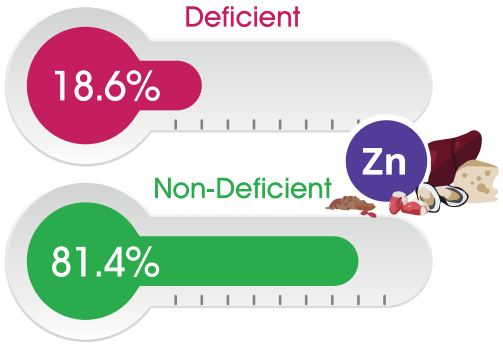
Iron Deficiency Anaemia Among Children Under Five

The prevalence of iron deficiency anaemia is 28.6% with a slightly higher proportion (29.1%) among boys than girls, and in rural (28.9%) than urban populations.



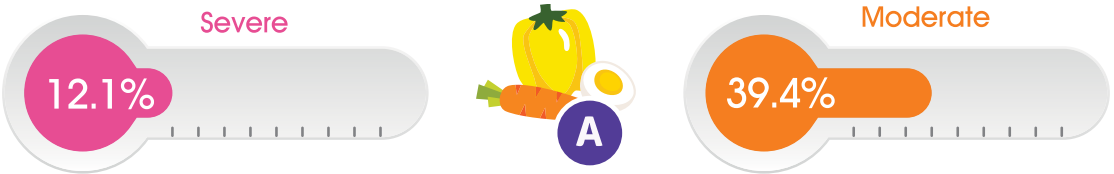
Zinc Deficiency Among Children Under Five

The prevalence of zinc deficiency is 18.6%, with similar proportions among boys and girls. Rural children have a slightly higher prevalence (19.5%) than those in urban areas (17.1%).



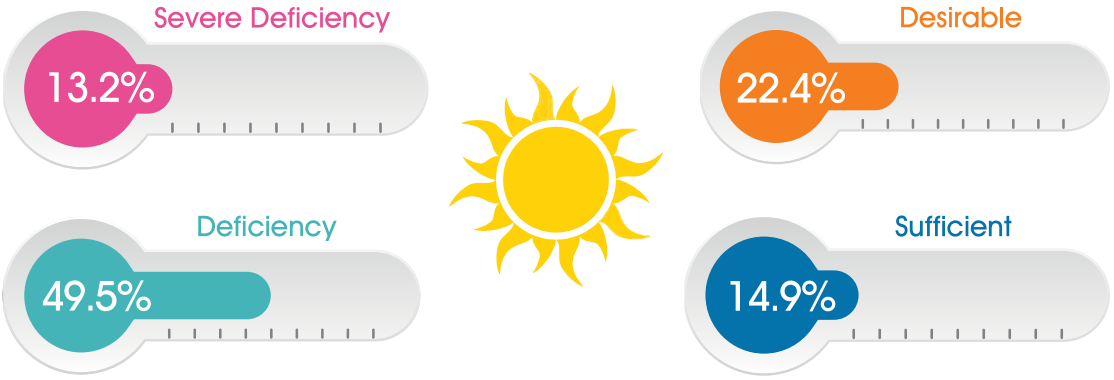
Vitamin A Deficiency Among Children Under Five

About 51.5% of children have vitamin A deficiency, of whom 12.1% have a severe deficiency. Prevalence is slightly higher (51.7%) among boys than in girls (51.3%).



Vitamin D Deficiency Among Children Under Five

A high prevalence (62.7%) of vitamin D deficiency was observed. A significant proportion (13.2%) of children have a severe deficiency. The prevalence is slightly higher (63.1%) among girls than boys (62.4%).



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PROGRAMME COVERAGE

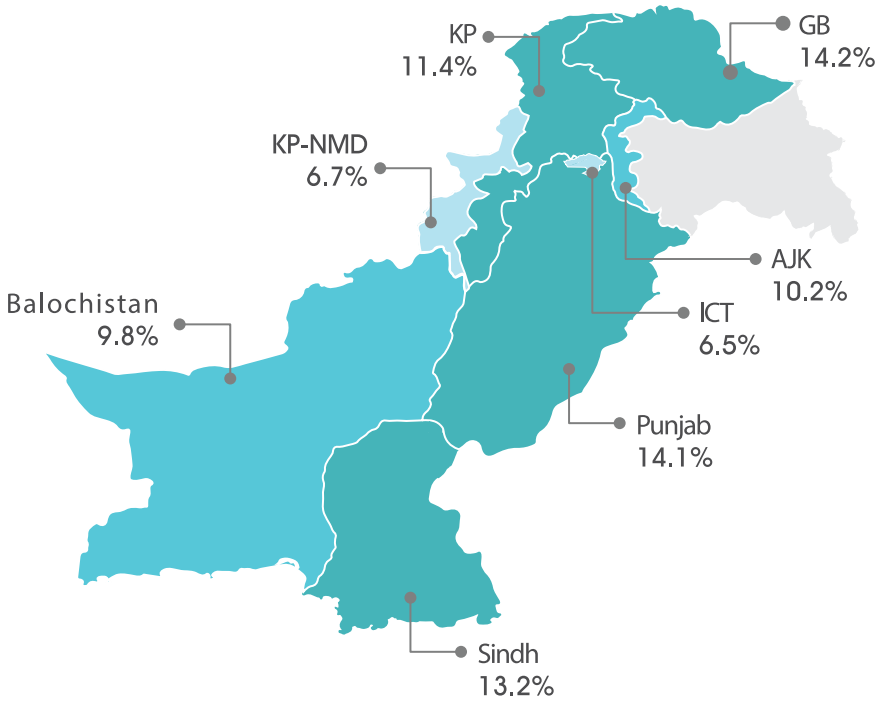
DEWORMING

Only 13.1% children aged 24–59 months were reported to have been given deworming medication in the six months prior to the survey, with lower coverage in urban (10.7%) than in rural (14.5%) settings.

Deworming by Locality (Urban/Rural)

Deworming medication in last 6 months

Deworming by Province/Region



Coverage of deworming medication is highest in GB (14.2%) and Punjab (14.1%) and lowest in ICT (6.5%) and KP-NMD (6.7%).

INFANT AND YOUNG CHILD FEEDING (IYCF) PRACTICES

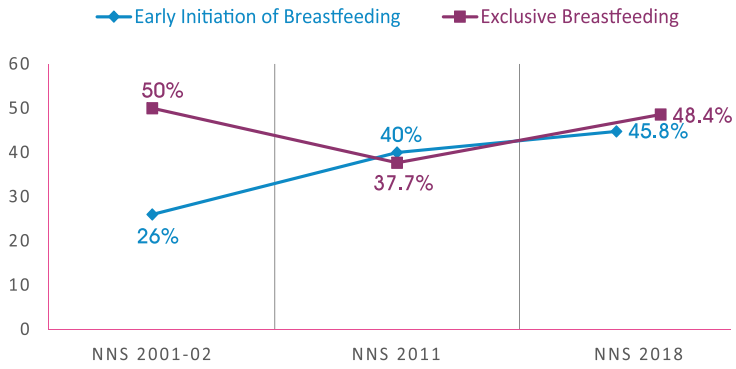
- BREASTFEEDING
- COMPLEMENTARY FEEDING

NNS 2018 finds that early initiation of breastfeeding, exclusive breastfeeding and continued breastfeeding show an upward trend from 2011, but most indicators related to complementary feeding are declining except the proportion of children receiving an adequately diversified diet.

BREASTFEEDING

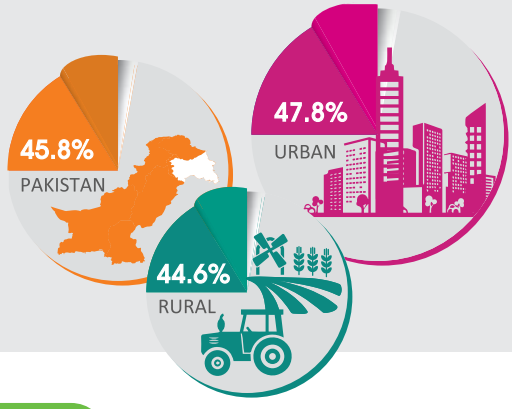
While there has been a steady increase in the proportion of children receiving breastmilk during the first hour after birth between 2011 and 2018, the trend for exclusive breastfeeding is not linear. From 50% in 2001, it decreased to 37.7% in 2011 and increased again to 48% in 2018, bringing Pakistan close to the World Health Assembly target of 50%.

Breastfeeding Trends



Nearly half (45.8%) of Pakistani babies start breastfeeding within the first hour of birth, an improvement of 6 percentage points from 2011. The practice of early initiation of breastfeeding is only three percentage points higher in urban areas than in rural areas.

Early initiation of breastfeeding (within first hour of birth)



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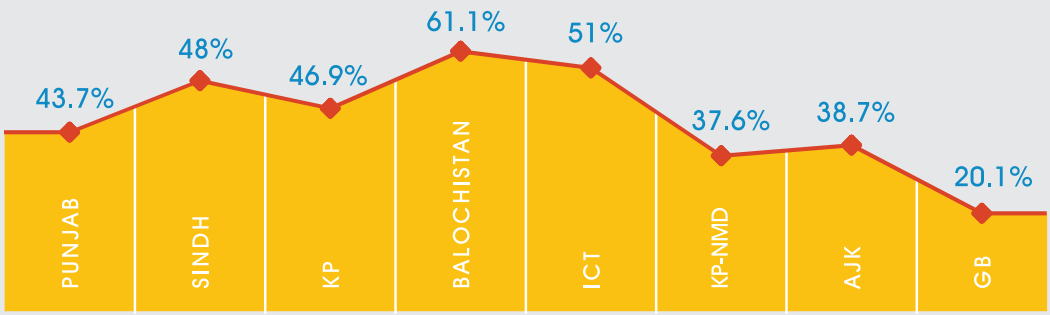
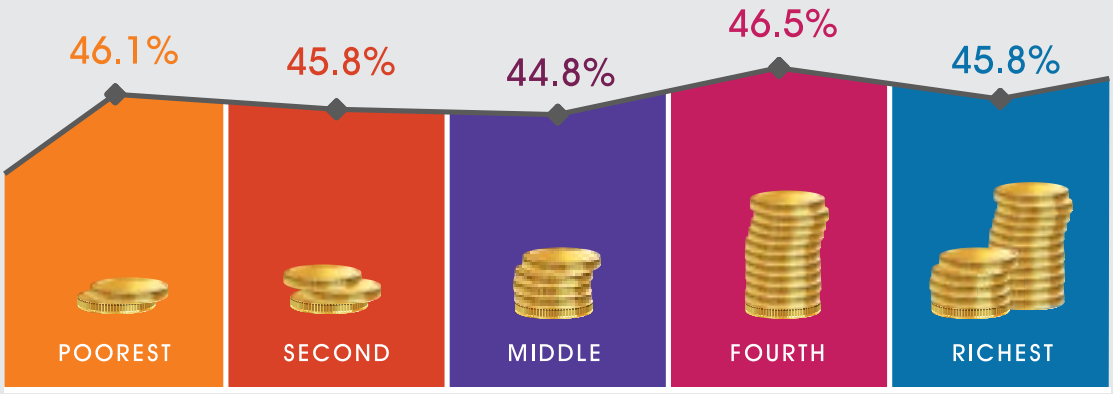
Early Initiation of Breastfeeding (within first hour of birth) by Province/Region



The practice of early initiation of breastfeeding varies from 20.1% in GB to 61.1% in Balochistan.

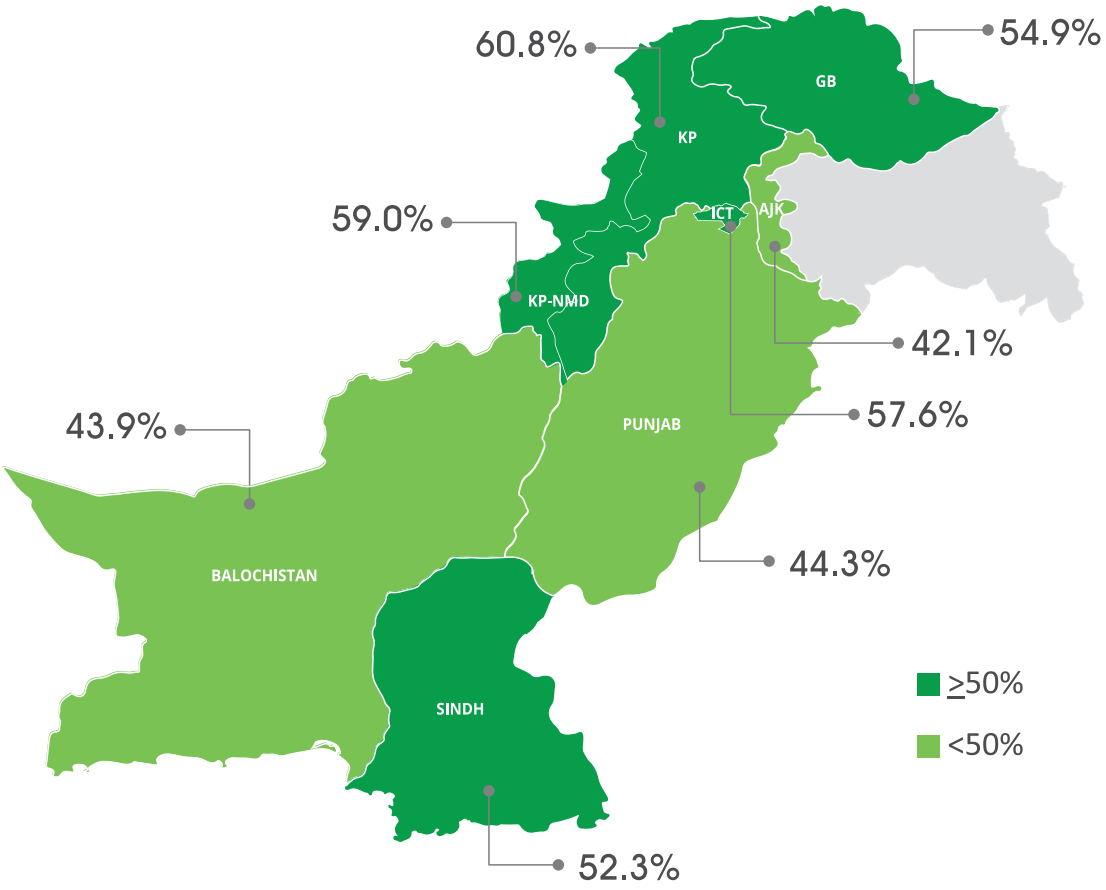
Early Initiation of Breastfeeding (within first hour of birth) by Wealth Quintile



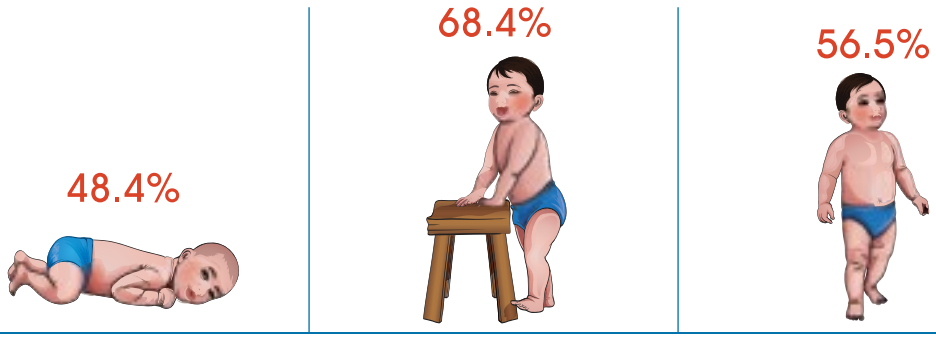
There is no significant correlation found between wealth and early initiation of breastfeeding.

Exclusive Breastfeeding by Province and Region

The proportion of children who are exclusively breastfed for the first six months of life is highest in KP (60.7%) and KP-NMD (59.0%), and lowest in AJK (42.1%) and Balochistan (43.9%) respectively.



Breastfeeding Practices in Pakistan



Prevalence of the practice of continued breastfeeding is highest at one year of age (68.4%) and thereafter decreases to 56.5% at two years of age. Relative to the rates in 2011 this represents a decrease from 77.3% and an increase from 54.3%, respectively.

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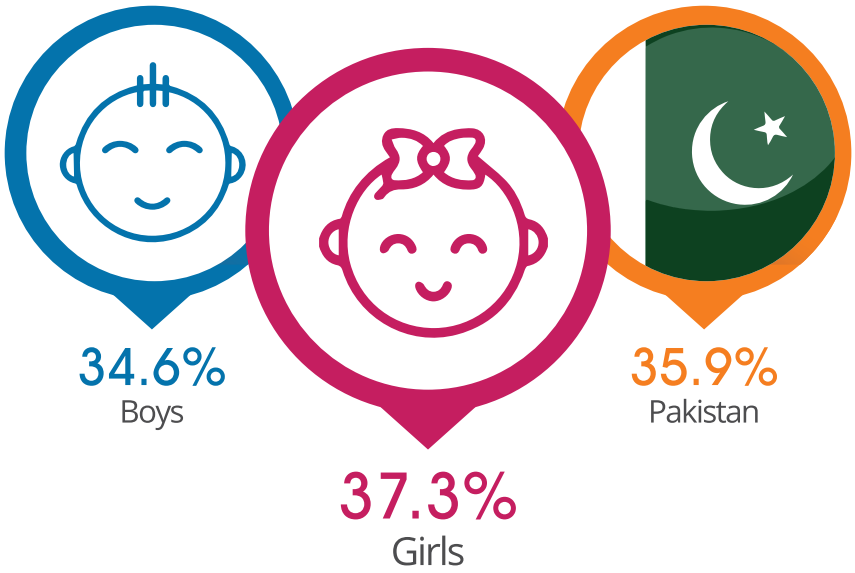
COMPLEMENTARY FEEDING PRACTICES IN PAKISTAN

Age-appropriate complementary feeding is an essential addition to breastfeeding after a child is six months of age. Quality complementary feeding is measured using three indicators: minimum dietary diversity, minimum meal frequency and minimum acceptable diet. NNS 2018 found all indicators to be far below acceptable levels.

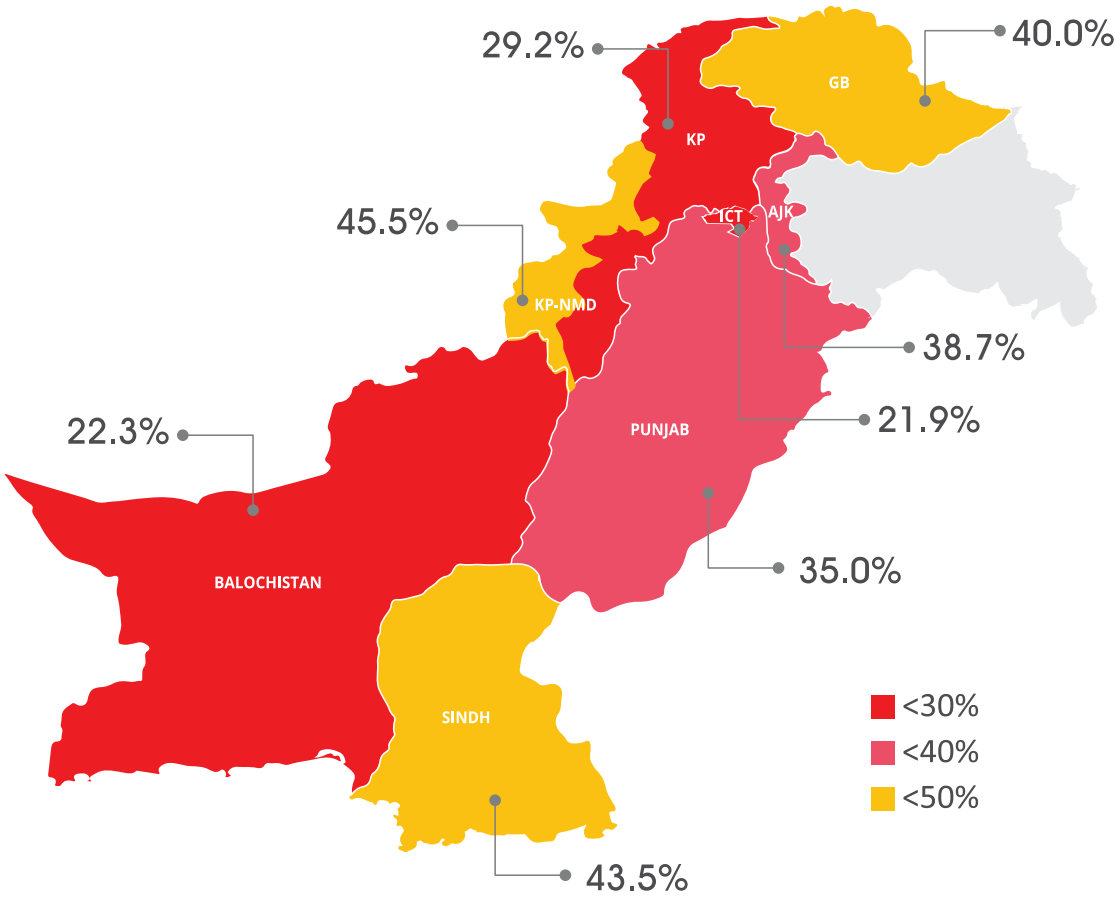
Age-Appropriate Complementary Feeding by Gender



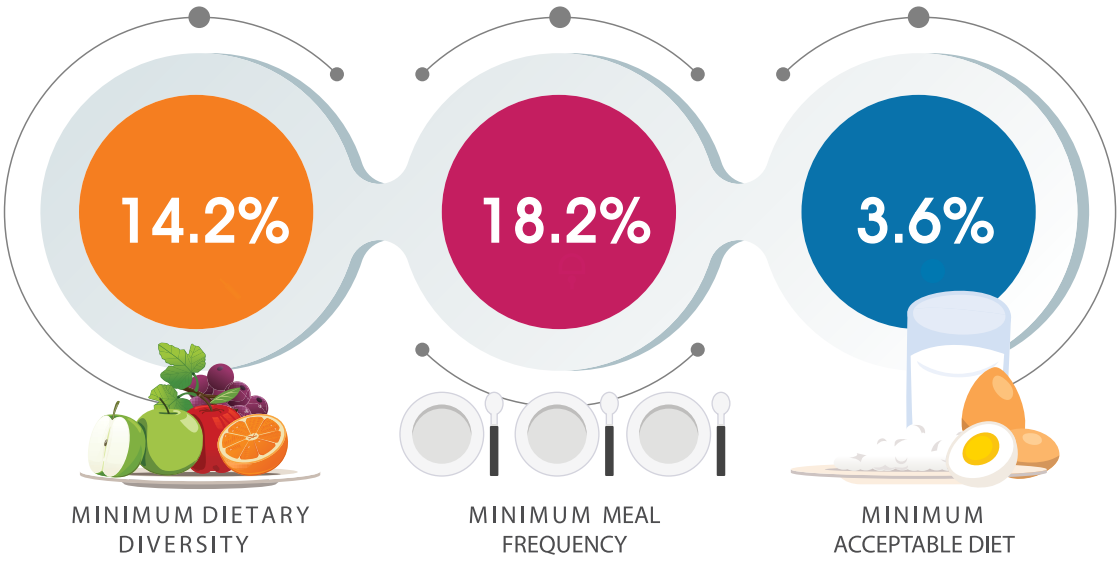
Only one of every three young children receives complementary food between 6–8 months of age. A smaller proportion of boys (34.6%) are introduced to complementary food at the right age compared to girls (37.3%).

Some provinces/regions (Sindh and KP-NMD) perform better than others but timely introduction of complementary feeding needs significant improvement in across Pakistan.

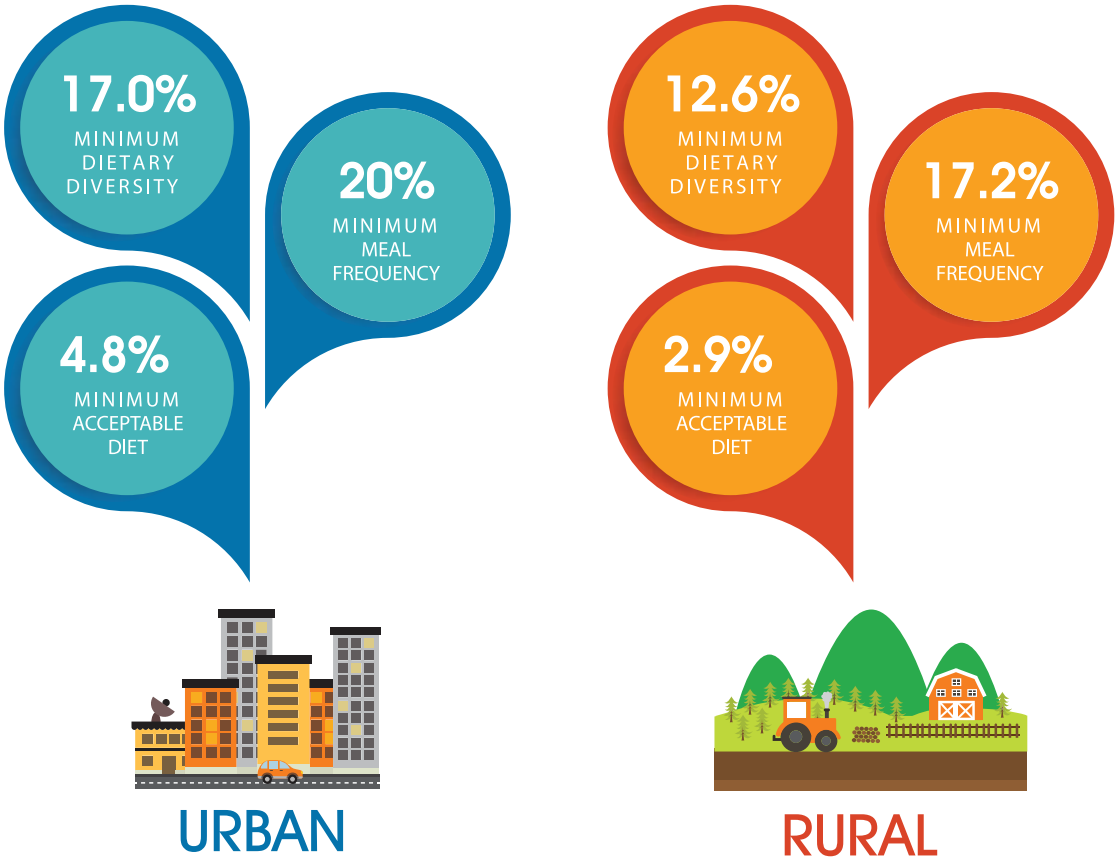
Age-Appropriate Complementary Feeding by Province/Region



Complementary Feeding in Pakistan



By Locality (Urban/Rural)



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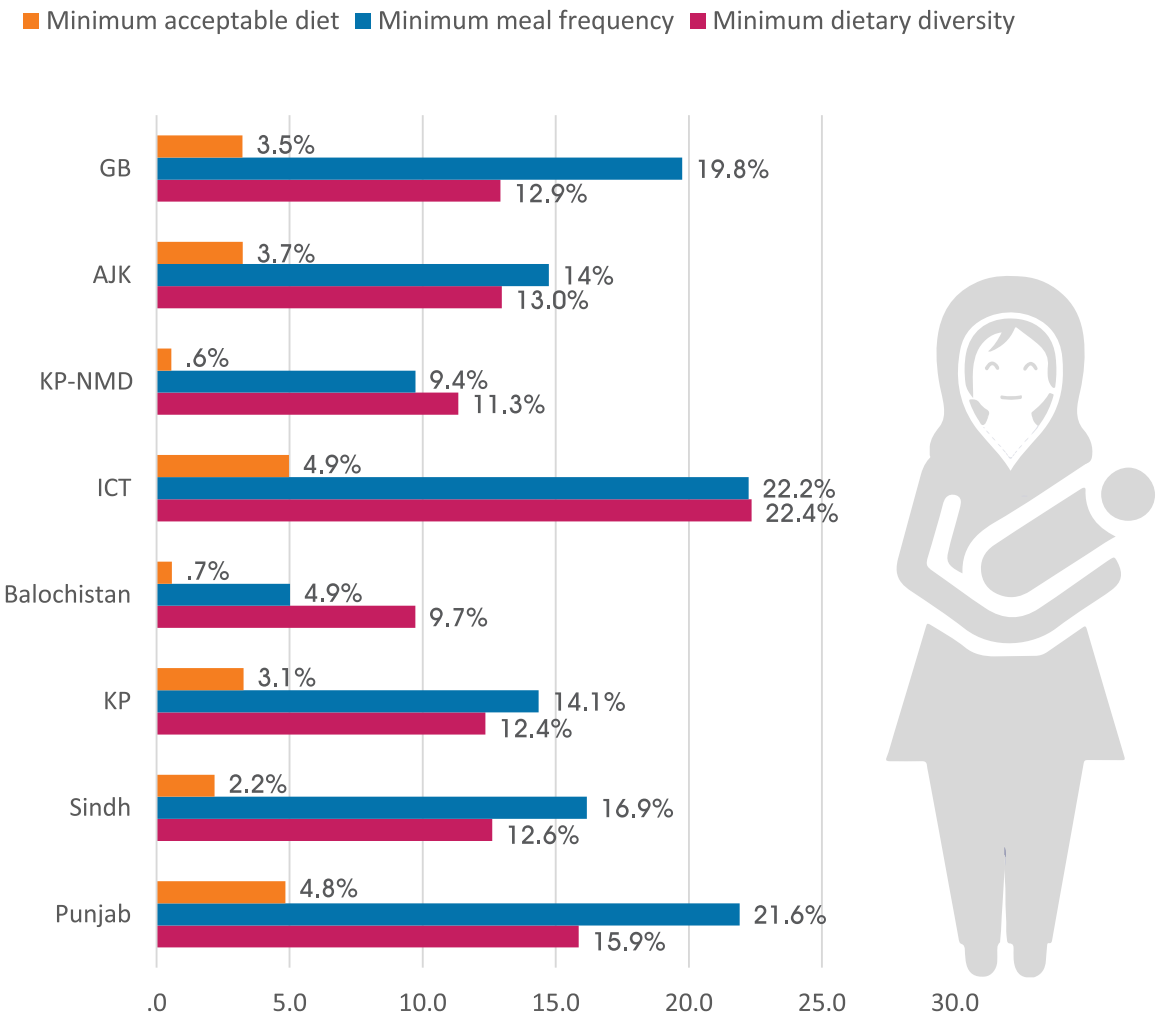
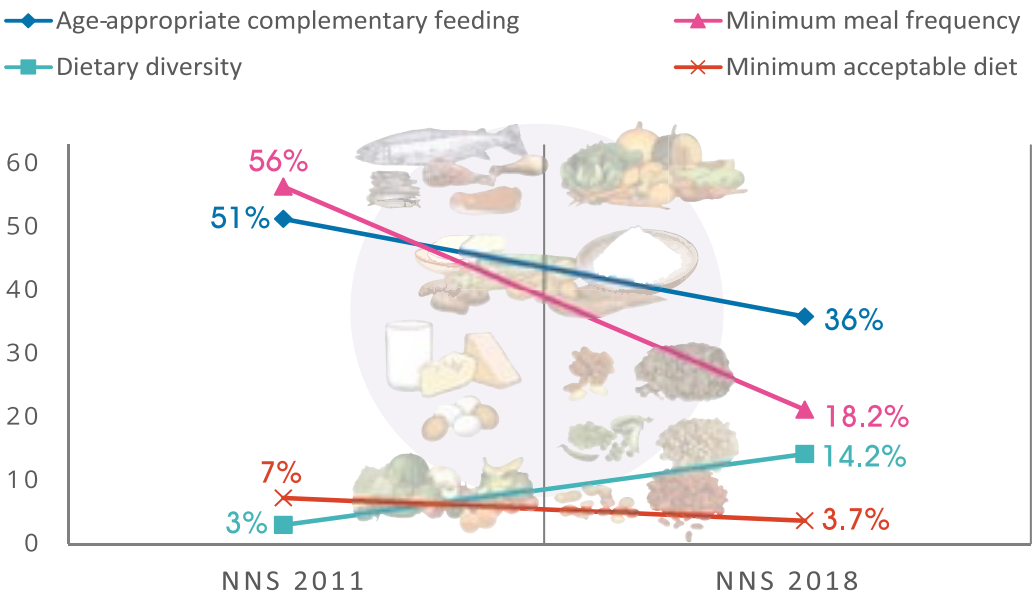
Complementary Feeding Practices by Province/Region



Over time, three of the four complementary indicators have declined significantly. This points to a need for robust and large-scale promotion of adequate complementary practices in Pakistan to contribute to reducing stunting among young children.

Only one in seven children (14.2%) aged 6–23 months receive a meal with minimum dietary diversity, with at least four different food groups. One in four children (18.2%) receives the minimum number of meals a day. Complementary foods that meet the requirements of a minimum acceptable diet to ensure optimal growth and development for children aged 6–23 months are provided to less than one in 20 children (3.6%). More children in urban areas receive adequate complementary foods than their peers in rural areas, but rates are critically low in both localities.

Trends in Complementary Feeding

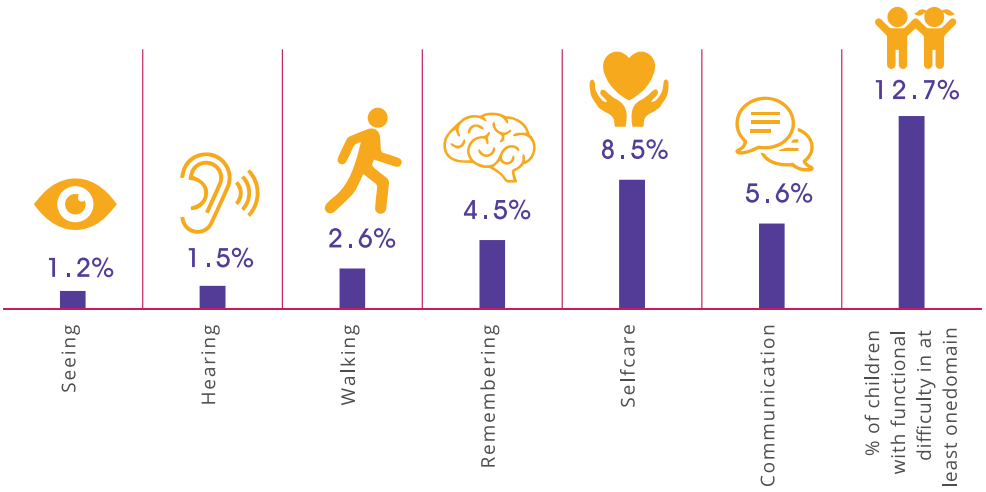


All complementary feeding indicators are far below acceptable levels

DISABILITY AMONG CHILDREN AGED 24-59 MONTHS

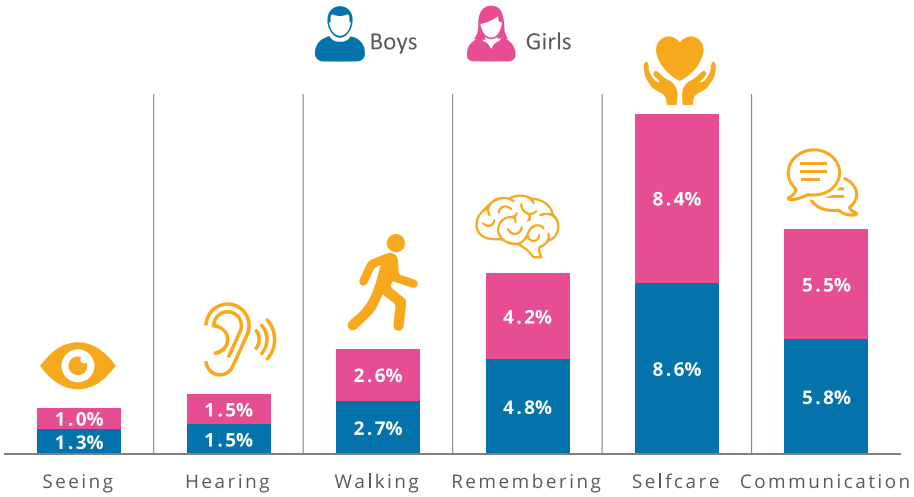
The Washington Group on Disability Statistics determines functional disability among children aged 2–5 years based on six core functional domains. NNS 2018 found that 12.7% children have a functional disability in one of these six domains. Around 1.2% demonstrate functional disability in seeing, 1.5% in hearing, 2.6% in walking, 4.5% in remembering, 8.5% in selfcare and 5.6% in communication.

Functional Disability Among Children Aged 24-59 Months



In Pakistan, boys are more likely to have a functional disability related to remembering. For all other types of functional disability, boys and girls are equally affected.

Functional Disability Among Children Aged 24-59 Months by Gender



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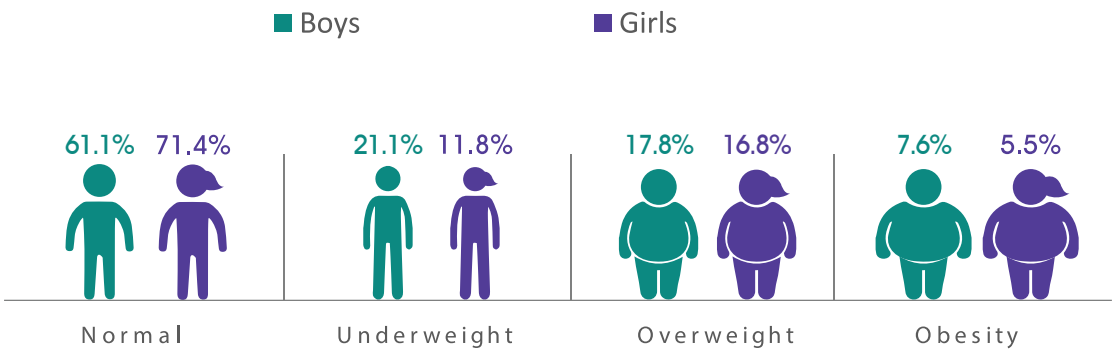
ADOLESCENT GIRLS & BOYS (10-19 YEARS)

About two-thirds of the sampled adolescent girls aged 10–19 years (62.9%) lived in rural areas and 37.1% in urban areas. The majority of girls (94.7%) in the survey sample were never married while 5.2% were currently married. A large proportion (38%) of adolescent girls belonged to the two highest wealth quintiles. Of the sampled adolescent boys (10–19 years) 63.5% lived in rural areas and 36.5% in urban areas.

ADOLESCENTS NUTRITION (10-19 YEARS)

Nutritional Status of Adolescent Girls and Boys



NNS 2018 shows that almost one in eight adolescent girls is underweight. Adolescent boys are more affected than adolescent girls, with one in five underweight.

More adolescent girls are overweight compared to their male peers, at 16.8% and 17.8% respectively. Obesity is a public health issue of concern in Pakistan, with 7.6% of adolescent boys and 5.5% of adolescent girls affected. Overweight and obesity affect adolescents similarly in both rural and urban areas of Pakistan.

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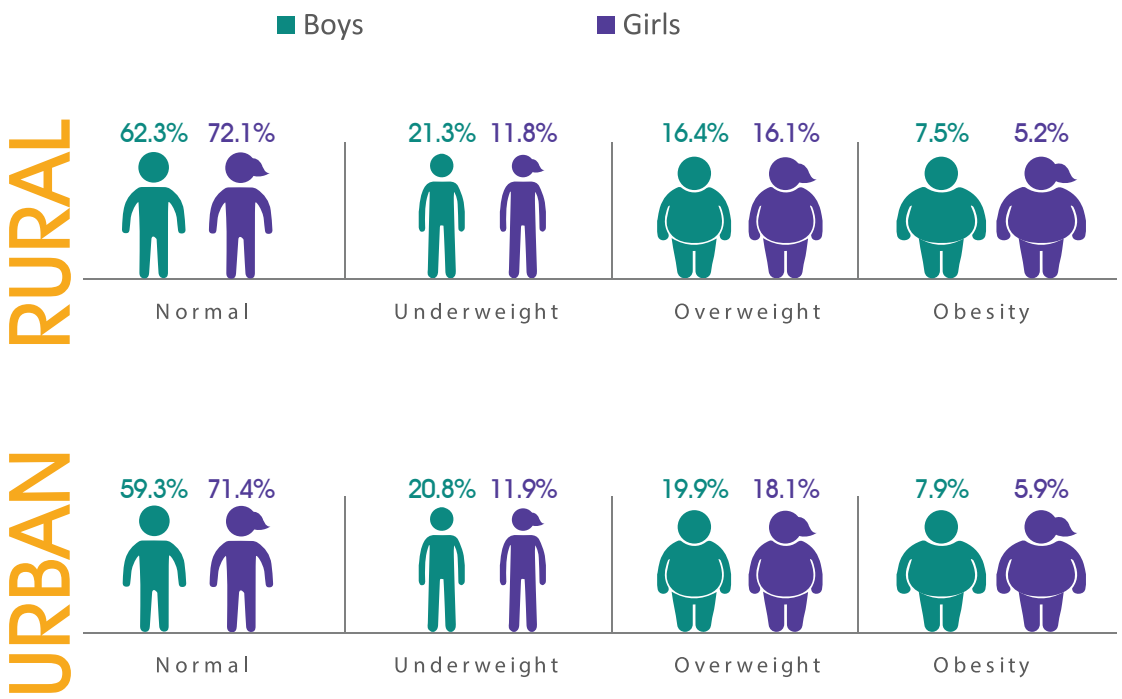
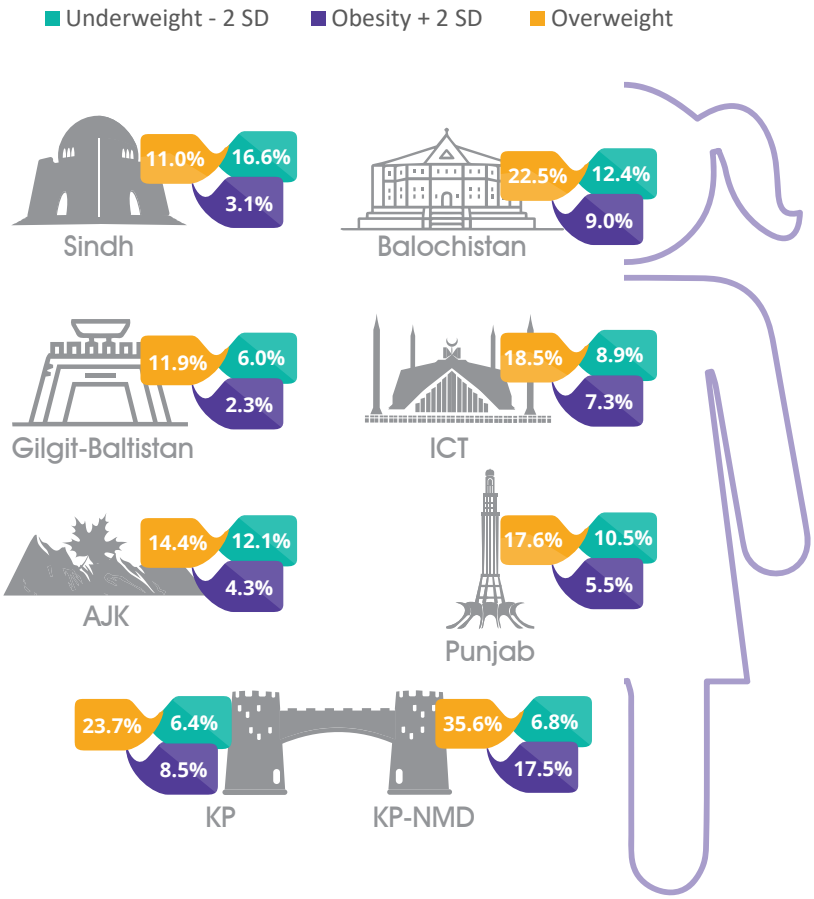
Nutritional Status of Adolescent Girls and Boys by Locality (Urban/Rural)



Across all of Pakistan's provinces/regions, the double burden of malnutrition – high prevalence of underweight combined with high prevalence of overweight or obesity – is a major concern and requires serious consideration to curb the incidence of noncommunicable diseases.

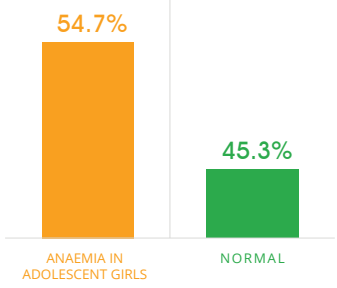
Nutritional Status of Adolescent Girls by Province/Region



Anaemia Among Adolescent Girls

More than half (54.7%) of adolescent girls in Pakistan are anaemic, Adolescent girls in rural areas are more likely (56.0%) to be anaemic than their counterparts in urban areas (52.5%).

Haemoglobin Status Among Adolescent Girls



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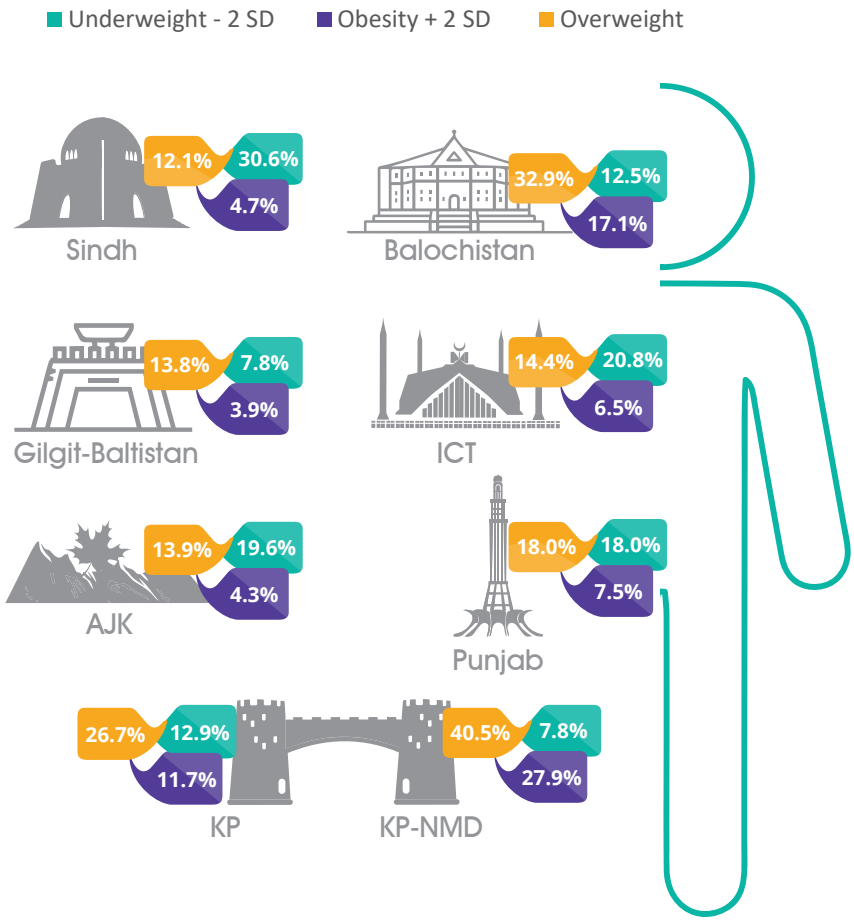
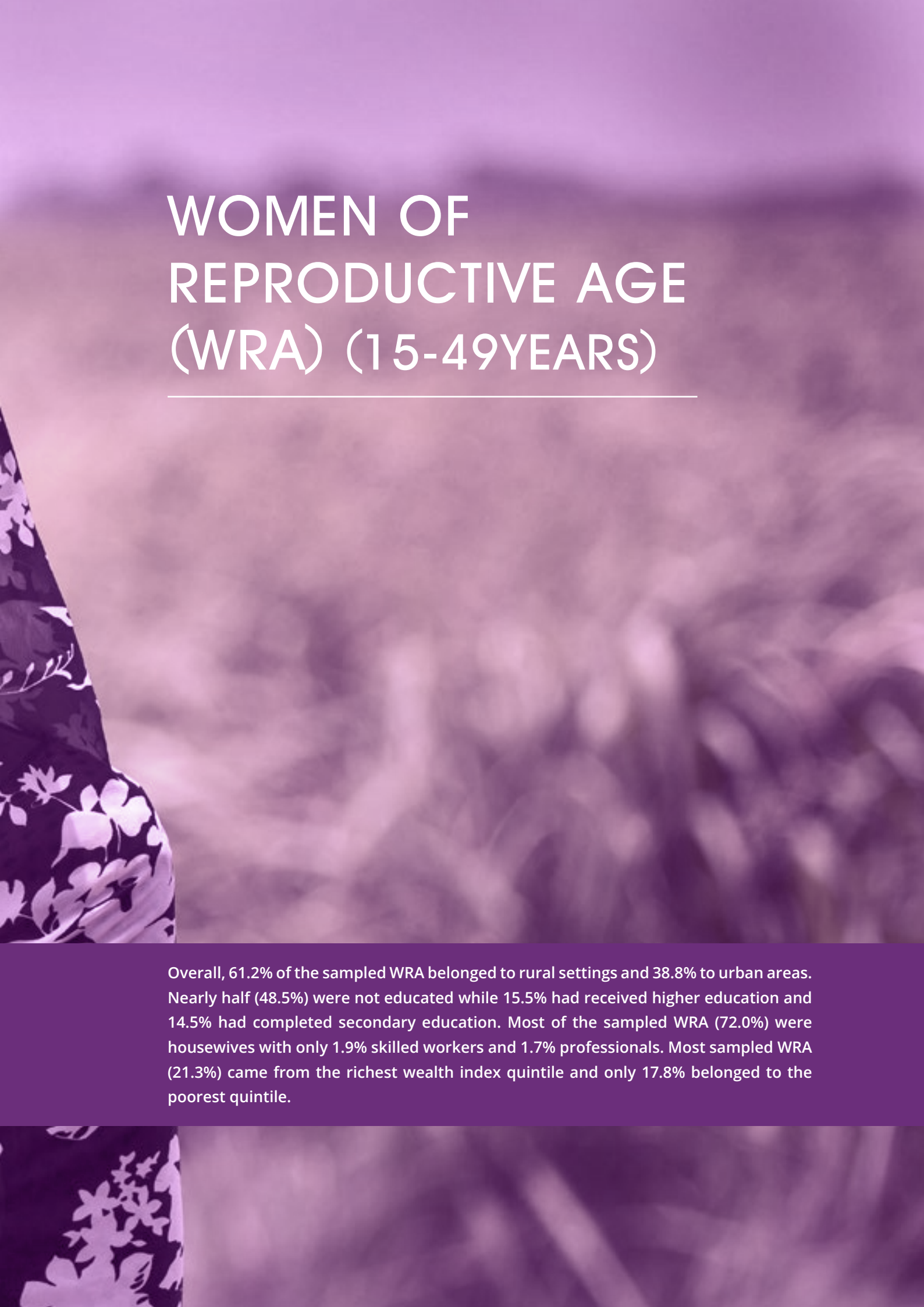
Nutritional Status of Adolescent Boys (BMI) by Province/Region



WOMEN OF REPRODUCTIVE AGE (WRA) (15-49YEARS)



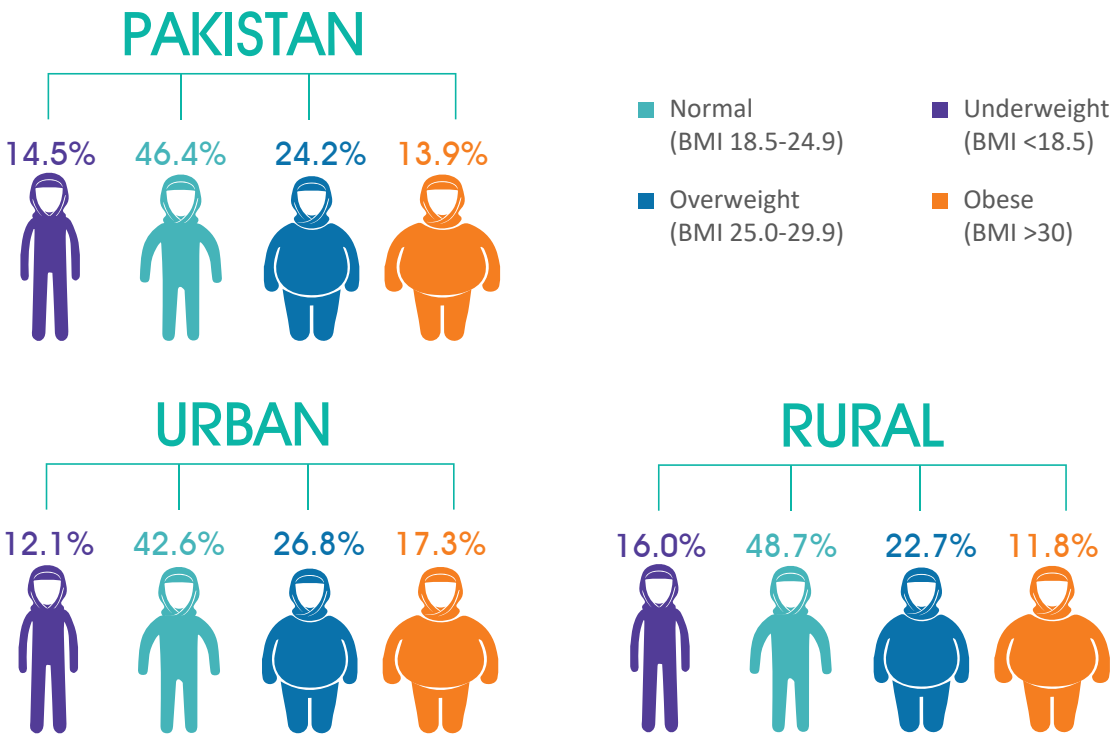
Overall, 61.2% of the sampled WRA belonged to rural settings and 38.8% to urban areas. Nearly half (48.5%) were not educated while 15.5% had received higher education and 14.5% had completed secondary education. Most of the sampled WRA (72.0%) were housewives with only 1.9% skilled workers and 1.7% professionals. Most sampled WRA (21.3%) came from the richest wealth index quintile and only 17.8% belonged to the poorest quintile.

WOMEN OF REPRODUCTIVE AGE (15-49 YRS)

RESPONDENT CHARACTERISTICS

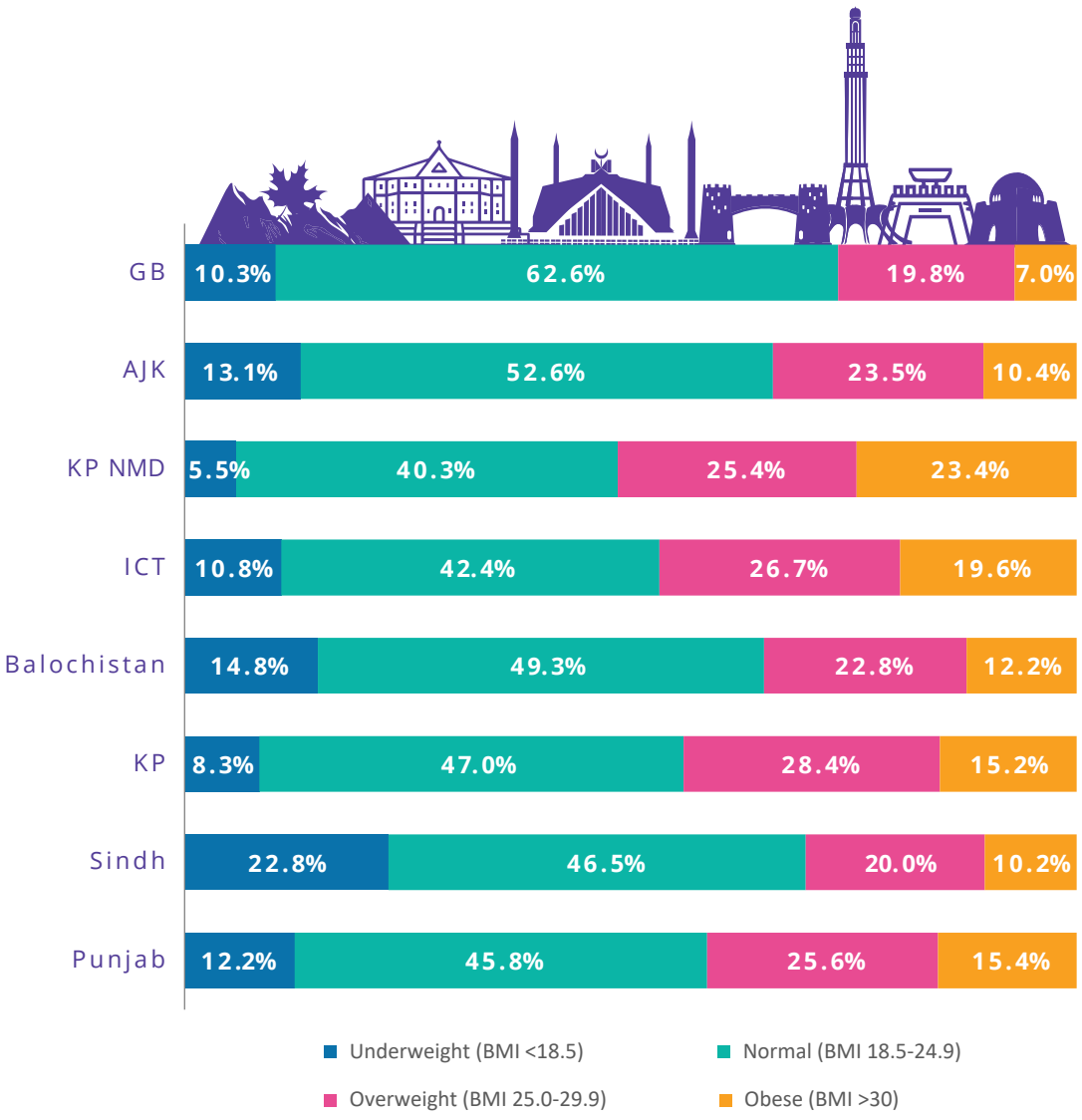
In Pakistan WRA aged 15–49 years bear a double burden of malnutrition. One in seven (14.4%) are undernourished, a decline from 18% in 2011 to 14%, while overweight and obesity are increasing. In NNS 2011 28% were reported to be overweight or obese, rising to 37.8% 2018. Urban/rural disparity is apparent: women in rural areas are more malnourished, while overweight and obesity are higher in urban women.

Nutritional Status of WRA (15-49 years) by Body Mass Index (BMI)



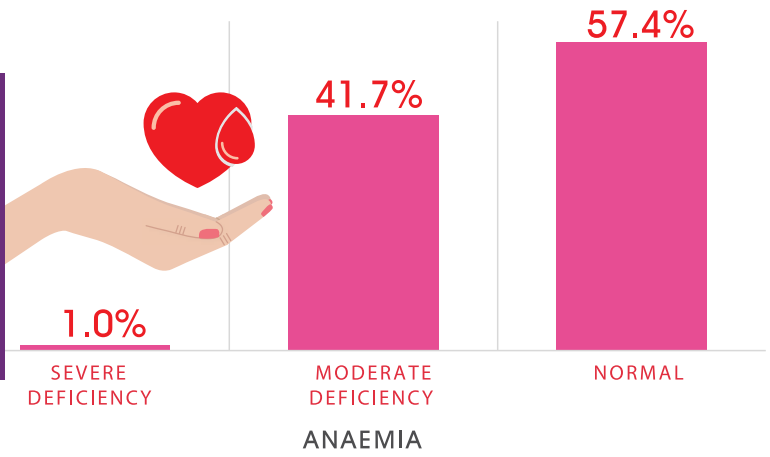
Nutritional Status of WRA (15-49 years) by Province/Region

At provincial/regional level, Sindh, Balochistan and AJK have more undernourished women while overweight and obesity are more pronounced in ICT, KP and KP-NMD.



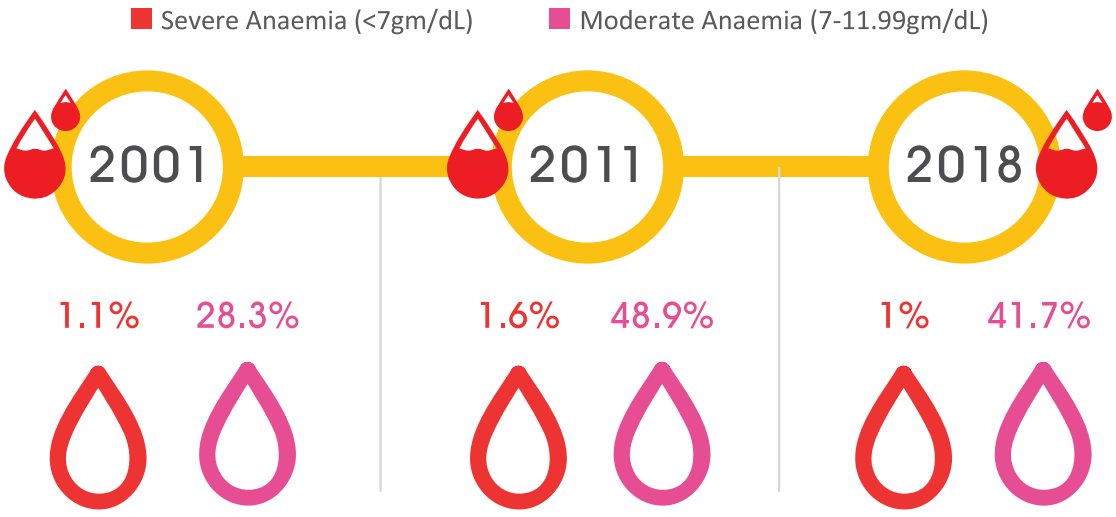
MICRONUTRIENT DEFICIENCIES IN WOMEN OF REPRODUCTIVE AGE (15-49 YRS)

Anaemia among Women of Reproductive age



About 41.7% of WRA are anaemic, with a slightly higher proportion in rural (44.3%) than urban settings (40.2%).

Trend Analysis in Anaemia



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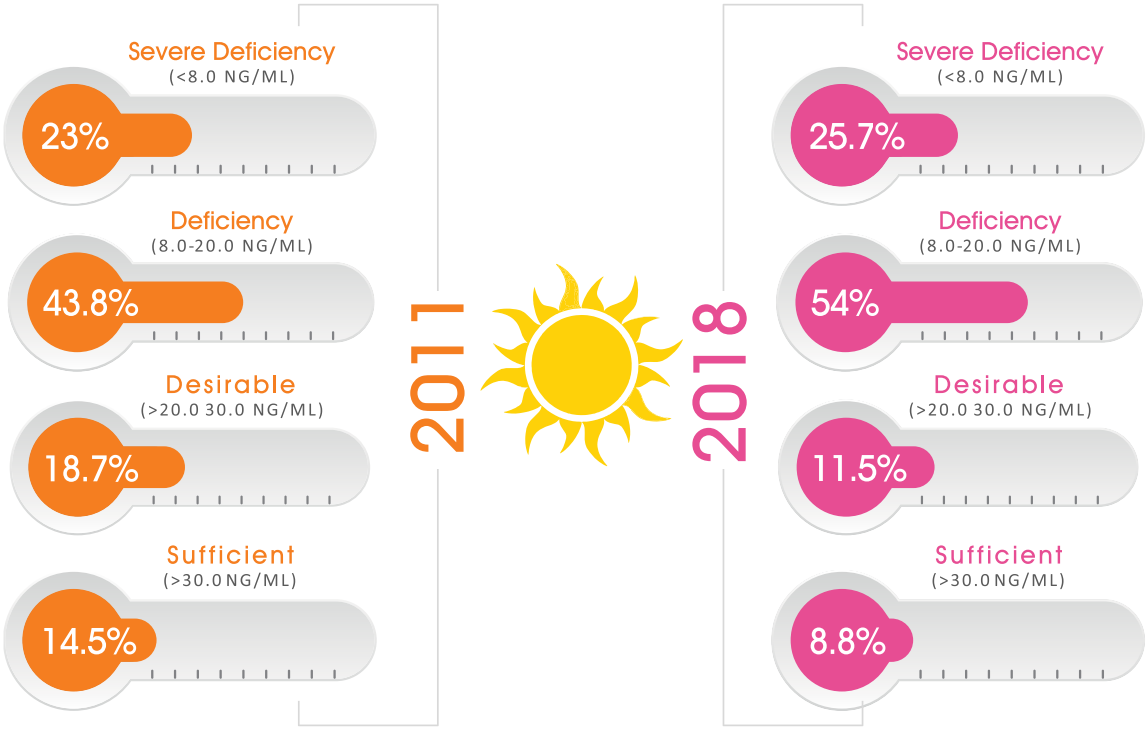
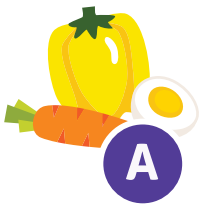
Vitamin **D** Deficiency

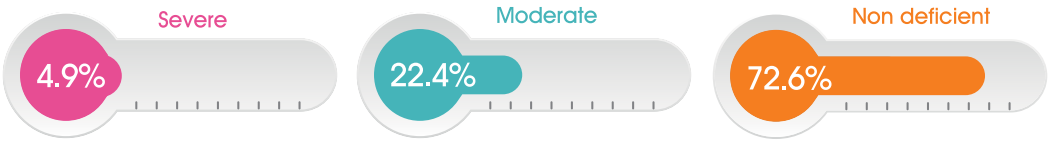
The majority of WRA (79.7%) are affected by vitamin D deficiency, with 54.0% experiencing moderate vitamin D deficiency and 25.7% experiencing severe deficiency. Vitamin D deficiency is more common in urban (83.6%) than in rural settings (77.1%).



Vitamin **A** Deficiency in Women Age 15-49 Years

Over a quarter of WRA (27.3%) are deficient in vitamin A, with 22.4% experiencing moderate and 4.9% severe deficiency. This is more prevalent among WRA in rural settings (29.3%). Balochistan (34.6%) has the highest proportion of WRA with vitamin A deficiency.





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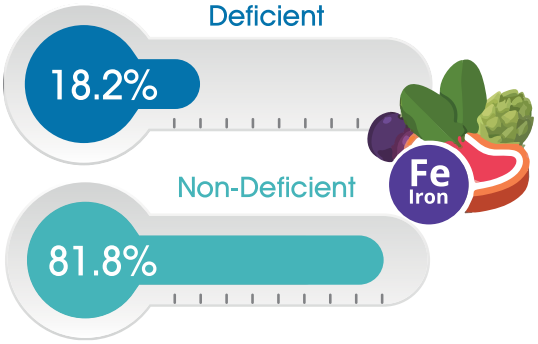
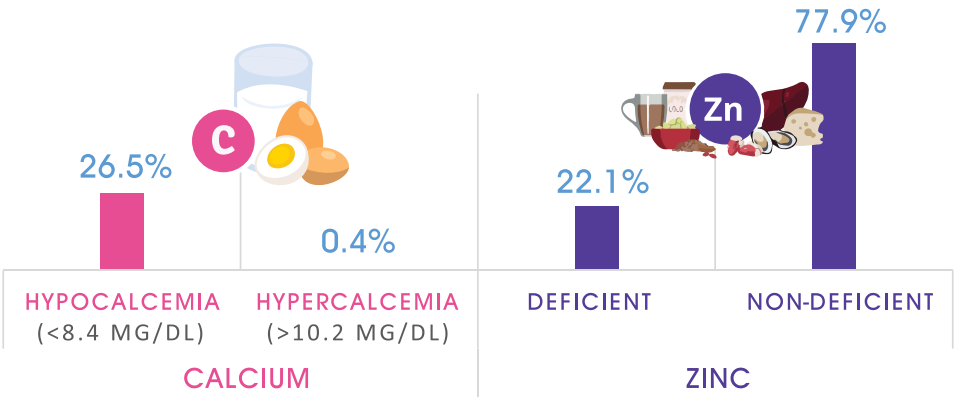
Iron Deficiency Anaemia in WRA - 15-49 Years

About 18.2% of WRA are iron deficient. This is more pronounced among women residing in rural (18.7%) than urban (17.4%) settings. Sindh has the highest proportion of iron deficiency anaemia with about a quarter (23.8%) of all WRA affected, followed closely by Balochistan (19.0%) and Punjab (18.7%).



Calcium and Zinc Deficency

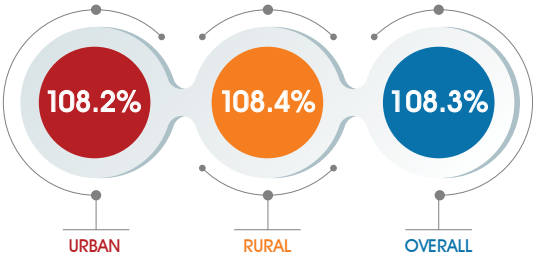


About 26.5% of WRA are hypocalcaemic while 0.4% are hypercalcaemic.

Zinc deficiency (22.1%) is more common in rural settings (24.3%) than in urban areas (18.7%). Punjab has the highest proportion of WRA with zinc deficiency (24.1%) followed by Balochistan (23.4%) and Sindh (21.4%), while KP has the lowest prevalence (15.9%).

Median Urinary Iodine Concentration

Median urinary Iodine Concentration in WRA is 108.3. The MUIC is 108.4 in non pregnant WRA as compared to pregnant which is 108. There is no difference in the MUIC among urban and rural WRA.



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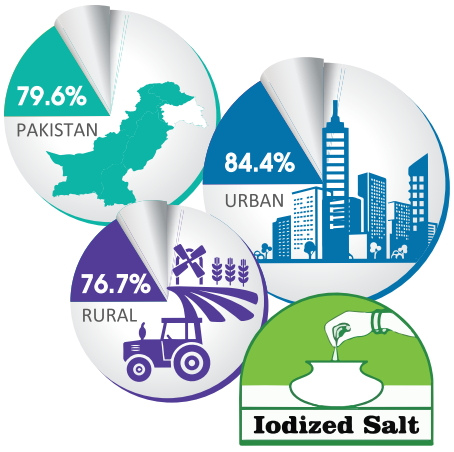
UNIVERSAL SALT IODIZATION IN PAKISTAN

Salt samples were taken from 100,304 households across provinces/regions and were tested using rapid test kits to identify adequately iodized salt (≥15 ppm and <40 ppm iodine). Of these, 70.2% were rural households and the remainder urban.

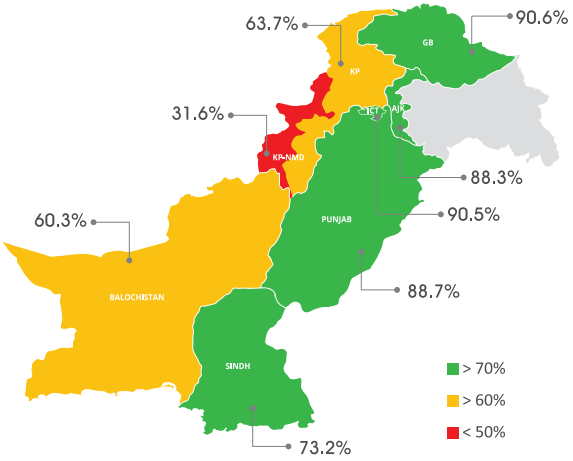
UNIVERSAL SALT IODIZATION IN PAKISTAN

Iodine is essential for thyroid function and for physical and mental development. Daily use of adequately iodized salt is the best strategy to overcome iodine deficiency disorders. Across Pakistan, almost four out of five households consume iodized salt. A greater proportion of households in urban settings consume iodized salt compared to households in rural areas.

Use of Iodized Salt at HH Level



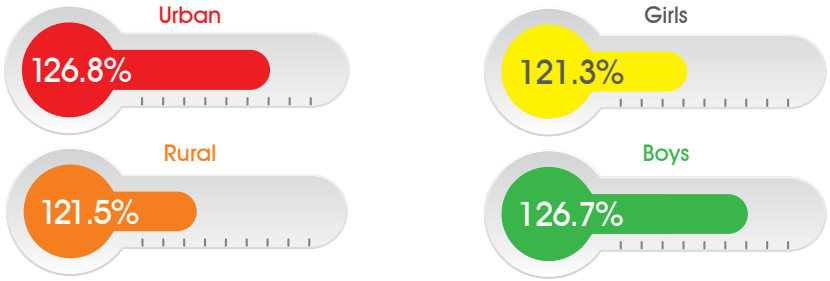
Use of Iodized Salt at HH Level by Province/Region



Consumption of iodized salt is very low (31.6 percent) in KP-NMD. By contrast, in ICT, Punjab, AJK and GB, consumption of iodized salt exceeds 85%.

Median Urinary Iodine Concentration Among Children aged 6-12 years

Median Urinary Iodine Concentration indicate adequate iodine intake. The survey showed that median urinary iodine of school-aged children (6-12 yrs) in Pakistan was 122.9 µg/L. (urban: 126.8 µg/L; rural: 121.5 µg/L). Median urinary iodine values were better for boys (126.7 µg/L) than for girls (121.3 µg/L).



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NUTRITION SENSITIVE SECTORS

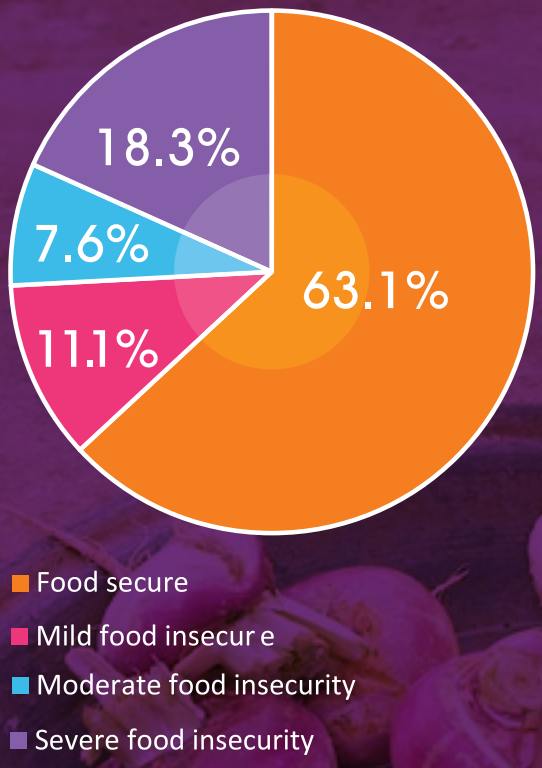
A total of 96,307 people lived in households that were assessed for food insecurity using the Food and Agriculture Organization's Food Insecurity Experience Scale (FIES), which captures self-reported food-related behaviours and experiences associated with increasing difficulties in accessing food due to resource constraints.

Drinking water sample was collected from 31,828 households to determine water quality.

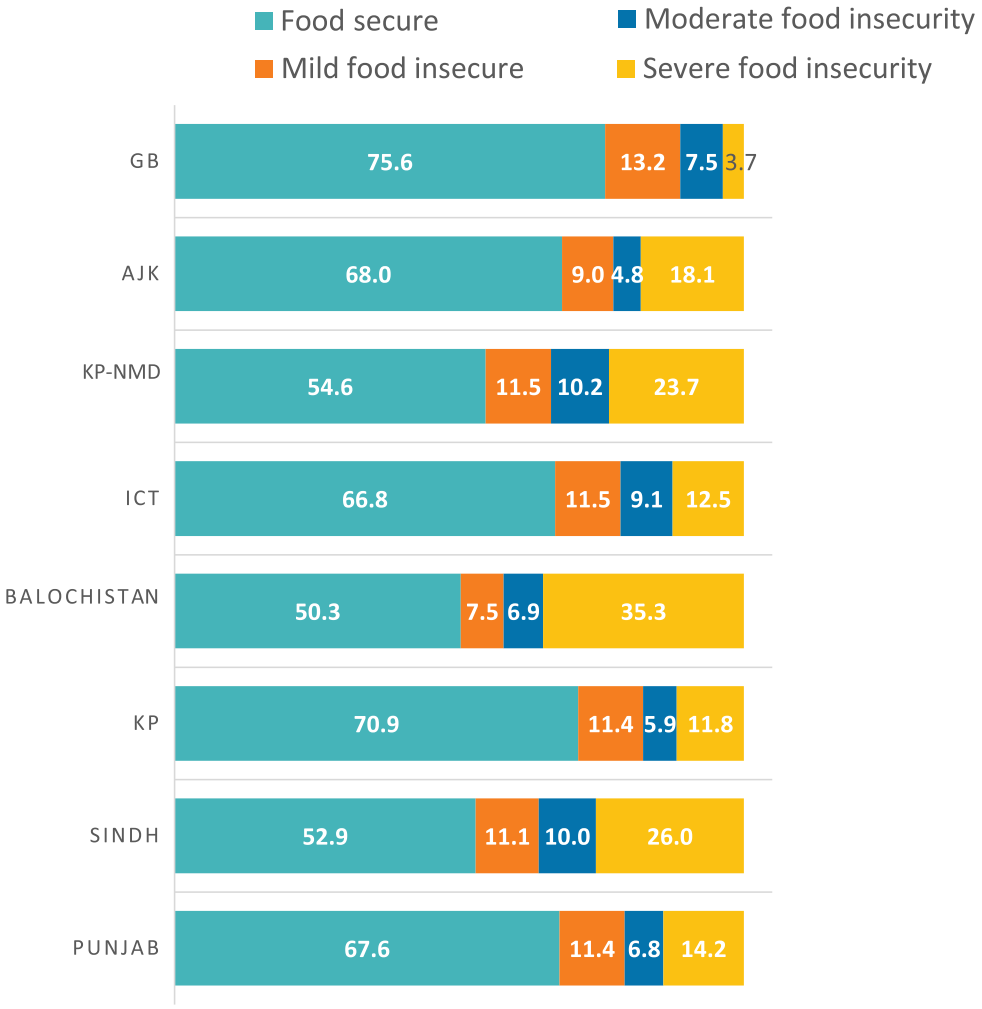
FOOD SECURITY

More than half of households (63.1%) are "food secure" on the FIES measure, however over third (36.9%) remain food insecure. A larger percentage of households are food secure in GB (75.6%) and KP (70.9%) and experience less severe food insecurity than in Balochistan (50.3%) and KP-NMD (54.6%).

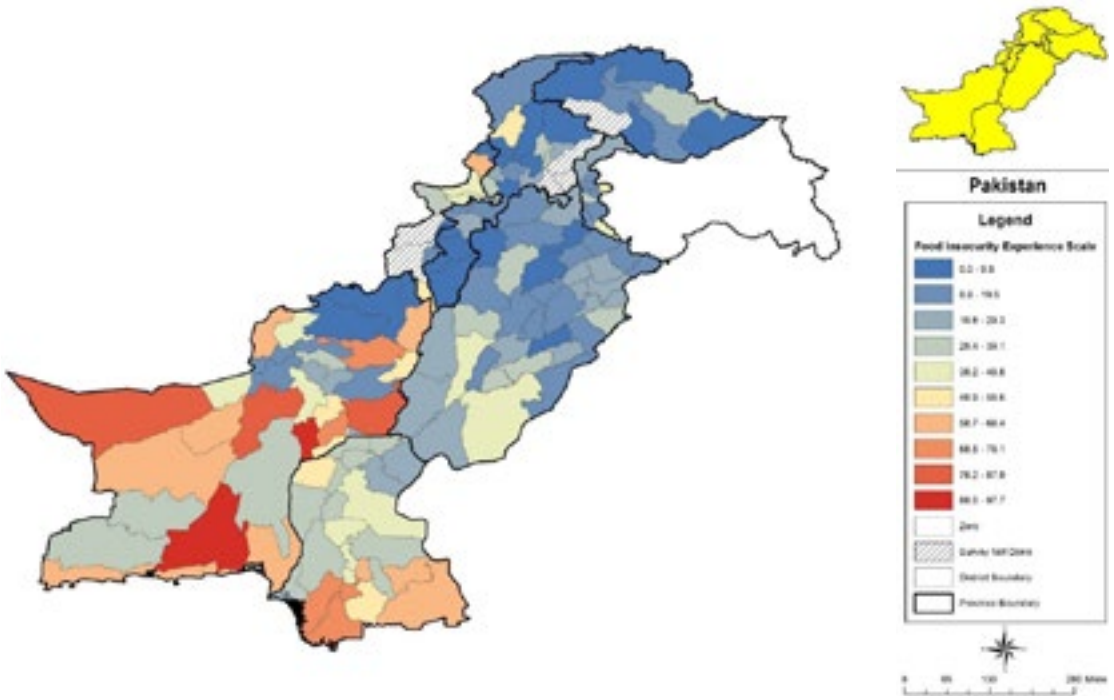
Household Food Insecurity Based on FIES Pakistan



Household Food Insecurity by Province and Region



National Nutrition Survey 2018



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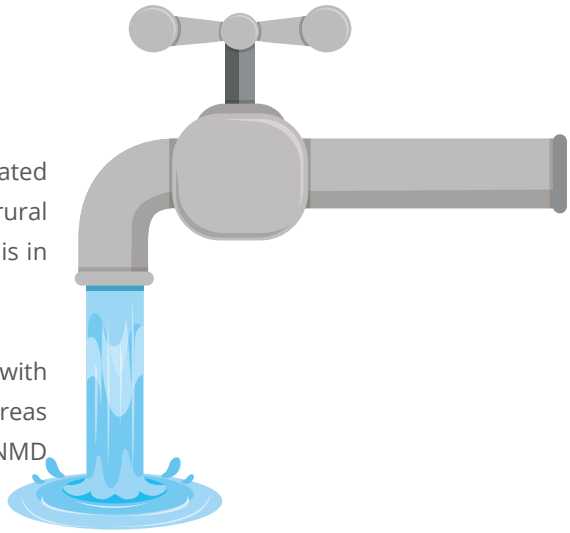
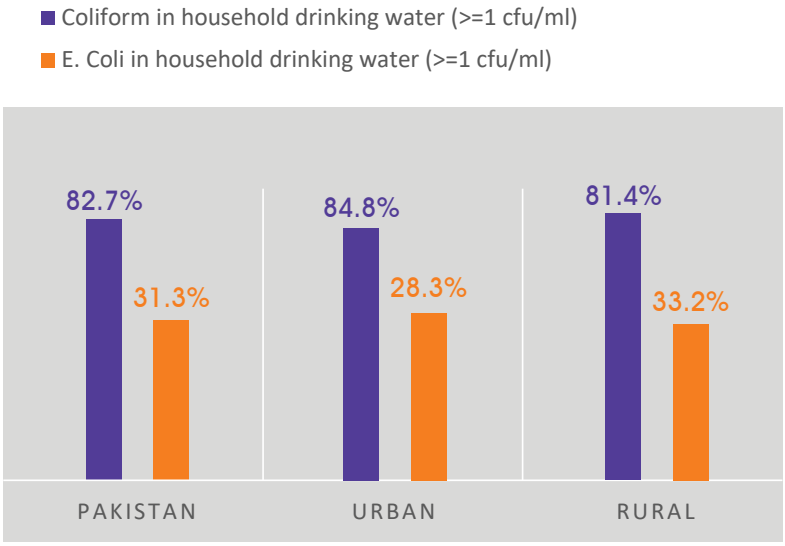
WATER, SANITATION AND HYGIENE (WASH)



Drinking water from 82.7% of households in Pakistan is contaminated with coliforms, with a slightly higher rate in urban (84.8%) than in rural areas (81.4%). The highest prevalence of coliform contamination is in ICT (92%) and the lowest in GB (12%).

About 31.3% of households in Pakistan drink water contaminated with E. Coli, with a slightly higher rate in rural (33.2%) than urban areas (28.3%). The highest prevalence of E. Coli contamination is in KP-NMD (78.3%) and the lowest in Punjab (30.4%).



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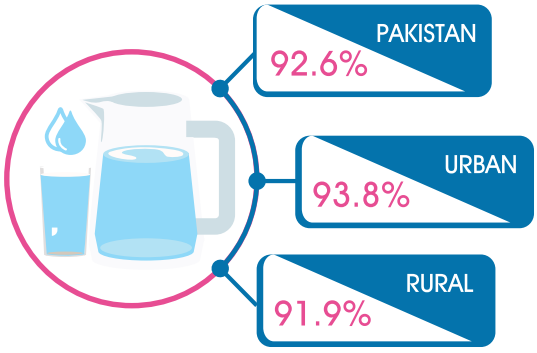
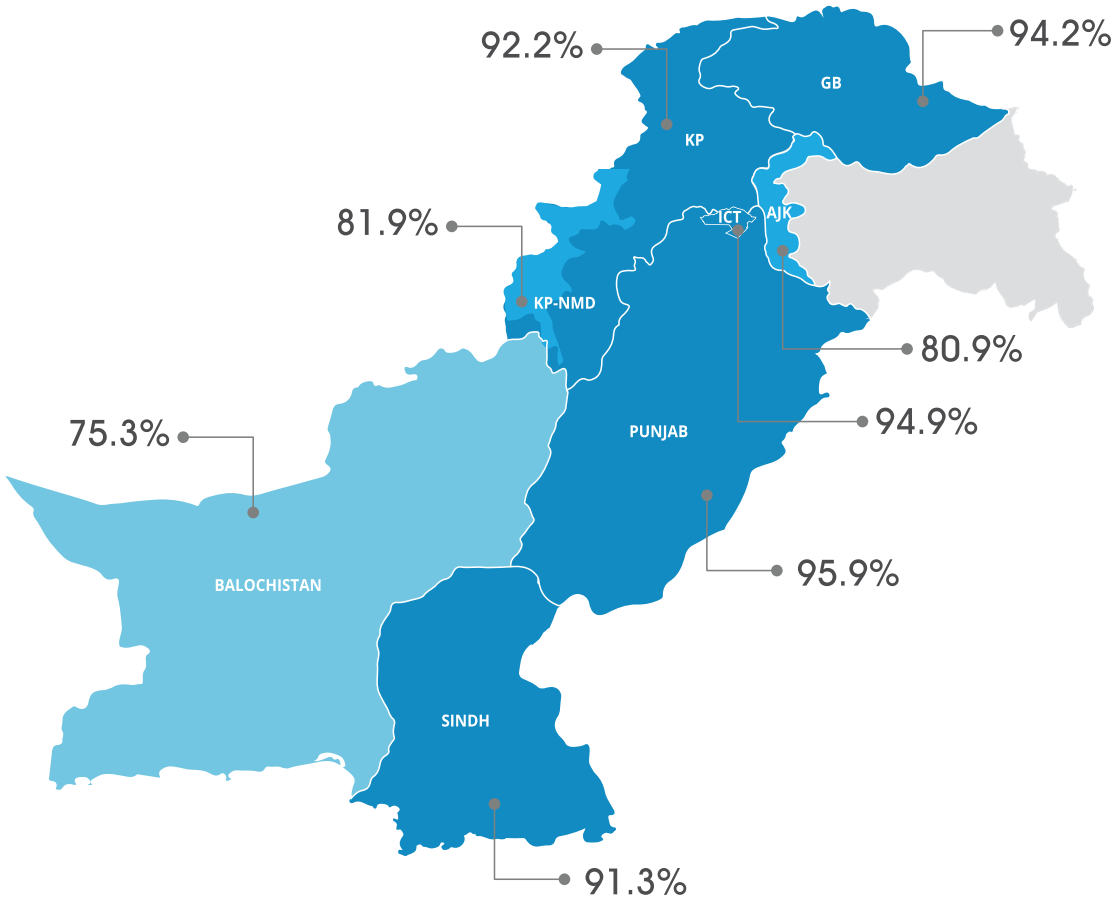
Household Using Improved Sources of Drinking Water



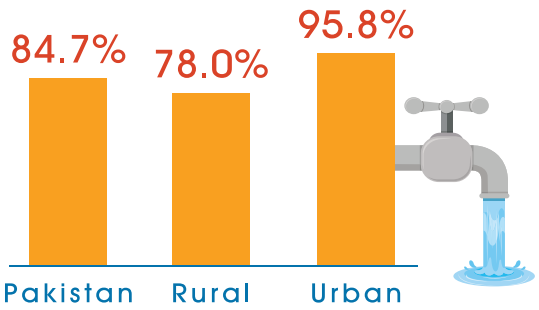
Over nine out of ten households (92.6%) in Pakistan have access to improved sources of drinking water. There is some disparity in urban and rural populations, and variations between provinces/regions. Balochistan has the lowest proportion of households with access to improved sources of drinking water (75.3%).

Percentage Using Improved Sources of Drinking Water by Province

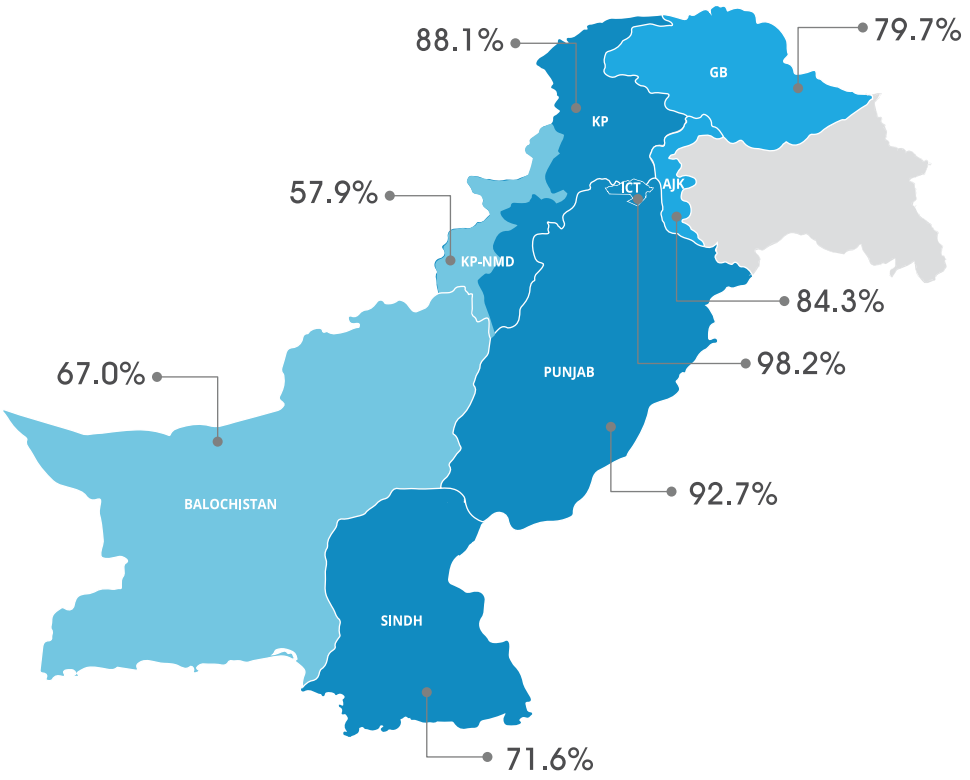


Household Using Improved Sanitation Facility

Urban dwellers have more access to improved sanitation facilities (95.8%) than their counterparts in rural areas (78%). Almost 85% of households in Pakistan have access to an improved sanitation facility.



Household Using Improved Sanitation Facility by Province/Region



ICT (98.2%) and Punjab (92.7%) have the highest proportion of households with access to an improved sanitation facility and are thus closest to eliminating open defecation. Most other provinces/regions are on track to eliminate open defecation with a slower rate of progress, while KP-NMD (57.9%) and Balochistan (67%) lag behind on this indicator.

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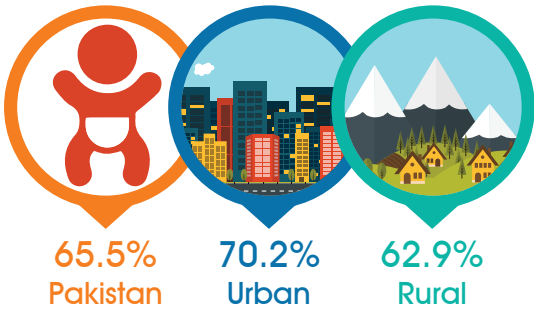
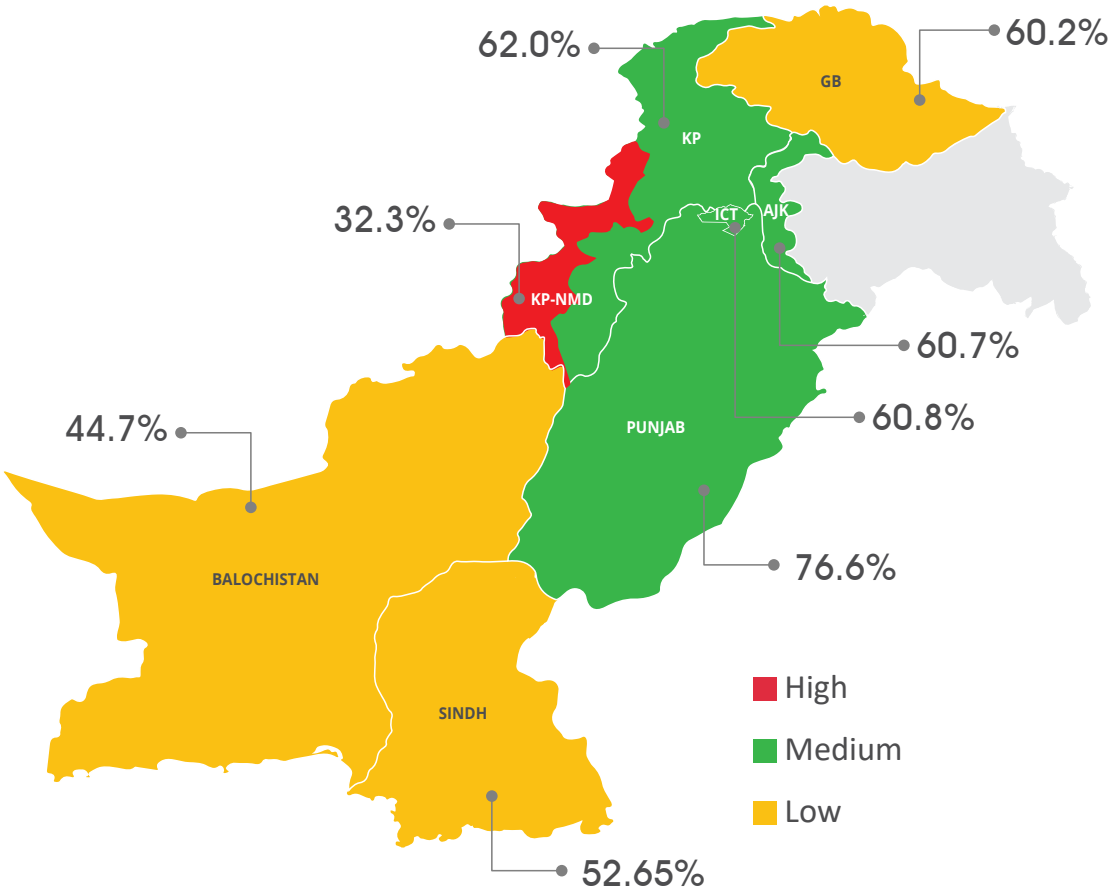
Children whose Last Stools were Disposed off Safely

Child faeces are more infectious and contaminating of the environment than adult faeces, but the perception of people in Pakistan is the opposite.

Nationally 65.5% of caretakers stated they had used a safe method of disposal, with a 7.3 percentage point gap between urban and rural practices.



Children whose Last Stools were Disposed of Safely by Province/Region

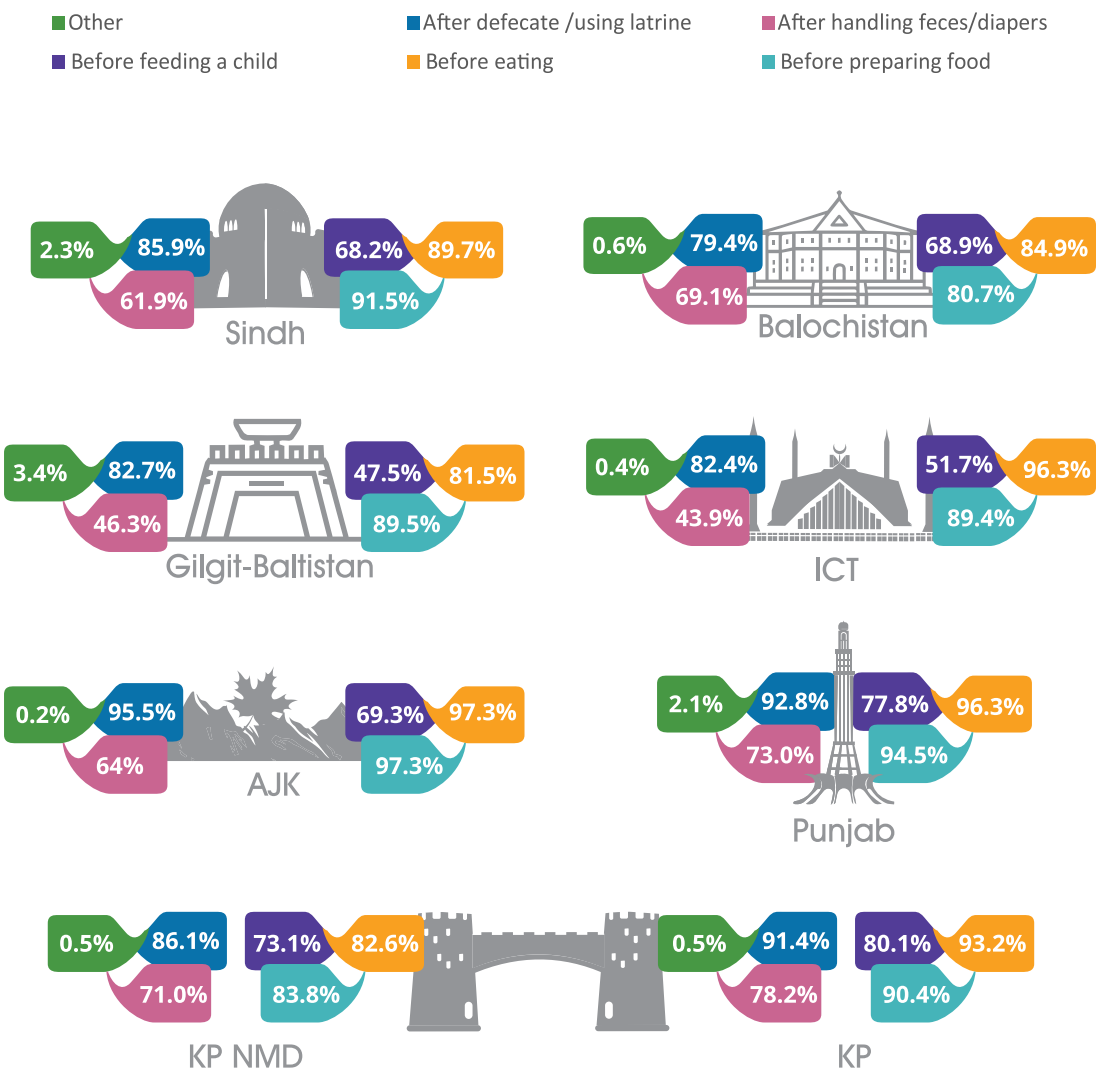


Safe disposal of child faeces is low in all provinces/regions with the highest rate in Punjab (41%). The lowest rate is to be found in KP-NMD (24.2%).

Handwashing at Five Critical Times in Pakistan by Locality (Urban/Rural)

An encouraging proportion of the population practices handwashing with soap and water at five critical times (over 96% depending on the practice). There is little disparity between urban and rural populations.

Handwashing at Five Critical Times by Province/Region

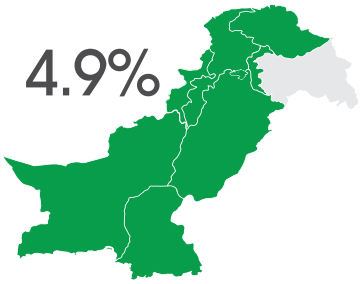


Handwashing with soap and water at five critical times, is widely practiced in all provinces/areas. AJK leads the trend for handwashing before preparing food or eating (97.4%) people. The widest disparity in practices relates to washing hands before feeding a child, with over 32 percentage points between the highest, KP-NMD and the lowest, GB, and after handling a child's faeces, with 34 percentage points between the highest, KP, and the lowest, ICT.

Punjab, KP and AJK are ahead of other provinces/regions in washing hands with soap. Handwashing after defecation is practiced by most Pakistanis, from 79.4% in Balochistan to 95.6% in AJK.

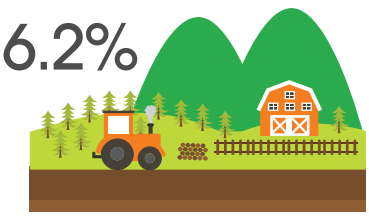
SOCIAL PROTECTION

Population Covered under Social Protection by Locality (Urban/Rural)



PAKISTAN

URBAN



RURAL

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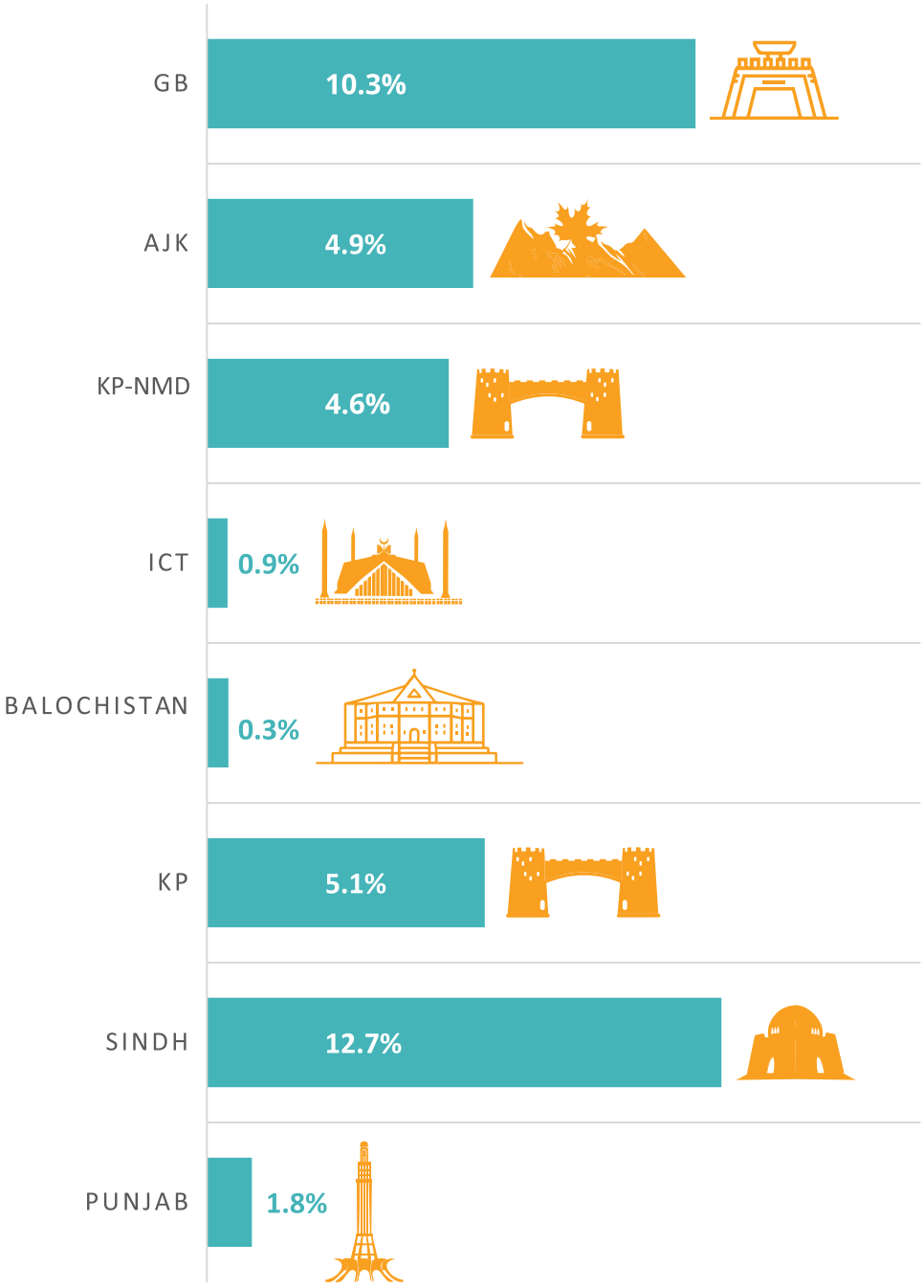
Population Covered under Social Protection by Province/Region



Way forward

Based on the findings of NNS 2018, we propose the following action points for consideration by policymakers and development agencies:

1. Pakistan needs to undertake a comprehensive nutrition review and development of a consensus-based nutrition strategy that encompasses all major determinants and manifestation of malnutrition. Notwithstanding the importance of stunting, we believe that high rates of wasting and concurrent wasting and stunting necessitate a much more holistic response that merely focusing on linear growth. We believe that a strategy to improve the nutritional status of women of reproductive age, coupled with a national effort to improve the health and nutritional status of adolescents, especially adolescent girls, is warranted.

2. Given the evident nutrition transition among adolescents and women of reproductive age in Pakistan with significant overweight and obesity, preventive interventions must be instituted with a focus on promotion on healthy diets and physical activity and regulation of the food environment. There are clear opportunities to do so with a focus on promotion of appropriate facilities in schools, especially for girls, public education and awareness and strong control on the marketing of unhealthy commercial foods and sweetened beverages.

3. The Prime Minister's Secretariat and its nutrition oversight process offer an excellent opportunity to develop a National Nutrition Task Force or Commission for oversight and reporting from a range of key government departments, academia, health care professionals and the private sector. We strongly recommend convening nutrition actors with the objective of launching a National Nutrition Strategy targeting SDG-2 and beyond. We strongly support making nutrition optimization and elimination of malnutrition a national development goal with improvement of human capital as its target. Engagement of the Ministry of Finance and Planning Commission are critical for ensuring adequate financing of nutrition initiatives at federal and provincial/ regional levels.

4. Improving the nutrition and health status of girls and women will necessitate investments outside the health sector. These include addressing the empowerment of girls through education, of women through enhanced targeting via the Benazir Income Support Programme and promotion of social change through mass media and advocacy. The government's recently launched Ehsaas programme offers a unique opportunity to link cash transfers to the most food-insecure and ultra-poor households to promote health and nutrition. This could lead to closer coordination between health services and social protection networks in districts for identification of at-risk households, and appropriate follow up.

5. Gaps identified in the LHW Programme offer an opportunity for provincial health and nutrition departments to work together. We strongly recommend revamping the LHW Programme to:

    a. Focus on improving the nutritional status of women and young girls though community outreach and home visitation services. In particular, home visits and periodic antenatal care sessions can be an opportunity for:

        i. Enhanced preventive nutrition and health education for women of reproductive age and pregnant women.

        ii. Identifying at-risk pregnancies for antenatal care in facilities and appropriate screening and supplementation strategies. Given widespread multiple micronutrient deficiencies in Pakistan, and the relative benefits of addressing them, we recommend replacing iron folate tablets with multiple micronutrient tablets overall and in undernourished women (those with BMI below 20), with an appropriate fortified food supplement.

        iii. In all instances, given low dietary diversity and varied cultural practices, LHWs should provide extensive education to promote good nutritional practices; use of fortified commodities such as wheat flour, iodized salt; appropriate promotion of excusive and early breastfeeding; and postnatal care of the mother and baby.

b. Inappropriate complementary feeding practices for infants and young children are major contributors to childhood malnutrition in Pakistan. Addressing this requires a complete revamping of the promotion and monitoring component of the LHW curriculum coupled with appropriate nutrition counselling in primary care clinics (Basic Health Units and mobile care clinics). Strategies for appropriate care and nutrition of low birthweight infants, especially those with illnesses, should be enhanced and emphasized at each contact point. The use of zinc for the treatment of diarrhoea should be further strengthened to increase coverage over 50%.

6. Given the role of the private sector and its influence on infant and young child feeding practices, a national strategy for private sector engagement in nutrition promotion should be developed. This can be incentivized along the lines of private sector engagement for family planning activities, with mechanisms in place to protect against conflicts of interest.

7. Children with wasting and concurrent stunting and wasting must be identified early and all existing contact points used for such screening and potential interventions. These include LHWs, vaccinators and primary care physicians in facilities who should receive an appropriate set of refreshers in preventive and promotive nutrition care of mothers and young infants. Given the steadily declining performance of the vitamin A supplementation programme of children aged 6–59 months of age, and persistent widespread vitamin A deficiency, this programme must be closely monitored for quality and coverage.

8. Pakistan needs a concerted community awareness programme to highlight the importance of appropriate maternal care during pregnancy and antenatal care as well as early childhood health and nutrition. The Nurturing Care Framework developed by WHO and UNICEF offers a unique opportunity for integrating infant nutrition, stimulation and engaging families in optimizing early child development.

9. Although data on adolescent nutrition suggest the urgent need for using all available outlets to reach adolescents, especially in school, the high rates of dropout of adolescent girls from formal education and low levels of access to technology (including mobile phones and computers) suggest the need for focusing on school health and nutrition preventive programmes. Such programmes are being considered in Punjab and Sindh and could be developed across Pakistan with a focus on improving adolescent diets, lifestyles and prevention of the double burden of malnutrition. Worrying trends in increasing overweight and obesity among adolescent girls and women of reproductive age since 2011 suggest that preventive communication strategies should be made part and parcel of the nutrition and non-communicable disease response strategy.

10. More focus should be placed on updated routine monitoring of nutrition data, eventually replacing surveys such as the NNS with good regular monitoring systems. Pakistan should make nutrition monitoring and accountability an essential part of its LHW management information system and District Health Information System process, and a part of real-time reporting processes. An annual report will go a long way in assessing progress at district level, and NNS 2018 data provide an ideal platform to do so.

11. We also emphasize the need for a national programme for developing public health nutrition professionals through the creation of national and provincial centres of excellence in nutrition. The current situation, with limited to no nutrition capacity, is unacceptable for a country with over 200 million people. A system of continued medical education and promotion of self-learning for nutrition managers through online courses and blended learning would also accelerate capacity enhancement.

ACRONYMS

AJK	Azad Jammu and Kashmir
GB	Gilgit-Baltistan
HH	Household
ICT	Islamabad Capital Territory
IYCF	Infant and young child feeding
KP	Khyber Pakhtunkhwa
KP-NMD	KP Newly Merged Districts
NNS	National Nutrition Survey
PSU	Primary sampling unit
WRA	Women of reproductive age

GOVERNMENT OF PAKISTAN
Ministry of National Health Services,
Regulations and Coordination
Nutrition Wing

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