PHILIPPINE NUTRITION

FACTS & FIGURES

FOOD AND NUTRITION RESEARCH INSTITUTE
Department of Science and Technology

ERRATA

1. The trends (increase/decrease) on the following pages should be in terms of percentage points and not in percent.

   p. 24, 1.7.1 Children (0-5 and 6-10 years old)
   - 2nd sentence – "… underweight children … higher by 1.9 percentage points in 1998 .. increase … is 1.2 percentage points"
   - 3rd sentence – "… stunting of children… higher by 1.7 percentage points.."

   p. 26, 1.7.2 Adolescents (11-19 years old)
   - 1st sentence – "thinness … increased by 4.0 percentage points and overweight by 0.5 percentage points …"
   - 2nd sentence – "… overweight … decreased by 1.4 percentage points; … increased by 2.5 percentage points."

   p. 28, 1.7.3 Adults (20 years old and over)
   - 1st sentence – "… CED decreased by 0.7 percentage points; … increased by 3.6 percentage points …"

   p. 30, 1.7.4 Pregnant Women
   - 1st sentence – "… at-risk women … decreased by 6.5 percentage points …"

   1.7.5 Lactating Women
   - 1st sentence – "…CED … increased by 2.5 percentage points; …. decreased by 2.2 percentage points."

2. p. vii (Table of Contents), Part I: 1.3, "… Trend …" should be "… Trends in Food Consumption …"
3. p. 2, "… Table 2…" should be "…Table 1, Mean One-day per Capita Food Consumption …"
4. The following abbreviation and words should be corrected:

   p. 75
   - 2nd sentence – "… y…" should be "… years …"

   p. 80, cont Table 45, under NCR – "… Valenzuel…" should be "… Valenzuela …"

   p. 100, Table 62, "… Hypertension …" should be "… Hypertension…"

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FOOD AND NUTRITION RESEARCH INSTITUTE
Department of Science and Technology
Taguig, Metro Manila, Philippines
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FOREWORD

It is the Philippine's vision, since the 1990s, to be newly-industrialized country (NIChood). Nutrition program planners later coined the term "a nutritionally improved country" to NIC. After all, proper nutrition is the foundation of good health that sustains labor productivity for the population's socio-economic development.

The Food and Nutrition Research Institute – Department of Science and Technology (FNRI-DOST) contributes to these efforts through its research and development programs. One of its most significant programs is the periodic re-appraisal of national, regional, and provincial nutrition conditions through a series of National Nutrition Surveys NNSs). The results of the latest of this series, the 5th NNS (1998) were presented in two separate symposia: on October 19, 1999 for the initial results at the Manila Midtown Hotel and the sequel on March 9, 2000 at the EDSA Shangri-La Hotel.

While the results of the 4th (1993) and the 5th (1998) NNSs presented in these earlier formats/venues have been and continue to be useful to most nutrition- and health-related institutions for program planning and implementation, as well as for instruction in the academe, these have yet to reach a critical mass of data users and local nutrition stakeholders to generate significant impact. The FNRI-DOST decided thus to develop a handy reference and compact version of the nutrition situationers, for easy reading and application. This Handbook of **Philippine Nutrition Facts and Figures** is based on the 1993 and 1998 NNSs. It is intended not only for nutrition and health professionals but also for the local planners, stakeholders, and the general public who wish to gain access to information on the Filipinos' latest documented nutritional situation.

This Handbook consists of facts and figures on dietary, anthropometric, biochemical, clinical measurements/indices, disaggregated at the national, regional and provincial levels. It also provides summary data analyses and relevant nutrition notes presented in easy-to-read tables, graphs and narratives.

We hope that this Handbook will reach a wide audience to inform, to provoke to action, and to contribute ultimately to the attainment of our vision of NIChood in this new millennium.

CORAZON VC. BARBA, Ph.D.
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Part IV: Clinical Facts and Figures

LIST OF ABBREVIATIONS

AP	As Purchased
ARMM	Autonomous Region of Muslim Mindanao
BMI	Body Mass Index
BP	Blood Pressure
c	Cholesterol
CAR	Cordillera Administrative Region
CED	Chronic Energy Deficiency
CVD	Cardiovascular Disease
EP	Edible Portion
FCS	Food Consumption Survey
FNRI	Food and Nutrition Research Institute
g	gram
Hb	Hemoglobin
HDL	High-Density Lipoprotein
IDA	Iron Deficiency Anemia
IDD	Iodine Deficiency Disorders
kcal	kilocalorie
kg	kilogram
LDL	Low-Density Lipoprotein
mg	milligram
mcg	microgram
NCHS	National Center for Health Statistics, USA
NCR	National Capital Region
NNS	National Nutrition Survey
NSO	National Statistics Office
P	Percentile
PEM	Protein Energy Malnutrition
PPS	Philippine Pediatric Society
RE	Retinol Equivalent
SD	Standard Deviation
UIE	Urinary Iodine Excretion
VAD	Vitamin A Deficiency
WC	Waist Circumference
WHR	Waist-Hip Ratio

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Part I. Dietary Facts and Figures

DIETARY FACTS AND FIGURES

What do Filipinos eat? Do they eat enough? Are Filipinos meeting the recommended energy and nutrient intakes?

The food consumption survey is one major component of the National Nutrition Survey (NNS) that the FNRI-DOST periodically undertakes every five years. Actual amounts of food consumed in the household for one day are collected by the food weighing technique. Energy and nutrient intakes from the food are assessed relative to their adequacy when compared against the Recommended Dietary Allowances (RDA) of the household members.

The dietary facts and figures in this Handbook are, for the most part, based on the 4th NNS conducted in 1993. Trend analysis was made on the data of previous NNSs: (1st) 1978, (2nd) 1982, and (3rd) 1987.

1. At the National Level

Food Consumption of Filipino households is characterized as follows:

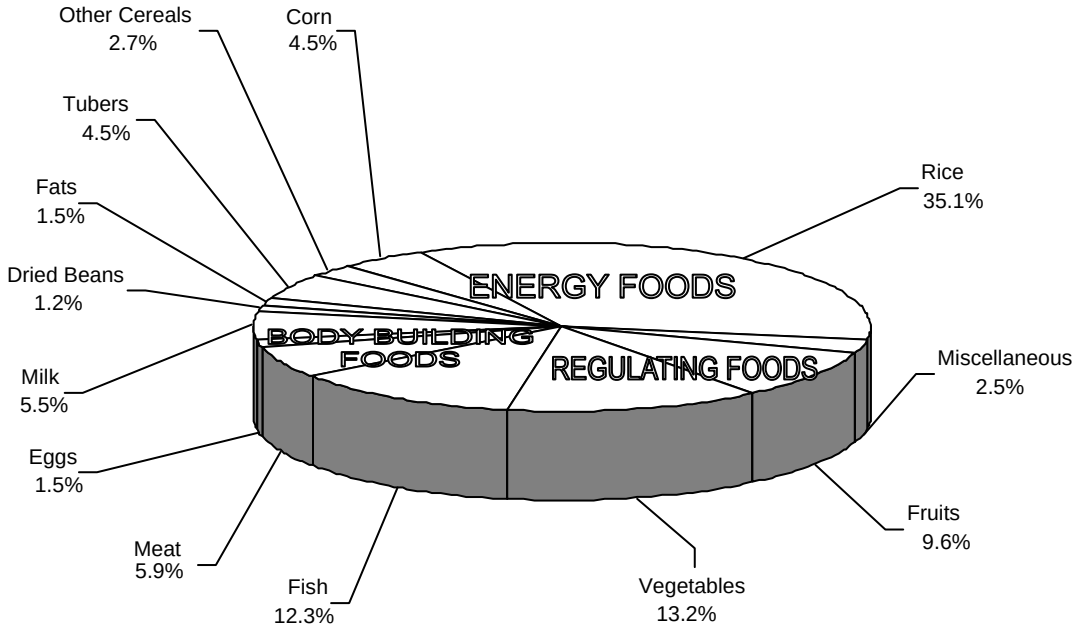
- Usual diet is *rice-fish-vegetable.*
- Intake of rice and products (282g) constitutes 1/3 of the total food consumed per capita per day (803g).
- Intake of fish and products is 99g per capita per day, while it is 48g for meat and poultry and their products.
- Intake of vegetables at 106g per capita per day is made up of green leafy and yellow vegetables (30g) and other vegetables (76g).
- Intake of fruits amounts to 77g per capita per day.
- Consumed in small amounts are milk and milk products (44g), starchy roots and tubers (17g), sugars (19g), fats and oils (12g) and dried beans, nuts and seeds (10g).

Table 2: Mean per Capita Food Consumption [a/]

Food Group/Sub Group	Consumption (Raw, "as purchased")		Percent of Total Food Intake*
	kg/yr	g/day	
All Foods	**293**	**803**	**100.1**
Cereals and Cereal Products	**124**	**340**	**42.3**
Rice and Products	103	282	35.1
Corn and Products	13	36	4.5
Other Cereals and Products	8	22	2.7
Starchy Roots and Tubers	**6**	**17**	**2.1**
Sugars and Syrups	**7**	**19**	**2.4**
Fats and Oils	**4**	**12**	**1.5**
Fish, Meat and Poultry	**54**	**147**	**18.3**
Fish and Products	36	99	12.3
Meat and Products	12	34	4.2
Poultry and Products	5	14	1.7
Eggs and Egg Products	**4**	**12**	**1.5**
Milk and Milk Products	**16**	**44**	**5.5**
Whole Milk	13	35	4.4
Milk Products	3	9	1.1
Dried Beans, Nuts, and Seeds	**4**	**10**	**1.2**
Vegetables	**39**	**106**	**13.2**
Green Leafy and Yellow Vegetables	11	30	3.7
Other Vegetables	28	76	9.5
Fruits	**28**	**77**	**9.6**
Vitamin C-Rich Fruits	8	21	2.6
Other Fruits	20	56	7.0
Miscellaneous	**7**	**19**	**2.5**
Beverages	3	9	1.1
Condiments and others	4	11	1.4

[a/] available in the kitchen, including inedible and edible wastage
*** Numbers may not add up to 100.0 due to rounding off**

Figure 1. Food Consumption Pattern: 1993



Total Food Consumed =803 g (raw, “as purchased”)

1.2 Energy and Nutrient Adequacy

- The average Filipino diet is generally short of recommended dietary allowances (RDAs).
- Among the nutrients, only protein meets the corresponding RDA (106.2%). Energy is 87.8% of RDA, while intakes of vitamins and minerals remain grossly inadequate (57.1%-88.1%).

Table 2: Mean One-Day per Capita Energy and Nutrient Intake and Percent Adequacy

Energy and Nutrient	Intake	Percent Adequacy
Energy (kcal)	1684	87.8
Protein (g)	49.9	106.2
Iron (mg)	10.1	64.7
Calcium (g)	0.39	67.2
Vitamin A (mcg RE)	391.9	88.1
Thiamin (mg)	0.67	68.4
Riboflavin (mg)	0.56	57.1
Niacin (mg)	16.1	88.0
Ascorbic Acid (mg)	46.7	73.2

1.3 Trends in Food Consumption: 1978, 1982, 1987, and 1993

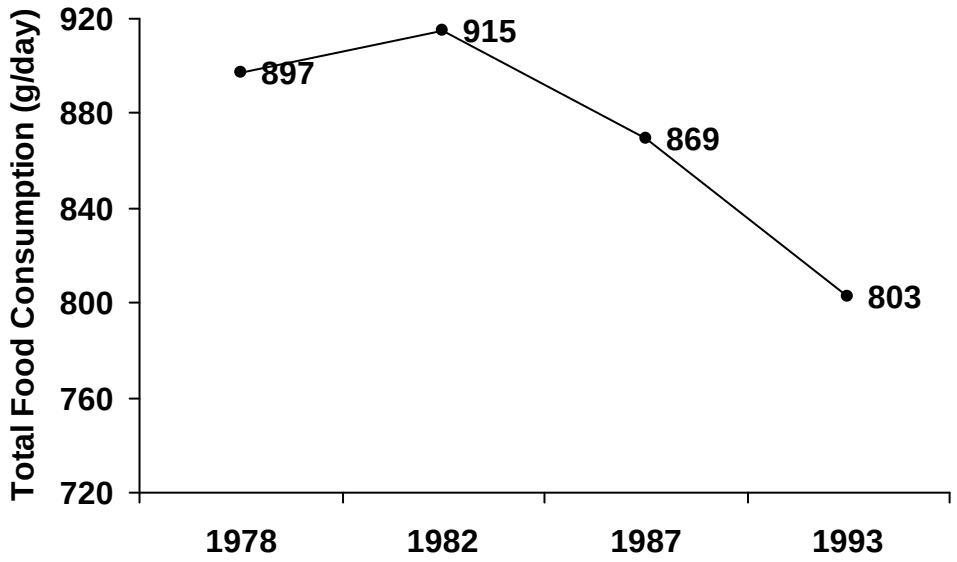
1.3.1 Food Consumption

- A general decrease in the consumption of various foods is observed.
- A continuous drop in the consumption of cereals and cereal products as well as of vegetables is also noted from 1978 to 1993.
- Most of the food groups show lower consumption levels in 1993 than in 1987.
- Four food items, namely corn, breads and other cereals, poultry, and eggs, show increases in consumption from 1987 to 1993.

Table 3: Comparison of Mean One-Day per Capita Food Consumption: 1978, 1982, 1987, and 1993

Food Group/ Subgroup	Consumption, g (Raw, "as purchased")			
	1978	1982	1987	1993
All Foods	**897**	**915**	**869**	**803**
Cereals and Cereal Products	**367**	**356**	**345**	**340**
Rice and Products	308	304	303	282
Corn and Products	38	34	24	36
Other Cereals and Products	21	18	18	22
Starchy Roots and Tubers	**37**	**42**	**22**	**17**
Sugars and Syrups	**19**	**22**	**24**	**19**
Fats and Oils	**13**	**14**	**14**	**12**
Fish, Meat and Poultry	**133**	**154**	**157**	**147**
Fish and Products	102	113	111	99
Meat and Products	23	32	37	34
Poultry and Products	27	10	9	14
Eggs and Egg Products	8	9	10	12
Milk and Milk Products	42	44	43	44
Dried Beans, Nuts and Seeds	8	10	10	10
Vegetables	145	130	111	106
Green Leafy and Yellow Vegetables	34	37	29	30
Other Vegetables	111	93	82	76
Fruits	**104**	**102**	**107**	**77**
Vitamin C-Rich Fruits	30	18	24	21
Other Fruits	74	84	83	56
Miscellaneous	**21**	**32**	**26**	**19**

Figure 2: Trend in Total Food Consumption: 1978-1993



1.3.2 Energy and Nutrient Adequacy

- As a consequence of the general downward trend in food consumption, intakes of energy and nutrients decrease, with the exception of protein and vitamin A.

- Energy, iron, calcium, and ascorbic acid intakes significantly decreased from 1987 to 1993.

- The decline of energy, iron and calcium intakes can be attributable to the continued decrease in rice consumption, along with the decreases in fish and meat consumption during this period.

- The reduction in ascorbic acid intake is an expected consequence of the decline in fruit and vegetable consumption.

- Riboflavin which remains to be the least provided in the Filipino diet is unchanged during the six-year period.

Table 4: Comparison of Mean One-Day per Capita Energy And Nutrient Intake: 1987 and 1993

Energy and Nutrient	Energy and Nutrient Intake	
	1987	1993
Energy (kcal)	1753	1684
Protein (g)	49.7	49.9
Iron (mg)	10.7	10.1
Calcium (g)	0.42	0.39
Vitamin A (mcg RE)	389.7	391.9
Thiamin (mg)	0.68	0.67
Riboflavin (mg)	0.56	0.56
Niacin (mg)	16.3	16.1
Ascorbic Acid (mg)	53.6	46.7

2. At the Regional Level

2.1 Food Consumption

- Among the regions in Luzon, the National Capital Region shows the least amount of rice consumed (252g per capita per day) but the largest in consumption of the most costly food items like bread and other cereal products, meat and products, poultry, milk, and vitamin C-rich fruits.

- Ilocos and Cagayan Regions are the biggest consumers of rice and products while Southern, Western and Northern Mindanao and Central Visayas Regions, of corn products.

- Ilocos, Cagayan, and CAR Regions record the largest consumption of vegetables.

- Visayas (except Western Visayas) and Mindanao (except ARMM) remain as corn-eating regions.

- All regions of Visayas and Mindanao (except Central Mindanao) have greater consumption of fish and products (more than 100g per capita per day) than the Luzon regions (except Bicol).

Table 5: Mean One-day per Capita Food Consumption, by Region [a/]

Food Group/ Subgroup	Philippines	Ilocos	Cagayan Valley	Central Luzon	Southern Tagalog	Bicol
Cereals & Cereal Products	**340**	**361**	**371**	**340**	**325**	**322**
Rice & Products	282	344	344	310	291	292
Corn & Products	36	2	7	6	2	8
Other Cereals & Products	22	15	20	24	32	23
Starchy Roots & Tubers	**17**	**8**	**19**	**12**	**12**	**28**
Sugars and Syrups	**19**	**18**	**16**	**22**	**24**	**17**
Fats and Oils	**12**	**10**	**10**	**15**	**15**	**16**
Vegetables	**106**	**172**	**174**	**120**	**107**	**100**
Green & Leafy Yellow Vegetables	30	40	38	19	23	27
Other Vegetables	76	133	137	102	84	73
Fruits	**77**	**68**	**51**	**94**	**118**	**78**
Vit. C-Rich Fruits	21	24	8	37	30	13
Other Fruits	56	43	43	57	88	64
Fish, Meat & Poultry	**147**	**140**	**107**	**156**	**144**	**133**
Fish & Products	99	84	66	78	87	104
Meat & Products	34	47	33	45	45	22
Poultry & Products	14	9	8	33	11	8
Eggs	**12**	**13**	**9**	**19**	**16**	**9**
Milk and Milk Products	**44**	**32**	**31**	**73**	**52**	**35**
Whole Milk	35	29	28	43	42	29
Milk Products	9	3	2	30	10	6
Dried Beans, Nuts & Seeds	**10**	**12**	**11**	**13**	**11**	**6**
Miscellaneous (Beverages, Condiments & Others)	**19**	**10**	**14**	**24**	**20**	**17**

a/ Expressed as raw, "as purchased", in g/day

cont… Table 5

Food Group/ Subgroup	Western Visayas	Central Visayas	Eastern Visayas	Western Mindanao	Northern Mindanao
Cereals & Cereal Products	**338**	**353**	**363**	**358**	**383**
Rice & Products	307	179	321	228	247
Corn & Products	19	157	22	118	121
Other Cereals & Products	12	17	20	12	16
Starchy Roots & Tubers	**5**	**15**	**31**	**15**	**13**
Sugars and Syrups	**15**	**11**	**15**	**13**	**18**
Fats & Oils	**10**	**8**	**9**	**11**	**11**
Vegetables	**78**	**61**	**59**	**118**	**112**
Green & Leafy Yellow Vegetables	35	30	17	49	39
Other Vegetables	43	32	42	69	72
Fruits	**66**	**41**	**62**	**74**	**70**
Vit. C-Rich Fruits	20	4	7	17	15
Other Fruits	46	37	55	58	55
Fish, Meat & Poultry	**142**	**165**	**150**	**161**	**145**
Fish & Products	114	139	127	119	112
Meat & Products	16	19	15	21	24
Poultry & Products	12	8	8	21	9
Eggs & Products	**8**	**8**	**5**	**11**	**11**
Milk and Milk Products	**34**	**27**	**21**	**22**	**24**
Whole Milk	31	27	20	21	21
Milk Products	3	n	n	1	3
Dried Beans, Nuts & Seeds	**7**	**10**	**3**	**10**	**10**
Miscellaneous (Beverages, Condiments & Others)	**21**	**14**	**20**	**17**	**20**

a/ Expressed as raw, "as purchased", in g/day

cont… Table 5

Food Group/ Subgroup	Southern Mindanao	Central Mindanao	CAR	CARAGA	ARMM	NCR
Cereals & Cereal Products	**371**	**366**	**356**	**371**	**357**	**293**
Rice & Products	232	299	330	330	331	252
Corn & Products	126	57	3	31	6	1
Other Cereals & Products	13	10	23	10	20	40
Starchy Roots & Tubers	**20**	**9**	**23**	**26**	**70**	**12**
Sugars and Syrups	**18**	**16**	**23**	**12**	**24**	**23**
Fats & Oils	**12**	**10**	**14**	**10**	**12**	**14**
Vegetables	**123**	**119**	**177**	**92**	**106**	**87**
Green & Leafy Yellow Vegetables	51	52	38	28	35	18
Other Vegetables	72	68	139	64	71	69
Fruits	**69**	**85**	**73**	**57**	**83**	**78**
Vit. C-Rich Fruits	14	8	16	2	19	34
Other Fruits	55	77	57	55	64	44
Fish, Meat & Poultry	**143**	**124**	**122**	**121**	**135**	**181**
Fish & Products	115	91	54	100	121	95
Meat & Products	20	27	54	15	6	63
Poultry & Products	8	6	14	6	7	23
Eggs & Products	**12**	**18**	**11**	**9**	**8**	**16**
Milk and Milk Products	**26**	**23**	**79**	**18**	**14**	**86**
Whole Milk	25	18	42	18	13	66
Milk Products	1	6	37	0	1	19
Dried Beans, Nuts & Seeds	**11**	**8**	**14**	**9**	**5**	**10**
Miscellaneous (Beverages, Condiments & Others)	**19**	**20**	**16**	**17**	**12**	**29**

a/ Expressed as raw, "as purchased", in g/day

2.2 Energy and Nutrient Adequacy

- Across all regions, intakes of energy and the nutrients, except protein, are short of the Recommended Dietary Allowances.

- Energy intakes in the regions range from 1587 kcal in Western Visayas to 1839 kcal in CAR. Five other regions have energy intakes below the mean of 1684 kcal, namely: Bicol, Central Visayas, NCR, Northern Mindanao and Southern Mindanao.

- The regions with the highest mean nutrient adequacy ratings are CAR, Ilocos, Southern Mindanao, NCR, and Central Luzon, while the lowest ratings are shown by ARMM, Bicol, Western Visayas, CARAGA, and Eastern Visayas.

Table 6: Mean One-Day Capita per Energy and Nutrient Intake and Percent Adequacy, by Region

Energy and Nutrient	Philippines	Ilocos	Cagayan Valley	Central Luzon	Southern Tagalog	Bicol
Energy						
Intake, kcal	1684	1732	1741	1758	1709	1618
Percent Adequacy	*87.8*	*90.0*	*90.3*	*90.9*	*89.5*	*86.3*
Protein						
Intake, g	49.9	49.4	47.4	51.0	48.9	46.0
Percent Adequacy	*106.2*	*103.3*	*99.8*	*106.2*	*104.5*	*102.0*
Iron						
Intake, mg	10.1	10.1	10.3	9.5	10.3	8.5
Percent Adequacy	*64.7*	*65.6*	*66.0*	*60.1*	*66.0*	*56.7*
Calcium						
Intake, g	0.39	0.39	0.45	0.38	0.37	0.42
Percent Adequacy	*67.2*	*66.1*	*76.3*	*65.5*	*63.8*	*71.2*
Vitamin A (mcg RE)						
Intake, mg	391.9	416	338.6	419.4	370.0	328.9
Percent Adequacy	*88.1*	*93.2*	*75.4*	*93.4*	*83.1*	*74.9*
Thiamin						
Intake, mg	0.67	0.74	0.71	0.74	0.73	0.62
Percent Adequacy	*68.4*	*75.5*	*72.4*	*75.5*	*74.5*	*64.6*
Riboflavin						
Intake, mg	0.56	0.58	0.55	0.62	0.58	0.50
Percent Adequacy	*57.1*	*59.2*	*55.6*	*62.6*	*59.2*	*52.1*
Niacin						
Intake, mg	16.1	16.7	15.9	16.3	16.4	15.1
Percent Adequacy	*88.0*	*90.8*	*86.4*	*88.6*	*90.1*	*84.4*
Ascorbic Acid						
Intake, mg	46.7	61.4	56.8	53.4	46.0	46.1
Percent Adequacy	*73.2*	*94.8*	*87.9*	*82.2*	*72.4*	*74.4*

cont… Table 6

Energy and Nutrient	Western Visayas	Central Visayas	Eastern Visayas	Western Mindanao	Northern Mindanao
Energy					
Intake, kcal	1587	1640	1696	1699	1754
Percent Adequacy	*83.4*	*86.1*	*88.2*	*87.4*	*90.3*
Protein					
Intake, g	47.2	54.2	49.4	53.0	53.0
Percent Adequacy	*101.5*	*117.8*	*104.7*	*110.9*	*111.2*
Iron					
Intake, mg	9.0	11.8	9.8	9.4	10.7
Percent Adequacy	*58.8*	*77.1*	*63.6*	*59.1*	*68.2*
Calcium					
Intake, g	0.40	0.37	0.34	0.39	0.38
Percent Adequacy	*67.8*	*62.7*	*57.6*	*66.1*	*65.9*
Vitamin A (mcg RE)					
Intake, mg	320.4	393.7	280.6	409.2	325.1
Percent Adequacy	*72.4*	*89.4*	*63.1*	*91.9*	*72.5*
Thiamin					
Intake, mg	0.62	0.64	0.59	0.60	0.62
Percent Adequacy	*63.9*	*65.3*	*60.2*	*60.6*	*62.8*
Riboflavin					
Intake, mg	0.47	0.52	0.47	0.52	0.52
Percent Adequacy	*48.4*	*53.1*	*47.5*	*52.0*	*52.4*
Niacin					
Intake, mg	15.8	15.6	16.8	15.4	16.0
Percent Adequacy	*86.8*	*85.7*	*91.3*	*82.8*	*86.1*
Ascorbic Acid					
Intake, mg	39.7	33.2	30.5	46.9	47.4
Percent Adequacy	*62.7*	*53.2*	*47.6*	*72.7*	*72.8*

cont… Table 6

Energy and Nutrient	Southern Mindanao	Central Mindanao	CAR	CARAGA	ARMM	NCR
Energy						
Intake, kcal	1734	1688	1839	1689	1759	1651
Percent Adequacy	*88.5*	*88.4*	*94.6*	*89.4*	*92.5*	*85.7*
Protein						
Intake, g	53.9	49.6	50.8	47.8	46.9	52.2
Percent Adequacy	*111.9*	*107.1*	*105.6*	*103.9*	*100.0*	*110.6*
Iron						
Intake, mg	12.1	10.9	10.7	10.2	10.0	10.2
Percent Adequacy	*79.1*	*70.3*	*68.6*	*67.5*	*63.7*	*63.0*
Calcium						
Intake, g	0.42	0.39	0.47	0.36	0.36	0.41
Percent Adequacy	*72.0*	*66.1*	*81.0*	*62.1*	*62.1*	*70.7*
Vitamin A (mcg RE)						
Intake, mg	425.3	384.4	445.9	277.2	273.1	582.7
Percent Adequacy	*94.1*	*86.8*	*99.6*	*62.7*	*61.3*	*131.6*
Thiamin						
Intake, mg	0.63	0.65	0.89	0.61	0.59	0.74
Percent Adequacy	*62.4*	*66.3*	*89.9*	*63.5*	*60.8*	*75.5*
Riboflavin						
Intake, mg	0.55	0.56	0.66	0.46	0.45	0.70
Percent Adequacy	*54.9*	*57.1*	*66.7*	*47.4*	*45.9*	*70.7*
Niacin						
Intake, mg	16.6	16.0	17.7	16.2	17.1	16.8
Percent Adequacy	*88.2*	*87.9*	*95.2*	*90.0*	*94.0*	*91.3*
Ascorbic Acid						
Intake, mg	59.0	48.4	62.0	35.7	57.7	41.9
Percent Adequacy	*91.7*	*76.6*	*95.2*	*56.8*	*90.2*	*65.7*

Part II. Anthropometric Facts and Figures

ANTHROPOMETRIC FACTS AND FIGURES

A. WEIGHT AND HEIGHT

How tall or short are the Filipinos? How much do they weigh? Are their weights/heights normal? How many underweight, obese, stunted, or thin?

The 1998 5th National Nutrition Survey of the FNRI-DOST provides answers to the above questions. Specifically, the anthropometric assessment of children, adolescents, adults, pregnant and lactating women determined prevalence of protein-energy malnutrition and the changes in nutritional status of these population groups over time. The 5th NNS covered all provinces (except Basilan) in the 16 regions of the country, Marawi City, Cotabato City, 10 highly urbanized cities, and 10 cluster areas in the National Capital Region (NCR).

In anthropometry, the subjects are weighed and their standing height or recumbent length for children younger than 2 years old are taken. Their height and weight data are compared with USA's National Center for Health Statistics (NCHS)/World Health Organization (WHO) Standards, using weight-for-age, height-for-age and weight-for-height indices.

Table 7: NCHS/WHO Assessment Criteria on Weight and Height for Children, 0-10 Years Old

Index/Classification	NCHS Cut-off Point
♦ **Weight-for-Age**	
Underweight	< -2SD
Normal	-2SD to < +2SD
Overweight	≥ +2SD
♦ **Height-for-Age**	
Stunted	< -2SD
Normal	-2SD to < +2SD
Above Average/Tall	≥ +2SD
♦ **Weight-for-Height**	
Wasted	< -2SD
Normal	-2SD to < +2SD
Overweight	≥ +2SD
NEC (Not Elsewhere Classified) – those whose heights were beyond the limits of the weight-for-height tables	

- In addition, body mass index (BMI) is used as indicator of thinness and overweight. For 11-19 year-old children, adults and lactating women, the BMI is used to decline different degrees of underweight and overweight while the Weight-for-Height Table by Months of Pregnancy developed by FNRI is used to categorize nutritional status among pregnant women.

Table 8: Cut-off Points in Classifying Adolescents Based on Must's Table

Classification	Cut-Off Point
Underweight	<P5
Mild Underweight	P5 to <P15
Normal	P15 to <P85
Overweight	≥P85

Table 9: Cut-off Points in Classifying Adults and Lactating Women Based on Body Mass Index (BMI)

Classification	BMI Level
Severe chronic energy deficiency or 3rd CED	< 16.00
Moderate chronic energy deficiency or 2nd CED	16.00 to < 17.00
Mild chronic energy deficiency or 1st CED	17.00 to < 18.50
Low Normal	18.50 to < 20.00
Normal	20.00 to < 25.00
1st Obese	25.00 to < 30.00
2nd Obese	30.00 to < 40.00
3rd Obese	≥ 40.00

Table 10: Cut-off Points in Classifying Pregnant Women Based on Weight-for-Height

Classification	% of Reference Standard
Nutritionally-at-risk	< 90%
Not nutritionally-at-risk	≥ 90%

1. At the National Level

1.1 Preschool-age Children (0-5 years old)

Using the NCHS/WHO Standards, results showed that:

- 68 in every 100 children have normal weight-for-age, 32 in every 100 are underweight and 4 in every 1000 are overweight.
- 66 in every 100 children have normal height-for-age, 34 in every 100 children are stunted and 4 in every 1000 are tall for their age.
- 93 in every 100 children have normal weight-for-height, 6 in every 100 are wasted and 9 in every 1000 are overweight for their height.
- Thus, an estimated 3.36 M children are underweight, 3.57 M are stunted and 630,660 are wasted based on the 1990 National Statistics Office (NSO) population of children.

Table 11: Percentage Distribution of 0-5 Year-Old Children, by NCHS/ WHO Weight-for-Age, Height-for-Age and Weight-for-Height Classification

Classification	% Distribution
Weight-for-Age:	
Underweight	32.0
Normal	67.6
Overweight	0.4
Height-for-Age:	
Stunted	34.0
Normal	65.7
Tall	0.4
Weight-for-Height:	
Wasted	6.0
Normal	93.0
Overweight for height	0.9
Not elsewhere classified (NEC)	0.1

Table 12: Percentage Distribution of Children, by Single Age Group from 0-5 Years, by NCHS/ WHO Weight-for-Age, Height-for-Age, and Weight-for-Height Classification

Age (years)	% Distribution by Weight-for-Age		
	Underweight	**Normal**	**Overweight**
0	12.9	86.1	1.1
1	38.6	61.1	0.4
2	37.2	62.5	0.4
3	34.1	65.5	0.4
4	34.6	65.2	0.2
5	32.6	67.1	0.3
All	***32.0***	***67.6***	***0.4***
	% Distribution by Weight-for-Age		
	Stunted	**Normal**	**Tall**
0	8.7	90.2	1.1
1	33.0	66.6	0.4
2	31.5	68.0	0.5
3	40.0	59.8	0.2
4	43.6	56.4	0.0
5	42.7	57.3	0.1
All	***34.0***	***65.7***	***0.4***
	% Distribution by Weight-for-Age		
	Stunted	**Normal**	**Tall**
0	5.7	91.6	2.1
1	14.9	84.1	0.9
2	5.8	93.9	0.3
3	3.5	95.7	0.8
4	3.5	95.7	0.8
5	3.5	95.7	0.7
All	***6.0***	***93.0***	***0.9***

- 39 in every 100 children, 1 year old, 37 in the 2 year-old, and 34 in the 3 year-old are underweight.

- 1 in every 100 children, 1 year old, is overweight.

- 44 in every 100 children, 4 years old, 43 in the 5 years olds, and 40 in the 3 years old are stunted.

- 2 in every 100 children, less than 1 year old, are overweight for their height.

1.2 School-age Children (6-10 years old)

- 70 in every 100 children, 6-10 years old, have normal weight-for-age; 30 in every 100 are underweight; and the prevalence of overweight is negligible.

- 59 in every 100 children have normal height-for-age, and 41 in every 100 are stunted.

Table 13: Percentage Distribution of 6-10 Year-Old Children, by NCHS/ WHO Weight-for-Age and Height-for-Age Classification

Classification	% Distribution
Weight-for-Age	
Underweight	30.2
Normal	69.8
Overweight	negligible
Height-for-Age	
Stunted	40.8
Normal	59.2
Tall	negligible

- 34 in every 100 children, 6 years old, 33 in the 9 years old, and 32 in the 10 years old, are underweight.
- Prevalence of overweight is negligible in the 6-9 year-old children.
- 2 in every 1000 children, 10 years old, are overweight.
- 46 in every 100 children, 10 years old, 45 in the 9 years old, and 41 in the 6 and 8 years old, are stunted.

Table 14: Percentage Distribution of Children, by Single Age Group from 6-10 Years, by NCHS/ WHO Weight-for-Age, Height-for-Age Classification

Age (years)	% Distribution by Weight-for-Age		
	Underweight	**Normal**	**Overweight**
6	33.8	66.1	negligible
7	26.3	73.7	negligible
8	26.7	73.3	0.0
9	33.4	66.6	0.0
10	31.9	67.9	0.2
All	***30.2***	***69.8***	***negligible***
	% Distribution by Weight-for-Age		
	Stunted	**Normal**	**Tall**
6	40.8	59.2	0.0
7	33.5	66.5	0.0
8	40.6	59.4	negligible
9	45.2	54.8	0.0
10	45.9	54.1	0.0
All	***40.8***	***59.2***	***negligible***

1.3 Adolescents (11-19 years old)

- Mean height of the female adolescents, 11-12 years, of 138.1 cm, is higher than the mean height of the male adolescents of 134.9 cm. However, at 13-19 years, mean height of the male adolescents surpasses that of their female counterparts.

- Mean weight of the female adolescents, 11-12 years, is also higher by 2.3 kg than that of their male counterparts. But at 13-19 years, the mean weight of the male adolescents is slightly higher by 1.4 kg than that of the female adolescents.

Table 15: Mean Height and Weight of Adolescents, 11-19 Years Old, by Age and by Sex

Age Group (years)	Male		Female		All	
	Mean Height (cm)	Mean Weight (kg)	Mean Height (cm)	Mean Weight (kg)	Mean Height (cm)	Mean Weight (kg)
11-12	134.9	28.9	138.1	31.2	136.4	30.0
13-19	155.3	44.4	149.1	43.0	152.2	43.7

- The male adolescents are more at-risk to thinness than their female counterparts (24.1% vs. 16.6%). The female adolescents are more at-risk to overweight and obesity (4.7%) than their male counterparts (1.2%).

Table 16: Percentage Distribution of Adolescents, 11-19 Years Old, by BMI Classification, by Age and by Sex

Age Group (years) and Sex	Under-Weight <P5	Mild P5 to <P15	Normal			Over-weight P85 to <P95	Obese ≥P95
			P15 to <P50	P50 to <P85	Total P15 to <P85		
Male							
11-12	34.0	23.3	31.5	9.4	40.9	1.6	0.2
13-19	19.3	24.3	1.5	13.9	55.4	0.9	0.1
All	***23.0***	***24.1***	***39.0***	***12.8***	***51.8***	***1.1***	***0.1***
Female							
11-12	27.2	19.3	31.6	18.6	50.2	2.4	0.8
13-19	12.9	15.7	35.7	30.5	66.2	4.7	0.5
All	***16.4***	***16.6***	***34.7***	***27.6***	***62.3***	***4.1***	***0.6***
Both Sexes							
11-12	30.6	21.4	31.6	13.9	45.5	2.0	0.5
13-19	16.2	20.1	38.6	22.1	60.7	2.8	0.3
All	***19.8***	***20.4***	***36.9***	***20.1***	***57.0***	***2.6***	***0.3***

1.4 Adults (20-60 years old and over)

- The mean height and mean weight generally decrease in both sexes as they grow older.

Table 17: Mean Height and Weight of Adults, 20 Years Old and Over, by Age and by Sex

Age Group (years) and Sex	Male		Female		All	
	Mean Height (cm)	Mean Weight (kg)	Mean Height (cm)	Mean Weight (kg)	Mean Height (cm)	Mean Weight (kg)
20 – 39	163.3	58.9	151.4	51.1	157.6	55.2
40 – 59	161.7	58.7	150.5	52.1	156.2	55.4
60 and over	158.9	52.6	147.8	47.0	153.0	49.7

- About half or 50% of the adults have normal BMI levels. More male than female adults and more young (20-29 years) than old (40-59 years) adults have normal BMI levels.

- The prevalence of chronic energy deficiency (CED) among male adults (BMI of less than 18.5) is 11.1%. The CED prevalence is higher in females than in males. The severity of CED prevalence increases with age. Thus, the older group, 60 years and over, exhibits the highest prevalence rate at 25.4%.

- Prevalence of obesity (BMI≥30 or 2^{nd} and 3^{rd} obese) is 3.3%. female adults have higher obesity prevalence rate than the male adults. The 40-59 year-old adults are the most at-risk to being obese.

Table 18: Percentage Distribution of Adults, 20 Years Old and Over, By Body Mass Index (BMI), by Age and by Sex

Age Group (years)/ Sex	3rd CED <16.0	2nd CED 16.0-<17.0	1st CED 17.0-<18.5	Total	Low Normal 18.5-<20.0	Normal 20.0 – <25.0	1st Obese 25.0-<30.0	2nd Obese 30.0 – <40.0	3rd Obese ≥40.0	All ≥30.0
Male										
20-39	0.5	1.7	6.5	8.7	18.4	56.2	15.1	1.5	0.0	1.5
40-59	1.4	1.4	7.9	10.7	17.8	50.9	17.1	3.5	0.1	3.6
60 & over	3.0	6.4	15.1	24.5	22.6	43.5	8.2	1.2	0.0	1.2
All	***1.0***	***2.2***	***7.9***	***11.1***	***18.7***	***53.2***	***14.9***	***2.1***	***neg***	***2.1***
Female										
20-39	0.9	2.6	10.4	13.9	17.8	47.6	16.7	3.8	0.2	4.0
40-59	2.9	3.1	7.3	13.3	11.2	45.5	24.5	5.4	neg	5.4
60 & over	8.8	5.1	12.3	26.2	15.0	39.5	15.4	3.9	neg	3.9
All	***2.6***	***3.1***	***9.7***	***15.4***	***15.4***	***45.9***	***18.9***	***4.3***	***0.1***	***4.4***
Both Sexes										
20-39	0.7	2.1	8.4	11.2	18.1	52.1	15.8	2.6	0.1	2.7
40-59	2.1	2.3	7.6	12.0	14.3	48.3	20.8	4.4	0.1	4.5
60 & over	6.1	5.7	13.6	25.4	18.6	41.4	12.0	2.6	neg	2.6
All	***1.8***	***2.6***	***8.8***	***13.2***	***17.1***	***49.6***	***16.9***	***3.2***	***0.1***	***3.3***

neg = negligible (less than 0.05)

1.5 Pregnant Women

- 85 in every 100 pregnant women are normal; 15 in every 100 are nutritionally-at-risk.
- The teenage pregnant women (younger than 20 years old) are more at-risk than their older counterparts (20 years and over)

Table 19: Percentage Distribution of Pregnant Women, by Weight-for-Height Classification, by Age

Age Group (years)	% Distribution	
	< 90%	≥ 90%
Less than 20	18.4	81.6
20 and over	14.3	85.7
All	***14.7***	***85.3***

1.6 Lactating Women

- About 55 in every 100 of the lactating women are normal (20-<30.0 BMI). More of the younger than older lactating women have normal BMI levels.

- CED is prevalent among lactating women (BMI<18.5), 13 in every 100; the prevalence rate for obesity (BMI > 30.0) is 2 in every 100.

- The older lactating women, 20 years old and over, are more at-risk to both CED and overweight than the younger lactating women; for every 1 obese teenage lactating woman, there are 3 obese lactating women.

Table 20: Percentage Distribution of Lactating Women, by BMI Classification and by Age

Age Group (years)/ Sex	3rd CED <16.0	2nd CED 16.0-<17.0	1st CED 17.0-<18.5	Total	Low Normal 18.5-<20.0	Normal 20.0 – <25.0	1st Obese 25.0-<30.0	2nd Obese 30.0 – <40.0	3rd Obese ≥40.0
Less than 20	0.3	2.7	8.4	11.4	24.0	59.6	4.4	0.5	-
20 and over	0.8	2.9	9.7	13.4	18.2	54.2	11.7	2.4	neg
All	***0.8***	***2.9***	***9.7***	***13.4***	***18.5***	***54.5***	***11.3***	***2.3***	***neg***

neg = negligible (less than 0.05)

1.7 Trends in the Prevalence of Underweight, Stunting and Wasting, by Age, by Sex and by Physiological State: 1993, 1996, and 1998

1.7.1 Children, (0-5 and 6-10 years old)

- The prevalence of underweight for the groups of children, 0-5 years and 6-10 years, increased within the two-year period, 1996 and 1998.

- The proportion of underweight children, 6-10 years, is higher by 1.9% in 1998 than that in 1996, while the increase in the 0-5 year old children is 1.2%.

- The stunting prevalence in the 0-5 year-old children did not change much, from 34.5% in 1996 to 34.0% in 1998. But at 6-10 years, stunting of children is higher by 1.7% in 1998 than that of 1996.

Table 21: Comparison in the Prevalence of Underweight, Stunting, and Wasting among 0-5 and 6-10 Year-Old Children

Age Group (years) and Nutritional Status	%Prevalence	
	1996	1998
0-5 Years Old		
A. Weight-for-Age		
Underweight	30.8	32.0
Normal	68.7	67.6
Overweight	0.5	0.4
B. Height-for-Age		
Stunted	34.5	34.0
Normal	65.0	65.7
Tall	0.5	0.4
C. Weight-for-Height		
Wasted	5.2	6.0
Normal	93.6	93.0
Overweight-for-Height	1.2	0.9
Not Elsewhere Classified (NEC)	0.1	0.1
6-10 Years Old		
A. Weight-for-Age		
Underweight	28.3	30.2
Normal	71.4	69.8
Overweight	0.4	negligible
B. Height-for-Age		
Stunted	39.1	40.8
Normal	60.8	59.2
Tall	0.1	negligible

1.7.2 Adolescents (11-19 years old)

- Prevalence of thinness increased by 4.0% and overweight by 0.5% for both male and female adolescents from 1993 to 1998.

- Over a period of 5 years, the prevalence of overweight among male adolescents decreased by 1.4% and among female adolescents, it increased by 2.5%.

Figure 3a: Comparison in the Prevalence of Underweight and Overweight among Adolescents, Both Sexes 11-19 Years Old

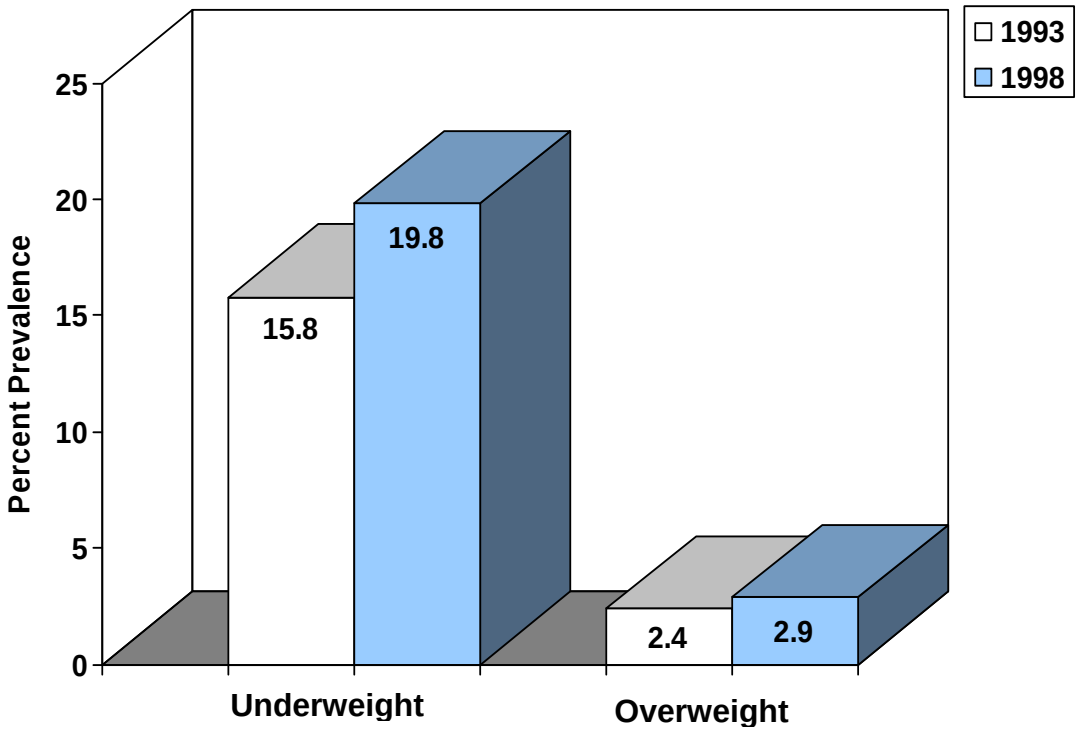


Figure 3a: Comparison in the Prevalence of Underweight and Overweight among Male Adolescents, 11-19 Years Old

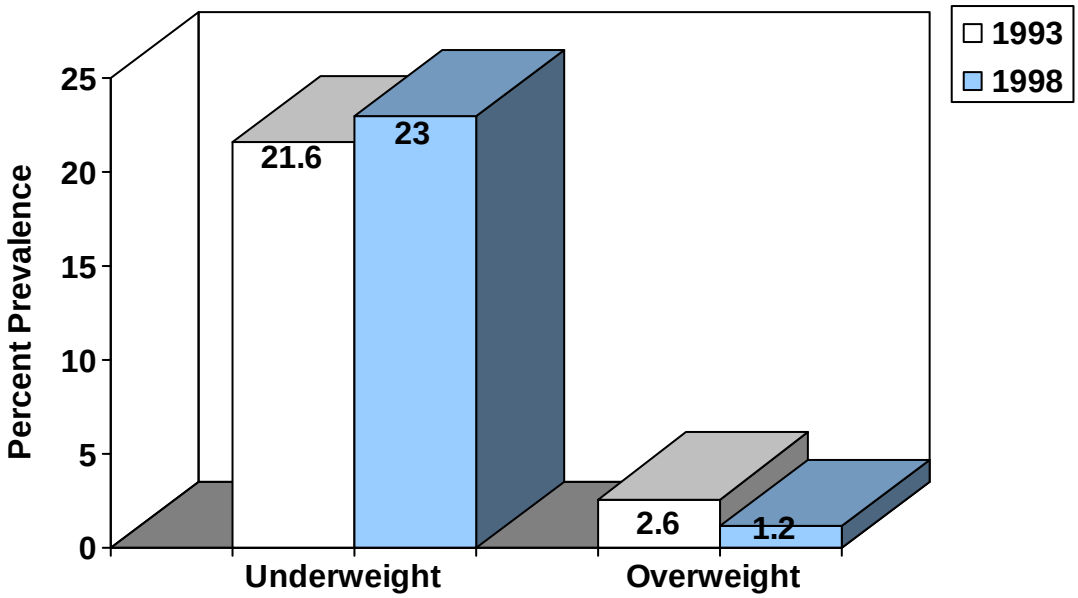
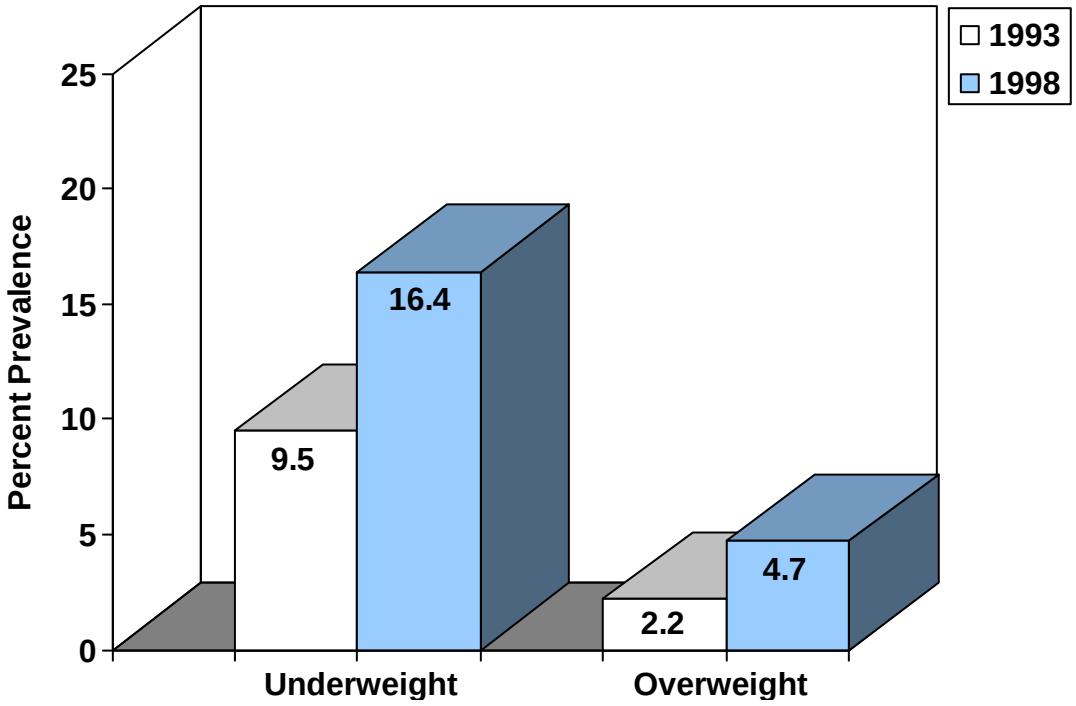


Figure 3c: Comparison in the Prevalence of Underweight, and Overweight among Female Adolescents, 11-19 Years Old



1.7.3 Adults (20 years old and over)

- From 1993 to 1998, the prevalence of CED decreased by 0.7%. However, the prevalence of overweight and obesity among adults increased by 3.6%, attributable to the increased in prevalence more among the females (4.7%) than the male adults (2.6%).

Figure 4a: Comparison in the Prevalence of Chronic Energy Deficiency (CED) and Overweight among Adults, Both Sexes, 20 Years Old and Over

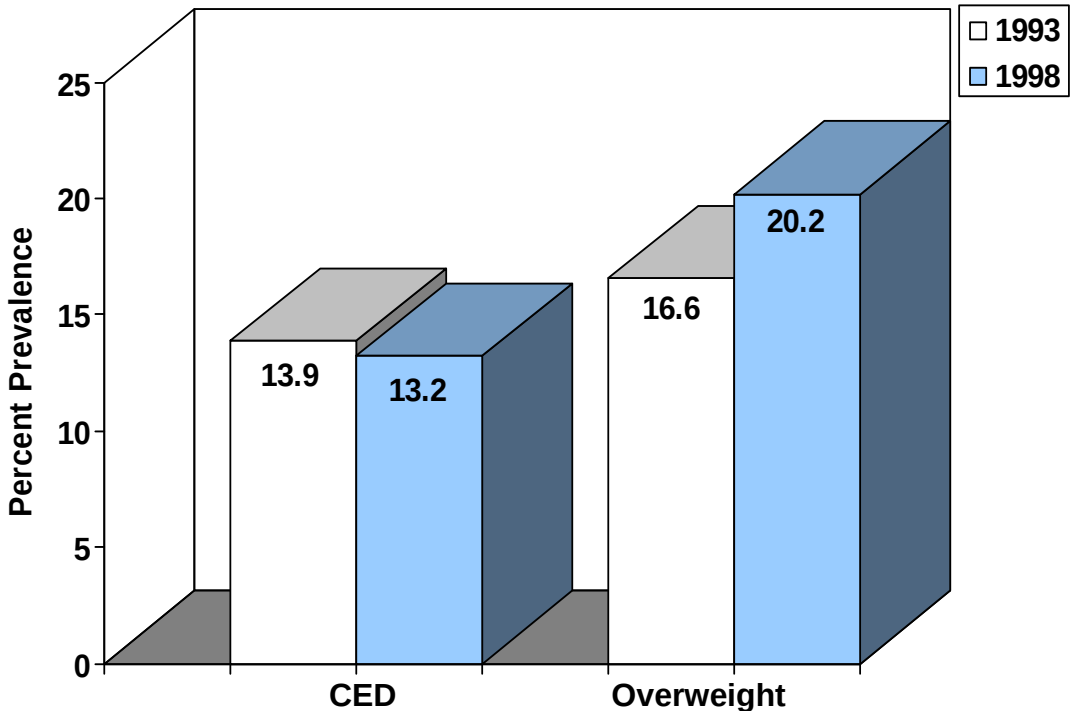


Figure 4b: Comparison in the Prevalence of Chronic Energy Deficiency (CED) and Overweight among Male Adults, 20 Years and Over

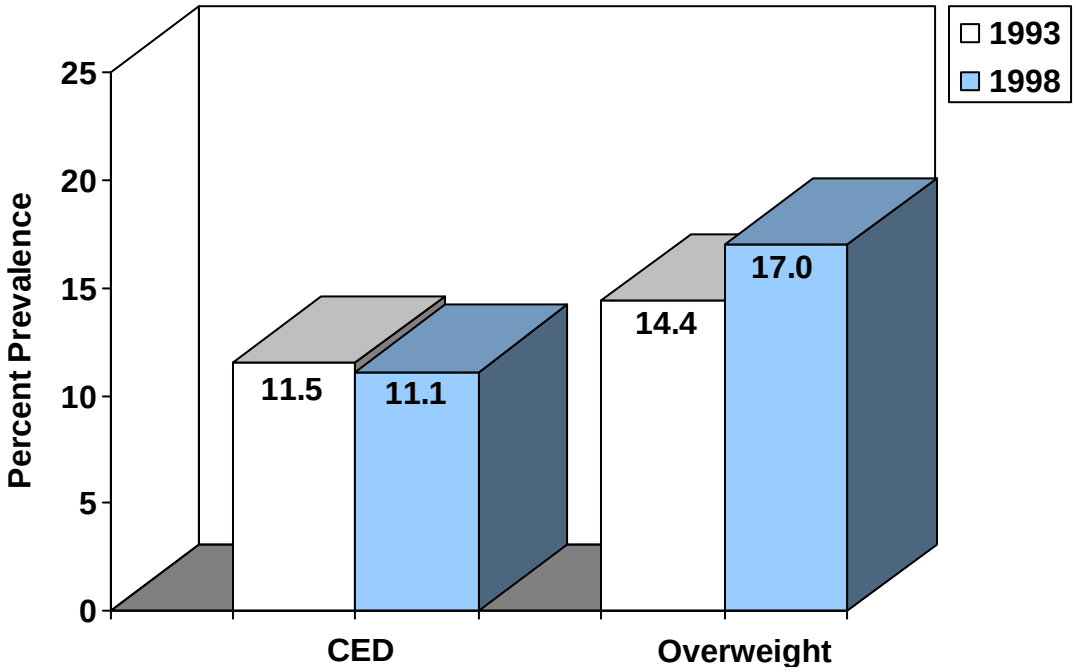
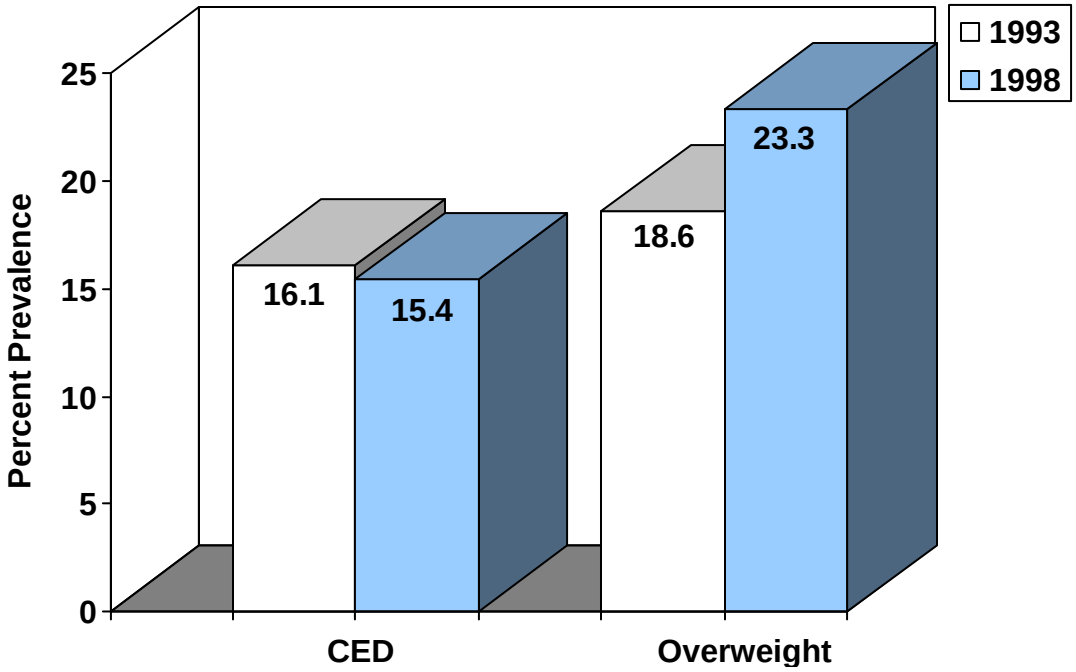


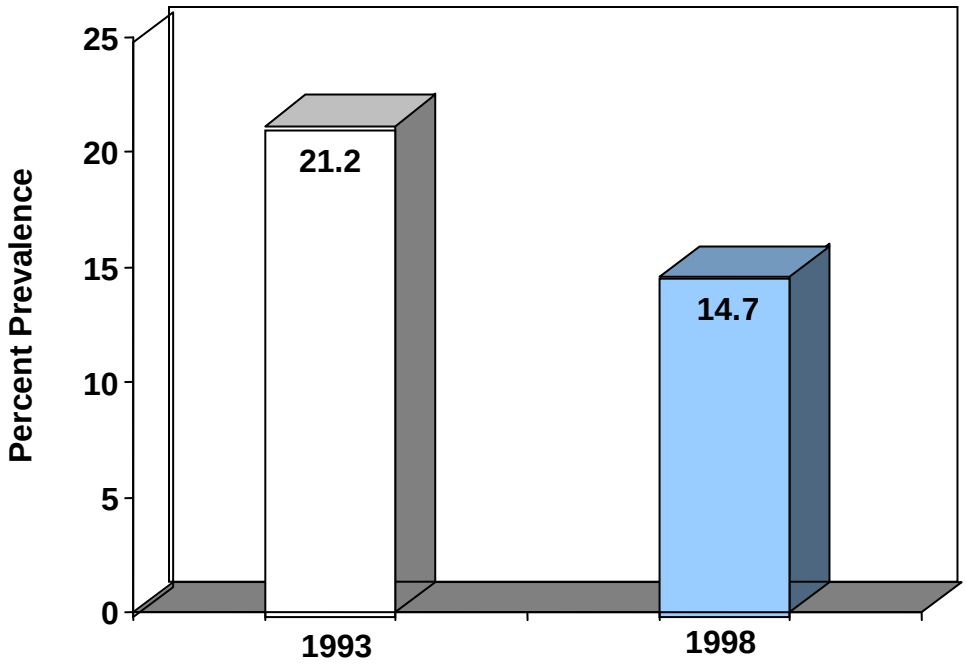
Figure 4c: Comparison in the Prevalence of Chronic Energy Deficiency (CED) and Overweight among Female Adults, 20 Years and Over



1.7.4 Pregnant Women

- The proportion of at-risk pregnant women substantially decreased by 6.5% from 1993 to 1998.

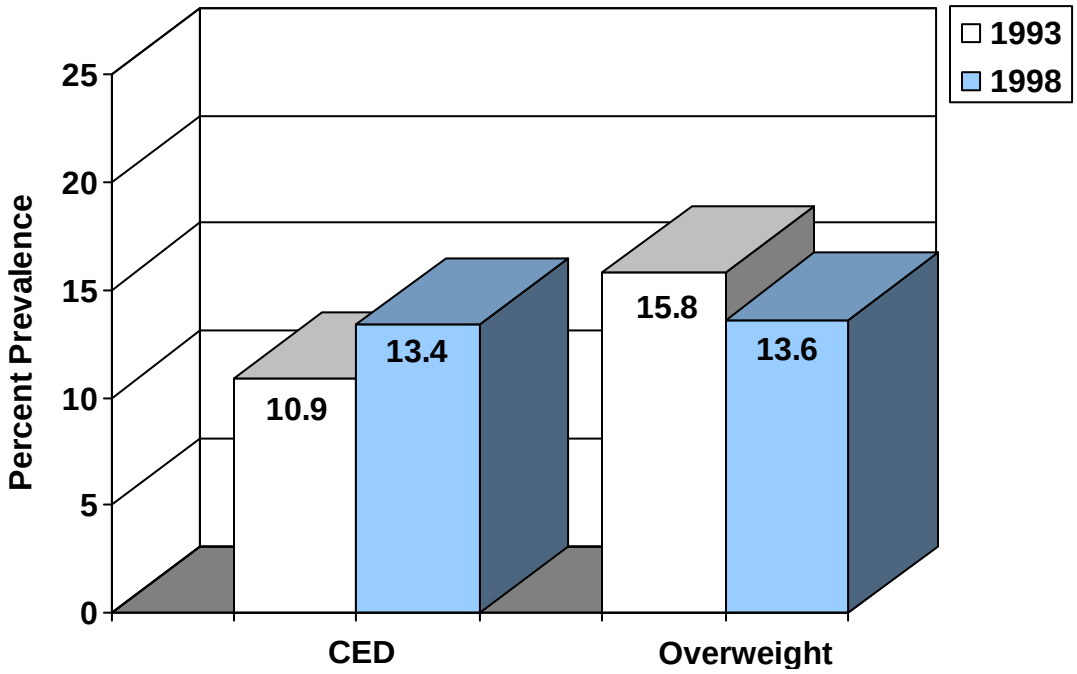
Figure 5: Comparison in the Prevalence of Malnutrition among Pregnant Women, by Weight-for-Height



1.7.5 Lactating Women

- From 1993 to 1998, the prevalence of chronic energy deficiency (CED) among lactating women increased by 2.5%. However, overweight prevalence decreased by 2.2%.

Figure 6: Comparison in the Prevalence of Chronic Energy Deficiency (CED) and Overweight among Lactating Women



2. At the Regional Level

2.1 Preschool-age Children, (0-5 years old)

2.1.1 Weight-for-Age Classification

- Based on the NCHS/WHO Weight-for-Age classification, Western Visayas (Region VI) has the highest prevalence of underweight children, with nearly 40 in every 100 children being underweight for their age. Eastern Visayas has 38 underweight children in every 100, Bicol 37, Ilocos 36, Western Mindanao, CARAGA, and Central Visayas, 34 each.

- In ARMM, 1 in every 100 children is overweight, 8 in every 1000 in Ilocos, 7 in every 1000 each in Central Luzon and NCR, 6 in every 1000 in Southern Tagalog.

Table 22: Percentage Distribution of 0-5 Year-Old Children, by NCHS/ WHO Weight-for-Age Classification, and by Region*

Region	Underweight	Normal	Overweight
Philippines	***32.0***	***67.6***	***0.4***
I. Ilocos Region	36.2	63.0	0.8
II. Cagayan Valley	32.3	67.2	0.5
III. Central Luzon	26.7	72.5	0.7
IV. Southern Tagalog	26.3	73.1	0.6
V. Bicol	36.5	63.4	0.1
VI. Western Visayas	39.6	60.3	0.1
VII. Central Visayas	33.8	65.7	0.5
VIII. Eastern Visayas	37.8	61.9	0.3
IX. Western Mindanao	34.4	65.4	0.2
X. Northern Mindanao	29.8	70.0	0.2
XI. Southern Mindanao	32.9	66.9	0.2
XII. Central Mindanao	32.4	67.4	0.2
XIII. CARAGA	34.1	65.5	0.4
NCR	26.5	72.9	0.7
CAR	26.7	73.0	0.3
ARMM	29.1	69.8	1.0

* Numbers may not add up to 100.0 due to rounding off.

2.1.2 Height-for-Age Classification

- 42 in every 100 children in CARAGA and Eastern Visayas, 41 in every 100 each in CAR and Southern Mindanao, 40 in every 100 each in Central Visayas and Western Mindanao are stunted for their age.

- 76 in every 100 children in Central Luzon, 74 in NCR, 73 in Ilocos are normal in height for their age.

- ARMM tops the list of regions with children who are tall for their age, more than 2 in every 100 children. Except for Central Mindanao with 8 children being tall for every 1000, the number of tall children ranges from 1 to 5 in every 1000 children for the rest of the regions.

Table 23: Percentage Distribution of 0-5 Year-Old Children, by NCHS/WHO Height-for-Age Classification, and by Region*

Region	Underweight	Normal	Overweight
Philippines	***34.0***	***65.7***	***0.4***
I. Ilocos Region	26.7	73.3	0.0
II. Cagayan Valley	32.2	67.4	0.3
III. Central Luzon	23.3	76.2	0.5
IV. Southern Tagalog	27.7	72.0	0.4
V. Bicol	36.6	63.3	0.2
VI. Western Visayas	37.1	62.5	0.4
VII. Central Visayas	40.2	59.6	0.1
VIII. Eastern Visayas	41.7	58.2	0.1
IX. Western Mindanao	40.0	59.5	0.5
X. Northern Mindanao	38.8	61.0	0.2
XI. Southern Mindanao	40.5	59.3	0.1
XII. Central Mindanao	39.1	60.1	0.8
XIII. CARAGA	42.0	57.9	0.1
NCR	25.7	73.8	0.5
CAR	41.0	58.7	0.3
ARMM	35.8	61.9	0.4

*Numbers may not add up to 100.0 due to rounding off.

2.1.3 Weight-for-Height Classification

- Western Visayas has the highest prevalence of wasted children, 10 in every 100 children. Western Mindanao, ARMM, Ilocos, and Cagayan Valley each has 8 wasted children in every 100.

- ARMM has the highest prevalence of overweight children for their height with 2 being overweight in every 100, followed by NCR, Ilocos, and Central Luzon.

- 96 in every 100 children in Central Visayas have normal weight for their height, followed by CAR, Bicol, Northern Mindanao, Southern Tagalog.

Table 24: Percentage Distribution of 0-5 Year-Old Children, by NCHS/ WHO Weight-for-Height Classification, and by Region*

Region	Wasted	Normal	Overweight for their Height	NEC
Philippines	***6.0***	***93.0***	***0.9***	***0.1***
I. Ilocos Region	7.8	90.7	1.5	0.0
II. Cagayan Valley	7.7	91.6	0.7	0.0
III. Central Luzon	5.9	92.5	1.5	0.2
IV. Southern Tagalog	4.8	94.5	0.7	0.0
V. Bicol	4.5	94.8	0.4	0.2
VI. Western Visayas	9.9	89.5	0.5	0.1
VII. Central Visayas	3.7	95.7	0.6	0.0
VIII. Eastern Visayas	5.4	93.6	0.8	0.2
IX. Western Mindanao	7.9	91.4	0.6	0.1
X. Northern Mindanao	4.4	94.6	0.9	0.1
XI. Southern Mindanao	5.3	94.0	0.7	0.1
XII. Central Mindanao	5.9	92.8	1.2	0.1
XIII. CARAGA	5.4	93.4	1.1	0.1
NCR	6.2	92.1	1.5	0.1
CAR	3.3	95.3	1.3	0.0
ARMM	7.9	90.3	1.7	0.1

***Numbers may not add up to 100.0 due to rounding off.**
NEC – Not Elsewhere Classified for children whose heights are beyond the limits of the Weight-for-Height tables.

3. At the Provincial/City Level

3.1 Preschool-age Children (0-5 years old)

3.1.1 Weight-for-Age Classification

- Southern Leyte of Eastern Visayas is the province that is most at-risk to underweight, with 5 in every 10 preschool-age children being afflicted by the condition. The prevalence rate here is higher than the Philippine average of 32.0% and the Eastern Visayas average of 37.8%.

- Less than half of Southern Leyte children have normal weight while 5 in every 1000 children are overweight for their age.

- Prevalence of underweight among children is also high in Kalinga (46.9%), Antique (46.8%), Masbate (42.8%), and Negros Occidental (40.8%).

- 3 in every 100 children in Pasay City are overweight, followed by 2 each in every 100 in Kalookan City, Lanao del Sur, La Union and Tarlac. A number of provinces seems to have no overweight children, e.g. Ilocos Norte, Isabela, Quezon, Rizal, among others.

Table 25: Percentage Distribution of 0-5 Year-Old Children, by NCHS/ WHO Weight-for-Age Classification, and by Region/Province/City*

Region/Province/City	Underweight	Normal	Overweight
Philippines	***32.0***	***67.6***	***0.4***
I. Ilocos	***36.2***	***63.0***	***0.8***
Ilocos Norte	29.9	70.1	0.0
Ilocos Sur	26.3	73.5	0.2
La Union	38.0	60.1	1.9
Pangasinan	39.3	59.9	0.8
II. Cagayan Valley	***32.3***	***67.2***	***0.5***
Batanes	16.9	82.2	0.9
Cagayan	37.5	61.5	1.0
Isabela	29.4	70.6	0.0
Nueva Vizcaya	24.6	74.8	0.6
Quirino	32.2	67.6	0.2
III. Central Luzon	***26.7***	***72.5***	***0.7***
Bataan	25.6	73.7	0.7
Bulacan	21.8	77.8	0.4
Nueva Ecija	26.9	72.2	0.9
Pampanga	25.1	74.4	0.5
Tarlac	39.5	58.6	1.9
Zambales	33.3	66.6	0.1
IV. Southern Tagalog	***26.3***	***73.1***	***0.6***
Aurora	39.4	60.0	0.6
Batangas	23.0	76.3	0.7
Cavite	14.7	84.3	0.9
Laguna	23.8	74.9	1.3
Marinduque	35.5	64.2	0.3
Occidental Mindoro	35.1	64.7	0.2
Oriental Mindoro	28.0	72.0	0.1
Palawan	34.3	64.8	0.9
Quezon	33.4	66.6	0.0
Rizal	34.7	65.3	0.0
Romblon	34.2	65.4	0.3

* Numbers may not add up to 100.0 due to rounding off.

cont… Table 25

Region/Province/City	Underweight	Normal	Overweight
V. Bicol	***36.5***	***63.4***	***0.1***
Albay	35.2	64.6	0.2
Camarines Norte	37.5	62.5	0.0
Camarines Sur	32.7	67.3	0.0
Catanduanes	35.9	63.7	0.4
Masbate	42.8	57.2	0.0
Sorsogon	38.9	61.1	0.0
VI. Western Visayas	***39.6***	***60.3***	***0.1***
Aklan	35.2	64.8	0.0
Antique	46.8	53.2	0.0
Capiz	36.6	63.4	0.0
Guimaras	38.0	62.0	0.0
Iloilo	39.3	60.6	0.1
Negros Occidental	40.8	59.1	0.1
VII. Central Visayas	***33.8***	***65.7***	***0.5***
Bohol	31.9	67.7	0.3
Cebu	33.7	65.7	0.7
Negros Oriental	36.1	63.5	0.4
Siquijor	25.4	73.2	1.4
VIII. Eastern Visayas	***37.8***	***61.9***	***0.3***
Biliran	38.2	61.8	0.0
Eastern Samar	27.5	72.5	0.0
Leyte	35.9	63.5	0.6
Northern Samar	37.7	61.9	0.4
Southern Leyte	52.3	47.2	0.5
Western Samar	39.8	60.2	0.0

* Numbers may not add up to 100.0 due to rounding off.

cont… Table 25

Region/Province/City	Underweight	Normal	Overweight
IX. Western Mindanao	***34.4***	***65.4***	***0.2***
Zamboanga del Norte	34.1	65.7	0.2
Zamboanga del Sur	35.0	64.9	0.1
X. Northern Mindanao	***29.8***	***70.0***	***0.2***
Bukidnon	30.3	69.7	0.0
Camiguin	27.1	72.5	0.4
Misamis Occidental	27.5	72.3	0.1
Misamis Oriental	29.7	69.7	0.6
XI. Southern Mindanao	***32.9***	***66.9***	***0.2***
Compostela Valley	31.8	68.1	0.0
Davao del Norte	35.2	64.6	0.1
Davao del Sur	34.0	65.8	0.2
Davao Oriental	30.1	69.9	0.0
Sarangani	31.8	67.8	0.4
South Cotabato	37.6	61.9	0.5
Sultan Kudarat	35.3	64.7	0.0
XII. Central Mindanao	***32.4***	***67.4***	***0.2***
Cotabato City	34.9	64.4	0.6
Marawi City	32.1	67.5	0.4
Lanao del Norte	26.9	73.1	0.0
North Cotabato	36.5	63.3	0.3
XIII. CARAGA	***34.1***	***65.5***	***0.4***
Agusan del Norte	32.0	67.2	0.8
Agusan del Sur	27.5	71.8	0.6
Surigao del Norte	40.8	59.2	0.0
Surigao del Sur	34.1	65.7	0.2

* Numbers may not add up to 100.0 due to rounding off.

cont… Table 25

Region/Province/City	Underweight	Normal	Overweight
NCR	***26.5***	***72.9***	***0.7***
Manila	26.3	73.2	0.4
Quezon City	26.3	73.4	0.3
Pasay City	19.8	77.8	2.5
Kalookan City	22.1	76.1	1.9
Makati City	25.6	73.6	0.8
Mandaluyong/San Juan	29.5	69.9	06
Marikina/Pasig	24.4	75.6	0.0
Tagig/Muntilupa/Pateros	26.1	72.3	1.6
Las Piñas/Parañaque	34.6	64.7	0.6
Malabon/Navotas/Valenzuela	31.8	68.1	0.0
CAR	***26.7***	***73.0***	***0.3***
Abra	34.8	65.2	0.0
Apayao	30.3	69.2	0.5
Benguet	11.6	88.0	0.4
Ifugao	27.7	72.1	0.2
Kalinga	46.9	52.4	0.7
Mountain Province	18.8	81.2	0.0
ARMM	***29.1***	***69.8***	***1.0***
Lanao del Sur	21.4	76.7	1.9
Maguindanao	32.6	67.2	0.2
Sulu	32.8	65.6	1.6
Tawi-tawi	32.7	67.3	0.0
Highly Urbanized Cities (HUC)			
Iloilo City	34.9	65.1	0.0
Bacolod City	38.7	61.1	0.2
Cebu City	34.5	65.3	0.2
Mandawe City	36.5	63.2	0.3
Toledo City	34.8	64.4	0.9
Zamboanga City	33.3	66.2	0.6
Cagayan de Oro City	32.5	67.5	0.0
Davao City	27.6	72.4	0.0
Iligan City	21.8	78.2	0.0
Baguio City	18.7	81.1	0.2

* Numbers may not add up to 100.0 due to rounding off.

3.1.2 Height-for-Age Classification

- The prevalence of stunting in Kalinga of CAR is alarmingly high with 6 in every 10 preschool-age children being stunted. Mountain Province and Ifugao, each have 5 stunted children in every 10. The prevalence rates here are much higher than the national average of 34.0% and the CAR average of 41.0%.

- About 4 in every 100 children in Lanao del Sur are tall for their age. 2 in every 100 children in Maguindanao, Antique, and Camarines Norte are tall. North Cotabato, Sulu, Marawi City, Aklan, Lanao del Norte, and Cavite, each have 1 tall child in every 100 children.

Table 26: Percentage Distribution of 0-5 Year-Old Children, by NCHS/ WHO Height-for-Age Classification, and by Region/Province/City*

Region/Province/City	Stunted	Normal	Tall
Philippines	***34.0***	***65.7***	***0.4***
I. Ilocos	***26.7***	***73.3***	***0.0***
Ilocos Norte	29.2	70.8	0.0
Ilocos Sur	20.6	79.4	0.0
La Union	28.7	71.3	0.0
Pangasinan	27.2	72.8	0.0
II. Cagayan Valley	***32.2***	***67.4***	***0.3***
Batanes	13.3	86.7	0.0
Cagayan	37.0	62.2	0.8
Isabela	29.2	70.8	0.0
Nueva Vizcaya	24.5	75.4	0.1
Quirino	38.1	61.9	0.0
III. Central Luzon	***23.3***	***76.2***	***0.5***
Bataan	23.3	76.3	0.4
Bulacan	21.1	78.6	0.3
Nueva Ecija	24.6	74.5	0.9
Pampanga	18.5	81.1	0.4
Tarlac	34.6	64.9	0.5
Zambales	29.5	70.5	0.0

* Numbers may not add up to 100.0 due to rounding off.

cont… Table 26

Region/Province/City	Stunted	Normal	Tall
IV. Southern Tagalog	***27.7***	***72.0***	***0.4***
Aurora	42.4	57.0	0.6
Batangas	23.0	76.8	0.2
Cavite	17.6	81.2	1.2
Laguna	22.0	78.0	0.0
Marinduque	36.2	63.8	0.0
Occidental Mindoro	35.4	64.6	0.0
Oriental Mindoro	34.4	65.1	0.5
Palawan	34.3	65.7	0.0
Quezon	36.0	64.0	0.0
Rizal	33.7	66.2	0.2
Romblon	34.0	65.9	0.2
V. Bicol	***36.6***	***63.3***	***0.2***
Albay	32.7	67.3	0.0
Camarines Norte	37.3	61.1	1.6
Camarines Sur	35.4	64.6	0.0
Catanduanes	39.9	60.1	0.0
Masbate	38.6	61.4	0.0
Sorsogon	40.4	59.4	0.2
VI. Western Visayas	***37.1***	***62.5***	***0.4***
Aklan	36.1	62.7	1.2
Antique	38.9	59.5	1.6
Capiz	41.4	58.4	0.2
Guimaras	36.0	64.0	0.0
Iloilo	42.0	57.9	0.1
Negros Occidental	35.1	64.9	0.1
VII. Central Visayas	***40.2***	***59.6***	***0.1***
Bohol	45.8	54.2	0.0
Cebu	41.7	58.0	0.2
Negros Oriental	31.7	68.3	0.0
Siquijor	26.4	73.2	0.5

* Numbers may not add up to 100.0 due to rounding off.

cont… Table 26

Region/Province/City	Stunted	Normal	Tall
VIII. Eastern Visayas	***41.7***	***58.2***	***0.1***
Biliran	41.4	58.1	0.4
Eastern Samar	42.7	57.3	0.0
Leyte	38.3	61.7	0.0
Northern Samar	47.8	51.9	0.2
Southern Leyte	50.2	49.3	0.5
Western Samar	38.1	61.9	0.0
IX. Western Mindanao	***40.0***	***59.5***	***0.5***
Zamboanga del Norte	39.9	59.9	0.2
Zamboanga del Sur	43.2	56.0	0.8
X. Northern Mindanao	***38.8***	***61.0***	***0.2***
Bukidnon	44.7	55.3	0.1
Camiguin	31.8	67.3	0.8
Misamis Occidental	34.1	65.9	0.0
Misamis Oriental	39.5	60.5	0.0
XI. Southern Mindanao	***40.5***	***59.3***	***0.1***
Compostela Valley	46.8	52.7	0.4
Davao del Norte	32.3	67.5	0.2
Davao del Sur	40.4	59.5	0.1
Davao Oriental	40.3	59.7	0.0
Sarangani	43.3	56.7	0.0
South Cotabato	45.0	55.0	0.0
Sultan Kudarat	41.4	58.2	0.4
XII. Central Mindanao	***39.1***	***60.1***	***0.8***
Cotabato City	37.2	62.8	0.0
Marawi City	41.7	57.0	1.3
Lanao del Norte	38.3	61.7	0.0
North Cotabato	39.4	59.2	1.4
XIII. CARAGA	***42.0***	***57.9***	***0.1***
Agusan del Norte	36.3	63.7	0.0
Agusan del Sur	47.1	52.7	0.2
Surigao del Norte	40.3	59.7	0.0
Surigao del Sur	43.9	55.9	0.2

* Numbers may not add up to 100.0 due to rounding off.

cont… Table 26

Region/Province/City	Stunted	Normal	Tall
NCR	***25.7***	***73.8***	***0.5***
Manila	25.4	73.7	0.9
Quezon City	29.7	70.3	0.0
Pasay City	20.4	78.4	1.3
Kalookan City	19.5	80.5	0.0
Makati City	25.1	74.4	0.5
Mandaluyong/San Juan	27.1	72.9	0.0
Marikina/Pasig	21.1	78.2	0.6
Tagig/Muntilupa/Pateros	28.0	71.0	1.0
Las Piñas/Parañaque	27.5	72.5	0.0
Malabon/Navotas/Valenzuela	30.4	69.5	0.1
CAR	***41.0***	***58.7***	***0.3***
Abra	33.4	65.6	0.9
Apayao	33.2	66.8	0.0
Benguet	34.2	65.8	0.0
Ifugao	46.5	53.5	0.0
Kalinga	55.7	43.9	0.3
Mountain Province	49.0	50.2	0.8
ARMM	***35.8***	***61.9***	***2.4***
Lanao del Sur	38.9	57.2	3.9
Maguindanao	34.1	63.8	2.1
Sulu	34.7	63.9	1.4
Tawi-tawi	34.2	65.0	0.8
Highly Urbanized Cities (HUC)			
Iloilo City	28.2	70.7	1.1
Bacolod City	30.8	69.0	0.2
Cebu City	41.2	58.6	0.3
Mandawe City	39.3	60.7	0.0
Toledo City	44.5	55.5	0.0
Zamboanga City	29.7	70.1	0.2
Cagayan de Oro City	29.7	69.1	1.2
Davao City	36.2	63.8	0.0
Iligan City	39.3	60.7	0.0
Baguio City	32.9	67.0	0.1

* Numbers may not add up to 100.0 due to rounding off.

3.1.3 Weight-for-Height Classification

- Iloilo City, an HUC, tops the list of areas with 15 wasted children in every 100, followed by Antique and Bacolod City each with 13 wasted in every 100 children, then the cluster of Malabon/Navotas/Valenzuela of NCR and Negros Occidental each with 12 wasted in every 100 children, Cagayan de Oro City, Las Pinas/Paranaque each with 11 wasted children in every 100 and Tawi-Tawi with 10 in every 100 children.

- Marawi City has the highest prevalence rate of overweight children for their height, 5 in every 100; Lanao del Sur, 4 in every 100; Pasay City, 3 in every 100; Mountain Province, Bulacan Iligan City, Las Pinas/Paranaque, with 2 each in every 100 children.

- Some of these aforementioned provinces/cities have consistently high prevalences not only of wasting but also of underweight and stunting.

Table 27: Percentage Distribution of 0-5 Year-Old Children, by NCHS/ WHO Weight-for-Height Classification, and by Region/ Province/City*

Region/Province/City	Wasted	Normal	Overweight-for-their-Height	NEC
Philippines	***6.0***	***93.0***	***0.9***	***0.1***
I. Ilocos	***7.8***	***90.7***	***1.5***	***0.0***
Ilocos Norte	7.6	92.1	0.3	0.0
Ilocos Sur	8.0	90.6	1.1	0.2
La Union	8.3	89.8	1.9	0.0
Pangasinan	7.7	90.6	1.7	0.0
II. Cagayan Valley	***7.7***	***91.6***	***0.7***	***0.0***
Batanes	4.6	95.4	0.0	0.0
Cagayan	7.3	91.5	1.1	0.0
Isabela	9.4	90.2	0.3	0.1
Nueva Vizcaya	4.6	94.8	0.6	0.0
Quirino	4.7	94.8	0.2	0.3

* Numbers may not add up to 100.0 due to rounding off.
NEC – Not Elsewhere Classified for children whose heights are beyond the limits of the Weight-for-Height tables

cont… Table 27

Region/Province/City	Wasted	Normal	Overweight-for-their-Height	NEC
III. Central Luzon	***5.9***	***92.5***	***1.5***	***0.2***
Bataan	3.6	95.0	1.1	***0.3***
Bulacan	5.1	92.5	2.3	0.1
Nueva Ecija	6.3	92.2	1.5	0.0
Pampanga	5.6	93.3	1.1	0.0
Tarlac	8.2	90.6	0.8	0.4
Zambales	7.4	89.9	1.7	1.0
IV. Southern Tagalog	***4.8***	***94.5***	***0.7.***	***0.0***
Aurora	8.2	90.8	1.0	0.0
Batangas	4.3	94.6	1.0	0.1
Cavite	3.9	95.5	0.6	0.0
Laguna	6.4	92.0	1.5	0.1
Marinduque	3.9	95.6	0.5	0.0
Occidental Mindoro	6.0	93.6	0.4	0.0
Oriental Mindoro	5.6	92.7	1.6	0.0
Palawan	5.8	93.5	0.7	0.0
Quezon	3.9	96.0	0.1	0.0
Rizal	5.0	95.0	0.0	0.0
Romblon	4.7	95.3	0.0	0.0
V. Bicol	***4.5***	***94.8***	***0.4***	***0.2***
Albay	5.8	93.3	0.9	0.0
Camarines Norte	4.0	95.7	0.0	0.3
Camarines Sur	2.1	97.5	0.2	0.2
Catanduanes	6.5	92.3	0.9	0.3
Masbate	7.4	92.1	0.3	0.2
Sorsogon	4.3	95.0	0.4	0.3
VI. Western Visayas	***9.9***	***89.5***	***0.5***	***0.1***
Aklan	8.0	91.9	0.0	0.1
Antique	13.2	86.2	0.4	0.2
Capiz	6.6	93.0	0.4	0.0
Guimaras	4.6	94.7	0.7	0.0
Iloilo	6.3	92.4	1.1	0.2
Negros Occidental	11.6	87.7	0.5	0.1

* Numbers may not add up to 100.0 due to rounding off.

NEC – Not Elsewhere Classified for children whose heights are beyond the limits of the Weight-for-Height tables

cont… Table 27

Region/Province/City	Wasted	Normal	Overweight-for-their-Height	NEC
VII. Central Visayas	***3.7***	***95.7***	***0.6***	***0.0***
Bohol	3.3	96.4	0.3	0.0
Cebu	3.5	95.8	0.7	0.0
Negros Oriental	4.5	95.0	0.4	0.0
Siquijor	2.4	95.7	2.0	0.0
VIII. Eastern Visayas	***5.4***	***93.6***	***0.8***	***0.2***
Biliran	4.0	96.0	0.0	0.0
Eastern Samar	3.4	95.8	0.0	0.7
Leyte	4.6	94.7	0.7	0.0
Northern Samar	5.3	92.5	2.0	0.2
Southern Leyte	11.7	87.5	0.7	0.1
Western Samar	4.6	94.3	1.0	0.2
IX. Western Mindanao	***7.9***	***91.4***	***0.6***	***0.1***
Zamboanga del Norte	8.3	90.2	1.6	0.0
Zamboanga del Sur	8.4	91.4	0.1	0.2
X. Northern Mindanao	***4.4***	***94.6***	***0.9***	***0.1***
Bukidnon	1.7	96.6	1.6	0.1
Camiguin	8.1	91.7	0.2	0.0
Misamis Occidental	4.8	93.7	1.2	0.3
Misamis Oriental	3.7	96.3	0.0	0.0
XI. Southern Mindanao	***5.3***	***94.0***	***0.7***	***0.1***
Compostela Valley	3.7	95.6	0.5	0.2
Davao del Norte	8.9	90.7	0.4	0.0
Davao del Sur	4.2	95.5	0.1	0.1
Davao Oriental	4.1	94.5	1.2	0.2
Sarangani	6.0	93.6	0.4	0.0
South Cotabato	4.8	94.4	0.9	0.0
Sultan Kudarat	6.8	92.0	1.0	0.1

* Numbers may not add up to 100.0 due to rounding off.
NEC – Not Elsewhere Classified for children whose heights are beyond the limits of the Weight-for-Height tables

cont… Table 27

Region/Province/City	Wasted	Normal	Overweight-for-their-Height	NEC
XII. Central Mindanao	***5.9***	***92.8***	***1.2***	***0.1***
Cotabato City	8.5	89.7	1.6	0.2
Marawi City	9.1	85.5	5.4	0.0
Lanao del Norte	3.0	96.5	0.4	0.1
North Cotabato	7.2	92.0	0.8	0.0
XIII. CARAGA	***5.4***	***93.4***	***1.1***	***0.1***
Agusan del Norte	5.6	93.4	0.9	0.2
Agusan del Sur	3.3	95.6	1.0	0.1
Surigao del Norte	6.5	91.7	1.8	0.0
Surigao del Sur	6.1	93.6	0.4	0.0
NCR	***6.2***	***92.1***	***1.5***	***0.1***
Manila	5.5	92.9	1.5	0.0
Quezon City	3.3	95.0	1.3	0.4
Pasay City	5.9	91.0	3.1	0.0
Kalookan City	4.5	93.7	1.7	0.0
Makati City	6.8	91.2	1.9	0.0
Mandaluyong/San Juan	5.6	93.4	1.0	0.0
Marikina/Pasig	8.9	89.6	1.4	0.0
Tagig/Muntilupa/Pateros	5.6	93.1	1.3	0.1
Las Piñas/Parañaque	10.9	86.6	2.2	0.3
Malabon/Navotas/Valenzuela	11.6	87.9	0.4	0.1
CAR	***3.3***	***95.3***	***1.3***	***0.0***
Abra	8.9	90.3	0.8	0.0
Apayao	6.3	92.6	0.7	0.3
Benguet	1.2	97.4	1.4	0.0
Ifugao	1.6	97.6	0.8	0.0
Kalinga	4.4	94.1	1.6	0.0
Mountain Province	0.3	97.3	2.4	0.0

* Numbers may not add up to 100.0 due to rounding off.
NEC – Not Elsewhere Classified for children whose heights are beyond the limits of the Weight-for-Height tables

cont… Table 27

Region/Province/City	Wasted	Normal	Overweight-for-their-Height	NEC
ARMM	***7.9***	***90.3***	***1.7***	***0.1***
Lanao del Sur	8.5	88.1	3.5	0.0
Maguindanao	7.5	91.8	0.5	0.2
Sulu	6.5	91.6	1.8	0.0
Tawi-tawi	10.3	88.7	0.3	0.6
Highly Urbanized Cities (HUC)				
Iloilo City	15.0	85.0	0.0	0.0
Bacolod City	13.0	86.7	0.2	0.2
Cebu City	4.6	94.5	0.7	0.2
Mandawe City	2.5	96.5	1.0	0.0
Toledo City	3.3	96.0	0.7	0.0
Zamboanga City	5.3	94.1	0.6	0.0
Cagayan de Oro City	11.4	88.4	0.1	0.1
Davao City	4.3	94.7	0.9	0.0
Iligan City	2.7	94.4	2.3	0.6
Baguio City	1.1	97.5	1.4	0.0

* Numbers may not add up to 100.0 due to rounding off.
NEC – Not Elsewhere Classified for children whose heights are beyond the limits of the Weight-for-Height tables

B. WAIST CIRCUMFERENCE (WC)

What is the waist circumference (WC) of Filipino adults? Does WC of male and female differ?

In general, the waist circumference (WC) of Filipino adults is within normal levels, but WC differs by age and sex.

This is shown in the 5th NNS of the FNRI-DOST which focuses on android obesity, sometimes called central obesity or upper body obesity among adults, 20 years and over. Aside from the body mass index (BMI) discussed on page 14, WC is another measurement to determine the amount of body fat or adipose tissue.

Waist circumference is measured by positioning horizontally the tape measure halfway between the lower rib margin and the superior iliac crest for women; and on men, at the level of the umbilicus. The WC of adults is then assessed using the following criteria:

Table 28: Assessment Criteria for Waist Circumference (WC)

Sex	WC Clinical Thresholds
Male	≥ 102 cm (~40 inches)
Female	≥ 88 cm (~35 inches)

1. At the National Level

- Mean WC of male and female Filipino adults, 20 years old and over, are 79.0 cm and 74.0 cm, respectively.

Table 29: Mean Waist Circumference (WC) among Adults, 20 Years Old and Over

Mean WC (cm)	
Male	**Female**
79.0	74.0

- Mean WC peaks at age 40 years for both sexes, with males at 81.6 cm and females at 75.7 cm.

Table 30: Means and Percentage Distribution of Waist Circumference (WC), by Age and by Sex

Age Group (years) and Sex	Mean WC (cm)	Percentage Distribution	
Male		**WC<102 (cm)**	**WC≥102 (cm)**
20-39	77.8	98.3	1.7
40-59	81.6	94.9	5.1
60 & over	78.6	98.2	1.8
Overall	***79.0***	***97.3***	***2.7***
Female		**WC<88 (cm)**	**WC≥88 (cm)**
20-39	73.1	90.0	10.0
40-59	75.7	88.3	11.7
60 & over	73.7	88.5	11.5
Overall	***74.0***	***89.3***	***10.7***

2. At the Regional Level

2.1 Mean Waist Circumference (WC)

- The mean waist circumference of male and female Filipino adults is within normal levels.

- The waist circumference of male Filipino adults for the different regions of the Philippines ranges from 75.2 – 84.0 cm, with a mean of 79.0 cm.

- The mean waist circumference is lower (74.0 cm) among the female adults than among the male adults, with values for the different regions ranging from 72.1 – 82.2 cm.

- The highest mean waist circumference among the male adults for the different regions is observed in Central Luzon with a mean value of 84.0 cm. Western Mindanao scores the lowest mean value of 75.2 cm.

- The region with the highest mean waist circumference for the female adults is CAR (82.2 cm). The region with the lowest mean WC is Cagayan Valley (71.2 cm).

Table 31: Mean Waist Circumference (WC) among Adults, 20 Years Old and Over, by Region

Region	Mean WC (cm)	
	Male	Female
Philippines	***79.0***	***74.0***
I. Ilocos Region	80.4	71.5
II. Cagayan Valley	77.9	71.2
III. Central Luzon	84.0	77.3
IV. Southern Tagalog	78.7	72.6
V. Bicol	77.0	74.0
VI. Western Visayas	76.7	71.9
VII. Central Visayas	79.1	74.3
VIII. Eastern Visayas	77.2	74.2
IX. Western Mindanao	75.2	75.0
X. Northern Mindanao	77.6	72.1
XI. Southern Mindanao	78.0	73.3
XII. Central Mindanao	79.9	73.6
XIII. CARAGA	77.2	72.2
NCR	80.7	78.0
CAR	76.8	82.2
ARMM	77.9	73.9

2.2 Prevalence of High Waist Circumference (WC)

- While the mean WC shows low risk, some regions show high risk to becoming obese which predisposes individuals to hypertension, heart disease, diabetes and others.

- Among male adults, the highest prevalence rate (10.1%) for high WC is recorded in Central Luzon, followed by CARAGA (6.8%).

- High waist circumference is more prevalent among the female adults (10.7%) than among the male adults (2.7%).

- There is no prevalence of male adults with high waist circumference of ≥102 cm in Cagayan Valley, Western Visayas, Western Mindanao and ARMM.

- Among female adults, NCR consistently shows the highest prevalence rate of 23.3%. Ilocos and Cagayan Valley Regions have the lowest rate of 1.2% and 1.7%, respectively.

Table 32: Prevalence of High Waist Circumference (WC) among Adults, 20 Years Old and Over, by Region

Region	% Prevalence of High Waist Circumference (cm)	
	Male (≥102)	Female (≥88)
Philippines	***2.7***	***10.7***
I. Ilocos Region	1.5	1.2
II. Cagayan Valley	0.0	1.7
III. Central Luzon	10.1	22.4
IV. Southern Tagalog	2.4	10.2
V. Bicol	0.7	15.4
VI. Western Visayas	0.0	5.1
VII. Central Visayas	0.7	5.4
VIII. Eastern Visayas	0.6	12.5
IX. Western Mindanao	0.0	13.3
X. Northern Mindanao	2.6	4.9
XI. Southern Mindanao	2.0	6.6
XII. Central Mindanao	1.7	4.7
XIII. CARAGA	6.8	10.0
NCR	2.4	23.3
CAR	0.4	13.9
ARMM	0.0	5.4

C. WAIST-HIP-RATIO (WHR)

What is the waist-hip ratio (WHR) of Filipinos? Do age and sex affect the WHR? What is the prevalence of WHR in the regions?

The 1998 5th National Nutrition Survey of the FNRI-DOST answers the above questions. The 5th NNS used the WHR as another measurement in determining the amount of body fat or adipose tissue.

Waist and hip circumference are measured using fiber glass tape taken over one layer of clothing. Hip circumference is measured by positioning the tape measure around the hips at the level of the great trochanter or approximately four (4) inches down from the waistline. To get WHR, waist circumference is divided by the hip circumference. Below is the set of assessment criteria for WHR.

Table 33: Assessment Criteria for Waist-Hip Ratio (WHR)

Sex	WHR Considered for Upper Body Obesity or Android Obesity
Male	≥ 1.0
Female	≥ 0.85

1. At the National Level

1.1. Mean Waist-Hip Ratio

- Mean WHRs for male and female Filipino adults are 0.90 and 0.83, respectively.

Table 34: Mean Waist-Hip Ratio (WHR) among Adults, 20 Years Old and Over

Mean WHR	
Male	**Female**
0.90	0.83

- Mean WHR is highest at 40 years in both males and females. The prevalence of high WHR peaks also at this age in both sexes.

Table 35: Means and Percentage Distribution of Waist-Hip Ratio (WHR), by Age and by Sex

Age Group (years) and Sex	Mean WHR	Percentage Distribution WHR		
Male		**<0.9**	**0.9-0.99**	**≥1.0**
20-39	0.89	52.7	44.2	3.0
40-59	0.92	31.5	55.7	12.8
60 & over	0.91	42.6	50.6	6.8
Overall	***0.90***	***44.9***	***47.2***	***7.9***
Female		**<0.8**	**0.8-0.84**	**≥0.85**
20-39	0.83	20.2	43.5	36.3
40-59	0.84	16.7	37.5	45.8
60 & over	0.83	25.1	36.3	38.6
Overall	***0.83***	***19.7***	***40.8***	***39.5***

2. At the Regional Level

2.1 Mean Waist-Hip Ratio (WHR)

- Among the regions, NCR has the highest mean WHR of 0.93 for the males. The highest mean WHR is recorded for CAR at 0.90 for the females.

- Six regions namely, Central Luzon, Southern Tagalog, Central Visayas, Bicol, Eastern Visayas, and Central Mindanao have identically high mean WHR of 0.91 for the males. Cagayan Valley and CAR have the lowest mean WHR of 0.87.

- Six regions namely, Central Luzon, Bicol, Western Visayas, Central Visayas, Western Mindanao, and ARMM have identical WHR of 0.84 for the females while Ilocos has the lowest mean WHR of 0.81.

Table 36: Mean Waist-Hip Ratio (WHR) among Adults, 20 Years Old and Over, by Region

Region	Mean WHR	
	Male	Female
Philippines	***0.90***	***0.83***
I. Ilocos Region	0.89	0.81
II. Cagayan Valley	0.87	0.82
III. Central Luzon	0.91	0.84
IV. Southern Tagalog	0.91	0.82
V. Bicol	0.91	0.84
VI. Western Visayas	0.90	0.84
VII. Central Visayas	0.91	0.84
VIII. Eastern Visayas	0.91	0.83
IX. Western Mindanao	0.89	0.84
X. Northern Mindanao	0.90	0.82
XI. Southern Mindanao	0.89	0.82
XII. Central Mindanao	0.91	0.83
XIII. CARAGA	0.88	0.83
NCR	0.93	0.85
CAR	0.87	0.90
ARMM	0.89	0.84

2.2 Prevalence of High Waist-Hip Ratio (WHR)

- Among the male adults, almost 8.0% have android obesity; among the female adults, national prevalence rate of android obesity is about 40%.

- Prevalence rate of android obesity is consistently higher among the female than the male adults in all regions.

- Among the regions, NCR has the highest prevalence rate among the males at 15.3%, followed by Central Mindanao, (14.1%) and Bicol (12.5%). Cagayan Valley has the lowest rate of 0.4% only.

- Western Mindanao has the highest prevalence of 60.0% among the females while NCR ranks second with a rate of 48.6%. Just like for the prevalence among the male subjects, Cagayan Valley has the lowest prevalence rate of 19.7%.

- While the mean WHR shows low risk, some regions show high risk.

Table 37: Prevalence of High Waist-Hip Ratio (WHR) among Adults, 20 Years Old and Over, by Region

Region	% Prevalence of High Waist Circumference (cm)	
	Male (≥1.0)	Female (≥0.85)
Philippines	***7.9***	***39.5***
I. Ilocos Region	8.1	27.5
II. Cagayan Valley	0.4	19.7
III. Central Luzon	7.6	47.3
IV. Southern Tagalog	11.2	31.0
V. Bicol	12.5	41.5
VI. Western Visayas	4.6	45.2
VII. Central Visayas	8.2	43.9
VIII. Eastern Visayas	6.8	40.7
IX. Western Mindanao	9.2	60.0
X. Northern Mindanao	3.9	40.9
XI. Southern Mindanao	2.9	32.0
XII. Central Mindanao	14.1	34.2
XIII. CARAGA	0.7	43.7
NCR	15.3	48.6
CAR	0.8	37.1
ARMM	0.8	38.8

Part III. Biochemical Facts and Figures

A. VITAMIN A DEFICIENCY (VAD)

Is Vitamin A Deficiency (VAD) widespread throughout the country? What is the overall VAD prevalence rate among infants, children, and pregnant and lactating women? Is there any improvement in the vitamin A status from the previous years?

Lack of vitamin A may result in xerophthalmia (dryness of the eye), nightblindness (inability to see in dim light), eyes sensitive to bright light, rough dry skin and membranes of nose and throat, low body resistance to disease, poor growth and blindness in severe cases.

In the 5th NNS of 1998, vitamin A deficiency (VAD) prevalence rates in the country, manifested as low plasma retinol levels among preschool-age children, were determined.

The WHO/UNICEF-HK/IVACG, 1982 Guidelines below were used to interpret the data.

Table 38: Guidelines Used for the Interpretation of Plasma Vitamin A Level

Classification Level	Plasma Retinol or Vitamin A, ug/dL
Deficient	<10
Low	10-19
Acceptable	20-49
High	≥50

Table 39: Criteria for Assessing the Public Health Significance of Vitamin A Deficiency in the Community

Criteria	Minimum Prevalence (%)
Plasma Retinol (Vitamin A) less than 10 ug/dL (Deficient)	5
Plasma Retinol (Vitamin A) less than 20 ug/dL (Deficient & Low)	15

WHO/UNICEF/HKI/IVACG, 1982

1. At the National Level

- About 4 in every 10 children, 6 months-5 years, have deficient to low vitamin A levels.

- The prevalence rate of VAD (deficient to low) is 2 in every 10 pregnant and lactating women.

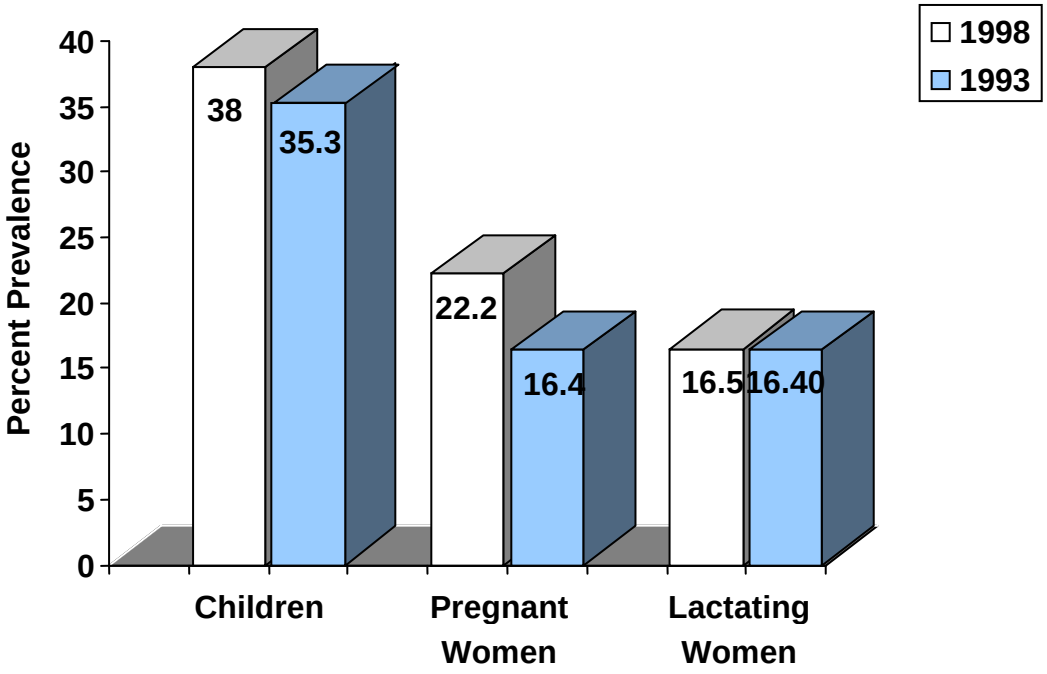
1.1 Trends in the Prevalence of Vitamin A Deficiency, by Age, and by Physiological State: 1993 & 1998

- The number of children with deficient to low vitamin A levels is higher in 1998 than in the 1993 survey (38.0% vs. 35.3%), indicating that VAD still remains as a public health problem among children. Based on deficient level alone, VAD prevalence of 8.2% in 1998 is lower than the 1993 prevalence rate of 10.4% also indicating that VAD is a significant health problem.

- The overall prevalence rate of VAD among pregnant women is higher in the 1998 than in the 1993 survey (22.2% vs. 16.4%). Thus VAD is, until now, a public health problem among pregnant women.

- The 1998 survey shows the same prevalence of VAD among lactating women as in the 1993 survey (16.5% vs 16.4%).

Figure 7: Prevalence of Vitamin A Deficiency (VAD) in Selected Population Groups

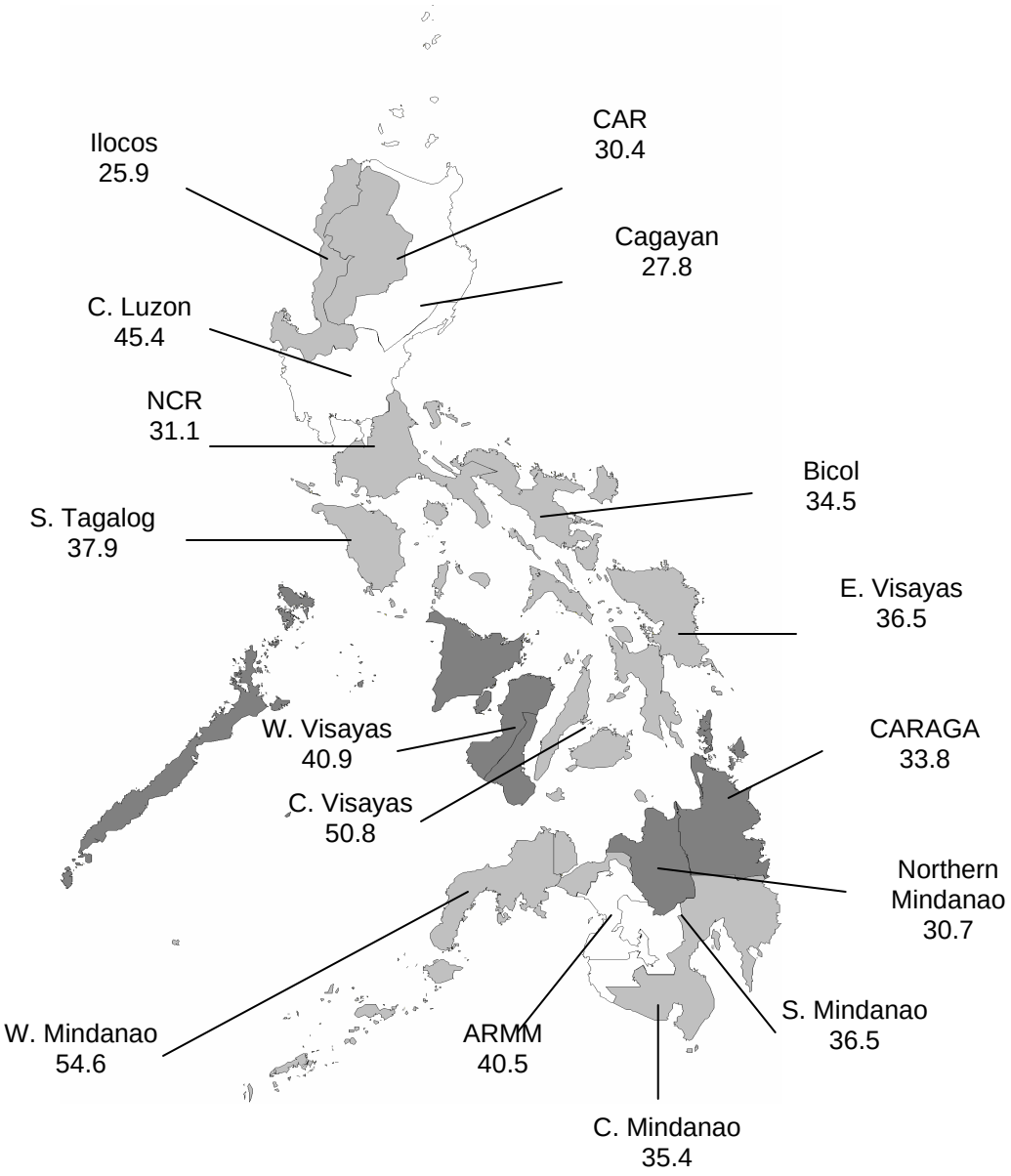


2. At the Regional Level

2.1 Children (6 months to 5 years old)

- Vitamin A deficiency is a public health problem in all the 16 regions.
- Western Mindanao has the highest VAD prevalence rate, while Ilocos has the lowest VAD prevalence rate.

Figure 8: Prevalence of Vitamin A Deficiency (VAD) among Children, 6 Months to 5 Years Old, by Region

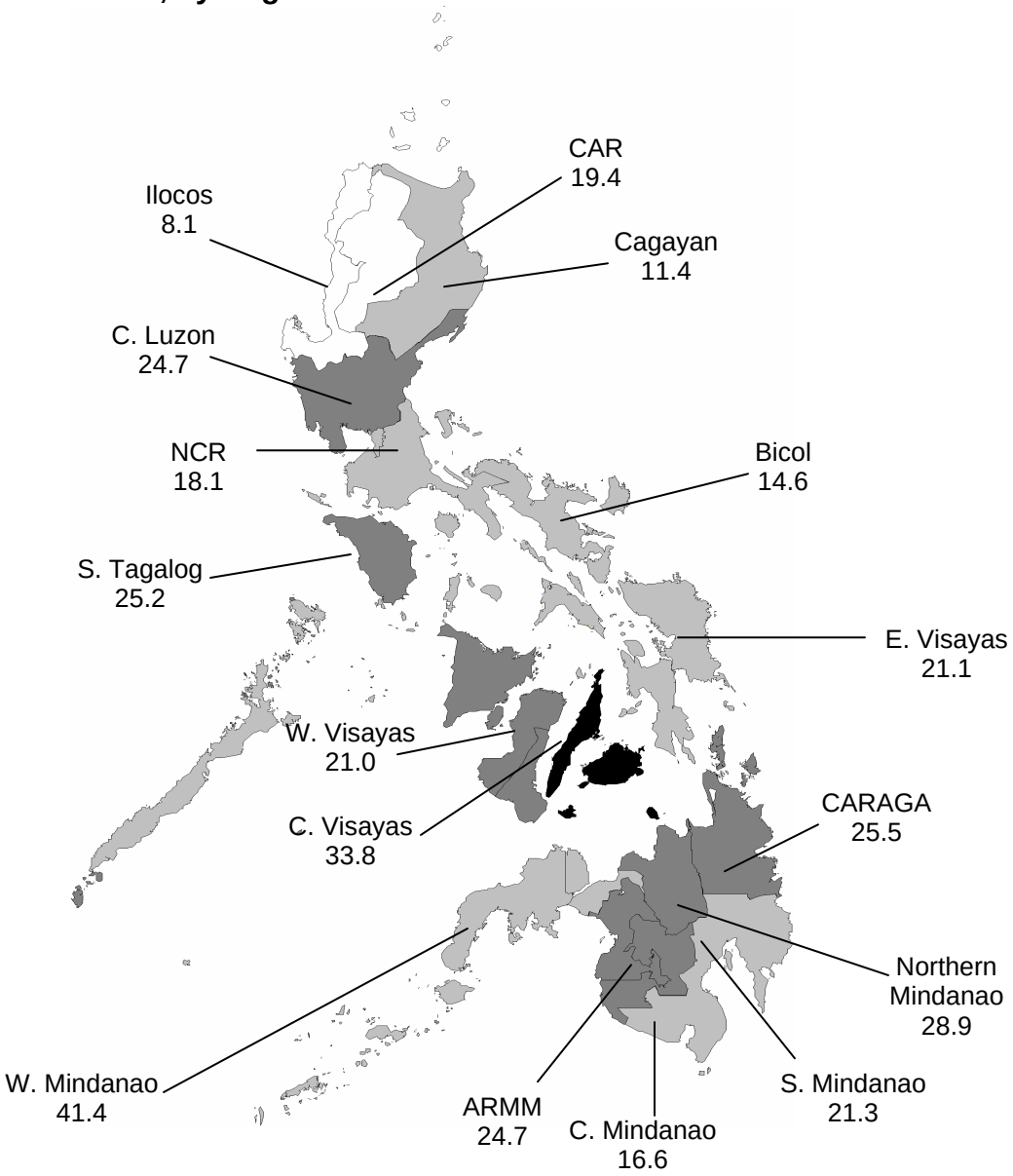


2.2 Pregnant Women

- 13 out of 16 regions have VAD as a significant health problem among pregnant women.

- The VAD prevalence rates are lowest in Ilocos at 8.1% and highest in Western Mindanao at 41.4%.

Figure 9: Prevalence of Vitamin A Deficiency (VAD) among Pregnant Women, by Region

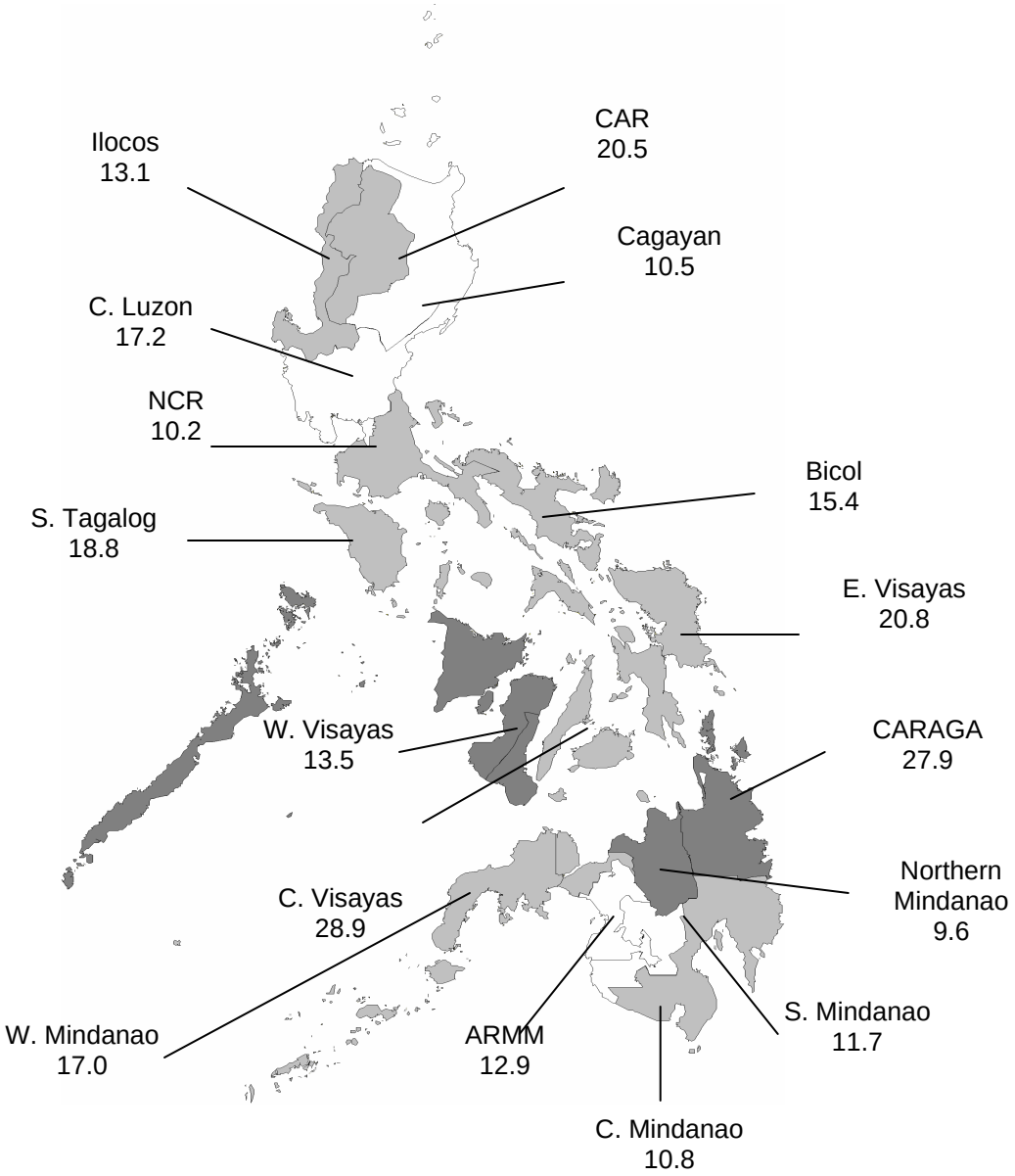


2.3 Lactating Women

- The VAD prevalence among lactating women is a public health problem in only 8 out of 16 regions.

- The VAD prevalence rate among lactating women ranges from 9.6% in Northern Mindanao to 28.9% in Central Visayas.

Figure 10: Prevalence of Vitamin A Deficiency (VAD) among Lactating Women, by Region



3. At the Provincial/City Level

3.1 Children (6 months to 5 years old)

- VAD is widespread throughout the country. Among the high-risk provinces are Zamboanga del Norte, Lanao del Norte, Romblon, Bohol, Misamis Occidental, Nueva Ecija, and Surigao del Sur.

- Of the HUCs, Toledo has an alarmingly high prevalence rate of deficient to low vitamin A.

- In the NCR, Taguig/Muntinlupa/Pateros are high-risk areas followed by Las Pinas/Parañaque.

3.2 Pregnant Women

- High-risk areas include Surigao del Norte, Nueva Viscaya, Zamboanga del Norte, Zambales, Cebu, Quirino, Misamis Oriental, Kalinga, Abra, and Biliran.

- Among the HUCs, Toledo and Bacolod Cities are the highly affected cities.

- In the NCR, high-risk areas of public health importance include Manila, and the cluster of Malabon/Navotas/Valenzuela.

3.3 Lactating Women

- Among the provinces, Surigao del Norte, Western Samar, Zamboanga del Norte, Abra and Sulu are the high-risk VAD areas.

- Among the HUCs, Toledo City is the most high-risk area.

- In the NCR, the public health problem areas are Taguig/Muntinlupa/Pateros

Table 40: Prevalence of Vitamin A Deficiency (VAD) among Specific Population Groups, by Region/Province/City

Region/Province/City	6 mos – 5 yrs old Children		Pregnant Women		Lactating Women	
	% Deficient	% Deficient and Low	% Deficient	% Deficient and Low	% Deficient	% Deficient and Low
Philippines	**8.2**	**38.0**	**7.1**	**22.2**	**3.9**	**16.5**
I. Ilocos	**4.6**	**25.9**	**1.3**	**8.1**	**1.2**	**13.1**
Ilocos Norte	0.8	8.6	0.0	0.0	0.0	1.4
Ilocos Sur	8.3	28.7	2.9	11.5	1.5	3.3
La Union	5.8	23.2	5.7	17.1	2.3	20.2
Pangasinan	4.2	29.4	0.0	7.1	1.1	16.5
II. Cagayan Valley	**2.4**	**27.8**	**4.2**	**11.4**	**4.0**	**10.5**
Batanes	2.8	15.1	7.1	7.1	0.0	11.5
Cagayan	1.3	31.5	5.6	5.6	6.2	14.2
Isabela	1.6	17.9	1.4	3.7	0.0	1.3
Nueva Vizcaya	6.9	42.1	6.7	56.5	5.8	15.4
Quirino	6.9	42.4	4.9	44.3	8.1	28.8
III. Central Luzon	**6.8**	**45.4**	**3.4**	**24.7**	**7.7**	**17.2**
Bataan	8.9	55.6	5.0	27.8	8.7	27.7
Bulacan	6.7	41.8	1.1	39.5	5.3	31.6
Nueva Ecija	11.4	58.3	10.5	16.9	3.7	17.7
Pampanga	2.4	32.9	0.5	19.3	8.9	9.4
Tarlac	4.0	47.5	3.7	16.2	16.4	21.5
Zambales	13.4	55.8	0.0	47.7	0.0	16.0

WHO, UNICEF, HKI, IVACG, 1982 Guidelines

Deficient <10 ug/dL

Deficient and Low <20 ug/dL

cont… Table 40

Region/Province/City	6 mos – 5 yrs old Children		Pregnant Women		Lactating Women	
	% Deficient	% Deficient and Low	% Deficient	% Deficient and Low	% Deficient	% Deficient and Low
IV. Southern Tagalog	**6.8**	**37.9**	**4.8**	**25.2**	**3.9**	**18.8**
Aurora	8.4	42.6	0.0	7.2	0.0	4.4
Batangas	5.8	42.5	3.3	38.0	2.5	25.2
Cavite	9.0	38.4	8.1	32.7	18.4	3.5
Laguna	3.5	40.8	3.1	13.4	0.0	10.8
Marinduque	1.3	20.4	1.8	1.8	0.0	15.4
Occidental Mindoro	2.9	33.5	0.0	6.4	0.0	18.2
Oriental Mindoro	12.5	49.9	15.4	26.1	1.6	14.4
Palawan	3.0	42.9	0.0	34.0	0.0	23.6
Quezon	6.2	20.1	1.7	14.9	3.4	10.0
Rizal	4.5	29.7	3.6	18.8	6.3	30.1
Romblon	17.6	61.6	7.9	20.1	4.1	12.7
V. Bicol Region	**7.5**	**34.5**	**4.9**	**14.6**	**2.6**	**15.4**
Albay	0.5	33.5	4.2	15.1	0.5	15.3
Camarines Norte	5.7	27.0	12.6	27.2	0.0	11.6
Camarines Sur	10.7	28.9	2.5	9.8	0.4	6.5
Catanduanes	9.6	35.8	12.5	27.1	16.1	20.6
Masbate	19.0	56.0	13.9	21.7	8.0	28.7
Sorsogon	0.9	27.8	1.7	21.1	0.0	16.4

WHO, UNICEF, HKI, IVACG, 1982 Guidelines

Deficient <10 ug/dL

Deficient and Low <20 ug/dL

cont… Table 40

Region/Province/City	6 mos – 5 yrs old Children		Pregnant Women		Lactating Women	
	% Deficient	% Deficient and Low	% Deficient	% Deficient and Low	% Deficient	% Deficient and Low
VI. Western Visayas	**7.9**	**40.9**	**5.9**	**21.0**	**1.5**	**13.5**
Aklan	1.2	23.2	0.0	15.3	0.0	5.1
Antique	15.7	43.4	7.1	23.3	0.0	12.7
Capiz	0.1	13.4	0.0	0.0	0.0	4.7
Guimaras	9.1	43.5	7.8	25.5	0.0	9.4
Iloilo Province	9.0	46.8	0.0	5.1	0.0	22.0
Negros Occ.	8.4	48.2	4.0	28.8	2.9	13.3
Iloilo City	5.6	44.4	6.0	21.8	6.3	15.7
Bacolod City	13.1	37.0	39.4	46.0	2.5	6.7
VII. Central Visayas	**12.2**	**50.8**	**18.5**	**33.8**	**6.2**	**28.9**
Bohol	20.8	61.1	12.3	24.9	0.9	48.6
Cebu Province	9.8	51.9	28.6	45.8	9.4	25.0
Negros Oriental	4.7	37.7	0.0	11.8	0.4	19.6
Siquijor	2.8	34.1	0.0	7.1	0.0	22.0
Cebu City	8.6	34.2	9.1	25.6	8.4	19.0
Mandaue City	29.5	74.3	16.7	35.6	9.1	33.0
Toledo City	35.8	84.8	17.5	42.2	24.2	43.7
VIII. Eastern Visayas	**10.4**	**36.5**	**9.2**	**21.1**	**4.3**	**20.8**
Biliran	9.3	55.1	8.2	40.6	5.2	16.6
Eastern Samar	2.9	22.4	1.8	6.2	0.8	13.0
Leyte	8.0	32.4	5.2	12.6	0.5	9.5
Northern Samar	2.2	16.9	10.3	13.6	9.9	13.6
Southern Leyte	10.5	54.9	5.3	38.9	0.0	33.2
Western Samar	27.3	55.7	25.1	39.9	13.9	48.0

WHO, UNICEF, HKI, IVACG, 1982 Guidelines

Deficient <10 ug/dL

Deficient and Low <20 ug/dL

cont… Table 40

Region/Province/City	6 mos – 5 yrs old Children		Pregnant Women		Lactating Women	
	% Deficient	% Deficient and Low	% Deficient	% Deficient and Low	% Deficient	% Deficient and Low
IX. Western Mindanao	**22.7**	**54.6**	**19.1**	**41.4**	**8.6**	**17.0**
Zamboanga del Norte	43.7	78.4	32.8	54.2	24.6	46.3
Zamboanga del Sur	12.0	42.0	14.7	33.8	2.5	6.7
Zamboanga City	11.9	44.0	3.7	37.4	12.5	19.0
X. Northern Mindanao	**8.7**	**30.7**	**12.1**	**28.9**	**4.2**	**9.6**
Bukidnon	0.6	8.4	0.0	21.7	6.0	6.0
Camiguin	0.4	15.5	0.0	6.1	2.3	8.2
Misamis Occidental	17.3	59.5	13.1	26.6	1.9	15.1
Misamis Oriental	17.7	35.6	34.1	42.7	3.5	9.5
Cagayan de Oro City	6.0	45.4	0.8	30.0	2.4	15.2
XI. Southern Mindanao	**6.9**	**35.6**	**6.9**	**21.3**	**2.8**	**11.7**
Compostela Valley	9.5	49.2	2.2	16.8	4.7	28.2
Davao del Norte	4.9	40.3	5.2	39.6	0.0	22.1
Davao del Sur	6.1	49.0	10.4	30.6	5.0	10.5
Davao Oriental	5.8	36.5	3.7	22.6	4.3	16.1
Davao City	5.2	19.2	10.8	13.7	0.0	0.0
Sarangani	6.9	22.9	12.1	26.1	5.3	14.1
South Cotabato	3.2	24.1	0.0	8.9	0.4	0.4
Sultan Kudarat	15.5	41.9	5.5	14.0	4.6	8.5

WHO, UNICEF, HKI, IVACG, 1982 Guidelines

Deficient <10 ug/dL

Deficient and Low <20 ug/dL

cont… Table 40

Region/Province/City	6 mos – 5 yrs old Children		Pregnant Women		Lactating Women	
	% Deficient	% Deficient and Low	% Deficient	% Deficient and Low	% Deficient	% Deficient and Low
XII. Central Mindanao	**9.4**	**35.4**	**7.7**	**16.6**	**3.4**	**10.8**
Cotabato City	1.5	22.9	0.0	1.0	0.0	0.0
Lanao del Norte	23.7	65.4	10.5	20.8	0.0	24.4
North Cotabato	4.9	20.8	6.9	12.1	5.5	5.5
Iligan City	4.5	55.4	0.0	20.9	0.8	20.9
XIII. CARAGA	**12.7**	**33.8**	**8.0**	**25.5**	**4.3**	**27.9**
Agusan del Norte	3.3	27.5	0.0	11.1	0.0	15.3
Agusan del Sur	3.7	9.1	1.8	4.0	1.1	5.3
Surigao del Norte	18.2	41.6	25.8	61.1	7.8	54.5
Surigao del Sur	23.5	57.0	6.5	34.4	7.3	28.5
NCR	**2.5**	**31.1**	**1.5**	**18.1**	**1.2**	**10.2**
Manila	1.1	27.6	0.0	24.0	0.0	6.3
Quezon City	7.5	37.2	9.5	13.8	3.9	16.7
Pasay	2.2	14.1	0.0	9.5	0.0	2.6
Kalookan	3.5	26.3	1.5	8.0	8.6	14.0
Makati	0.0	15.7	0.0	3.1	0.0	13.8
Mandaluyong/San Juan	0.4	29.7	0.0	12.5	0.0	8.7
Marikina/Pasig	1.2	23.1	0.0	6.0	0.0	5.1
Tagig/Muntilupa/Pateros	1.4	49.6	0.0	12.1	0.0	28.8
Las Piñas/Parañaque	0.8	46.8	4.2	9.9	0.0	26.6
Malabon/Navotas/Valenzuela	1.5	40.5	0.0	20.4	0.5	18.7

WHO, UNICEF, HKI, IVACG, 1982 Guidelines

Deficient <10 ug/dL

Deficient and Low <20 ug/dL

cont… Table 40

Region/Province/City	6 mos – 5 yrs old Children		Pregnant Women		Lactating Women	
	% Deficient	% Deficient and Low	% Deficient	% Deficient and Low	% Deficient	% Deficient and Low
CAR	**6.3**	**30.4**	**6.3**	**19.4**	**1.2**	**20.6**
Abra	14.0	55.4	11.0	41.3	1.0	43.6
Apayao	1.2	36.9	0.0	25.9	0.0	0.0
Benguet	0.7	6.2	0.0	1.8	0.0	0.0
Ifugao	1.1	17.7	0.0	4.3	0.0	0.0
Kalinga	12.7	47.7	21.5	41.6	0.0	29.9
Mountain Province	6.2	15.6	2.3	2.3	13.8	17.3
Baguio	4.5	34.9	10.5	10.5	0.0	19.5
ARMM	**11.8**	**40.5**	**7.6**	**24.7**	**1.5**	**12.9**
Maguindanao	12.2	44.1	3.0	24.4	1.6	3.9
Sulu	11.3	36.2	18.6	20.0	1.4	36.6
Tawi-tawi	11.3	37.1	13.0	32.6	1.0	18.6

WHO, UNICEF, HKI, IVACG, 1982 Guidelines

Deficient **<10 ug/dL**

Deficient and Low <20 ug/dL

B. IRON DEFICIENCY ANEMIA (IDA)

Is iron deficiency anemia (IDA) still a serious public health problem among Filipino infants, children, pregnant and lactating women?

IDA occurs if the amount of iron absorbed is too little to meet the body's demands. This may be due to insufficient iron intake, reduced bioavailability of dietary iron, chronic blood loss, and/or increased iron requirements, as occurring during pregnancy or the period of growth.

The prevalence of anemia was assessed in the 5th National Nutrition Survey (1998), using hemoglobin levels among 36,364 individuals.

By the FNRI method of choice, i.e. the ICSH reference cyanmethemoglobin method, the blood samples are taken from the fingertip for hemoglobin (Hb) measurements. The WHO cut-off levels for hemoglobin and the FAO-WHO criteria below for assessing magnitude and severity of anemia are used.

Table 41: Normal Hemoglobin Levels

Age/Sex/Physiological State	Normal Hemoglobin Level (g/dL)
Children: 6 mos.-6 y	11.0
6.1 y – 14 y	12.0
Adults: Males	13.0
Females (Non-pregnant/non-lactating)	12.0
Pregnant Women	11.0
Lactating Women	12.0

WHO, 1972 Criteria

Table 42: Epidemiological Criteria for Assessing Severity and Magnitude of Nutritional Anemia in the Population

Parameter	Magnitude		
	High	Moderate	Low
Percent of Population with hemoglobin less than the above cut-off points especially for women and children	≥40.0	10-39	1-9
Percent of population with hemoglobin less than 7.0g/dL especially women and children	>10	1-9	<1

FAO/WHO, 1992

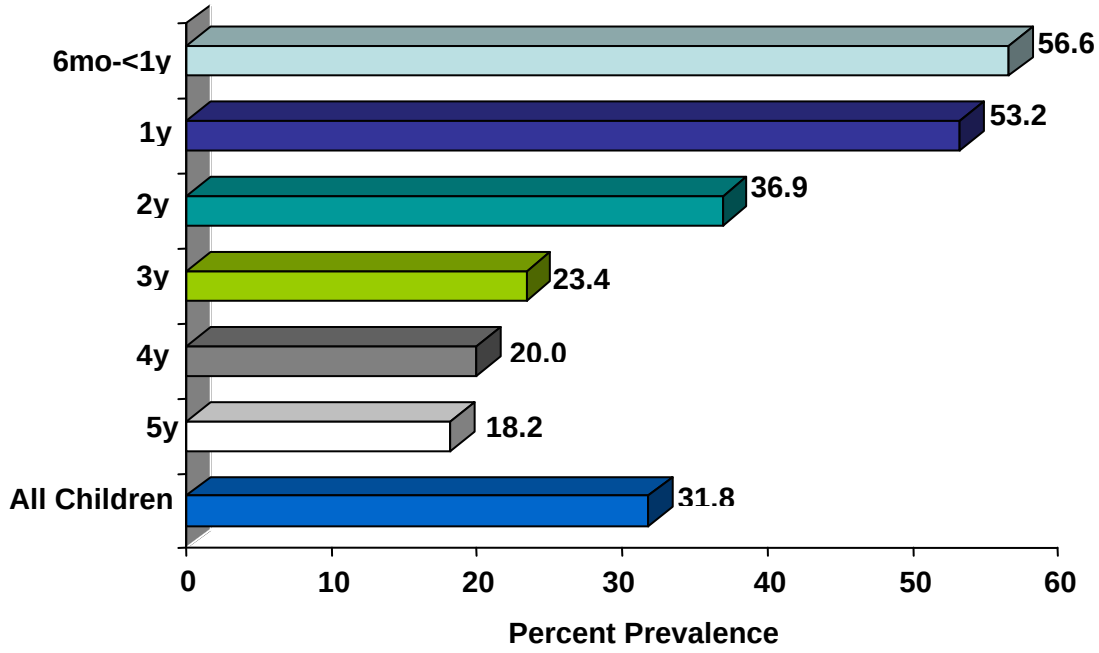
1. At the National Level

- The prevalence of anemia (as an indicator of iron deficiency) for all age groups is 30.6% or 3 in every 10 Filipinos.
- The groups who are most affected are the infants, pregnant and lactating women, and older persons.
- For other population groups, the IDA problem is moderate.
- More females than males are afflicted with IDA, except among the older persons (60+ years) where the reverse is observed.
- Infants, 6 months to less than 1 year, have the highest IDA prevalence rate (56.6%), followed by pregnant women (50.7%), and lactating women (45.7%)
- A declining IDA prevalence with age is observed, from data on the 1 year-old children (53.2%) to the 5 year-old children (18.2%).

Table 43: Prevalence of Iron Deficiency Anemia (IDA) among Specific Population Groups

Age/Physiological State	% Prevalence
Philippines	***30.6***
6 months to < 1 year	56.6
1-5 y	29.6
6 months to 5 years	31.8
6-12 y M	34.8
F	36.5
13-19 y M	26.2
F	33.2
20-39 y M	14.5
F	31.7
40-59 y M	27.7
F	33.3
60+y M	49.1
F	39.2
Pregnant Women	50.7
Lactating Women	45.7

Figure 11: Prevalence of Iron Deficiency Anemia (IDA) among Children, 6 Months to 5 Years Old, by Age



1.1 Trends in the Prevalence of Iron Deficiency Anemia (IDA) among Various Groups, by Age and by Physiological State: 1993, and 1998

- The overall prevalence of IDA is 30.6% in 1998 which is higher than the 1993 rate of 28.9% in all groups except among older persons.

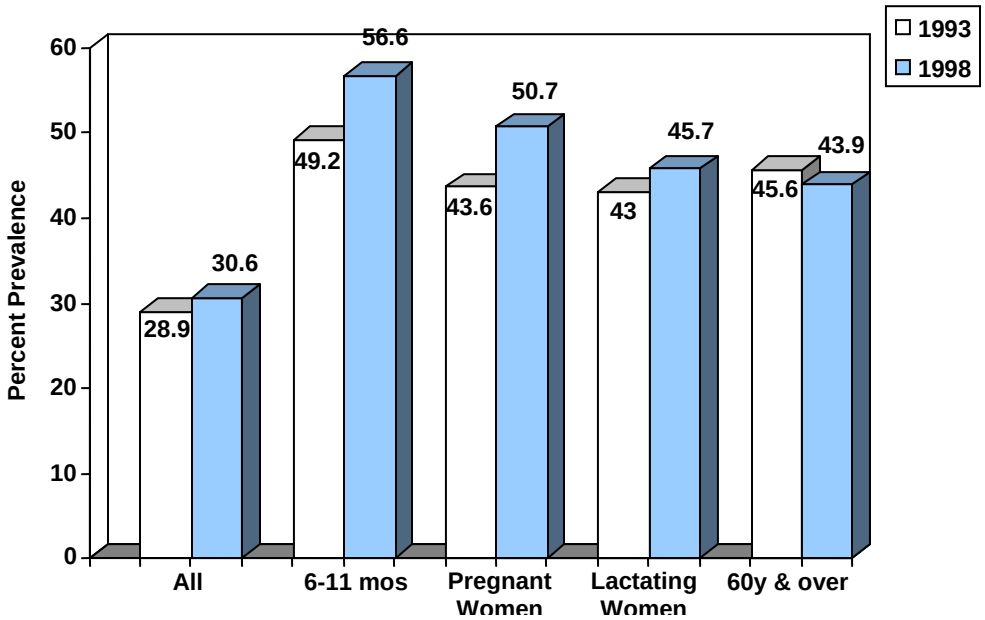
- The prevalence rate of IDA among infants (6-11 months) is higher in 1998 (56.6%) than in 1993 (49.2%).

- The prevalence rate of IDA among pregnant women is higher in 1998 (50.7%) than in 1993 (43.6%).

- Iron deficiency anemia prevalence rate among lactating women is higher in 1998 (45.7%) than in 1993 (43.0%).

- The prevalence rate of anemia among older persons, 60 years old and above, is 43.9% in 1998 which is slightly lower than the rate of 45.6% in 1993.

Figure 12: Comparison in the Prevalence of Iron Deficiency Anemia (IDA) among Various Groups : 1993-1998



2. At the Regional Level

2.1 Children (6 months to 5 years old)

- The prevalence rates of iron deficiency anemia among 6 month – to 5 year-old children range from 19.8% in Northern Mindanao to 50.6% in ARMM.

- The other highly affected regions are Cagayan (48.8%), Eastern Visayas (47.3%), and Western Mindanao (42.4%).

- Children in the other regions have IDA prevalence rates from 20% to 35%.

2.2 Pregnant Women

- Anemia among pregnant women is highly prevalent in 12 out of 16 regions, with Bicol, Eastern Visayas, Cagayan and ARMM having the highest prevalence rates from 60.4% to 64.4%.

- Except for CARAGA, Northern Mindanao, Southern Tagalog, and CAR, the IDA rates in the other regions are greater than 40%.

2.3 Lactating Women

- Cagayan (68.0%) and Western Mindanao (71.9%) have the highest IDA prevalence among lactating mothers.

- Except for Southern Tagalog, Northern Mindanao, Central Mindanao and CARAGA, the iron deficiency anemia prevalence rates are greater than 40% for the rest of the regions.

Table 44: Prevalence of Anemia among Children, 6 Months to 5 Years Old, Pregnant Women and Lactating Women, by Regions

Region	6 Mo-5Y Children	Pregnant Women	Lactating Women
Philippines	***31.8***	***50.7***	***45.7***
I. Ilocos Region	35.5	56.5	41.6
II. Cagayan Valley	48.8	61.6	68.0
III. Central Luzon	30.5	55.0	44.2
IV. Southern Tagalog	20.7	35.8	34.0
V. Bicol	34.3	64.4	47.8
VI. Western Visayas	32.1	54.9	46.5
VII. Central Visayas	28.8	58.0	41.9
VIII. Eastern Visayas	47.3	61.7	59.9
IX. Western Mindanao	42.4	53.9	71.9
X. Northern Mindanao	19.8	33.1	30.9
XI. Southern Mindanao	27.5	49.5	49.4
XII. Central Mindanao	33.8	52.1	30.9
XIII. CARAGA	25.6	32.1	34.0
NCR	31.9	40.8	41.7
CAR	25.4	39.8	44.4
ARMM	50.6	60.4	46.6

3. At the Provincial/City Level

3.1 Infants and Preschool-age Children

- Iron deficiency anemia (IDA) among 1-5 year-old children is highly prevalent in Tawi-Tawi, Western Samar, Quirino, Masbate, and Cagayan.

- Among the HUCs, the prevalence rate of IDA among 6 months to 5 y old children are all below 40%, except in Zamboanga City.

- For the NCR, IDA among 1 to 5 years old children is highly prevalent in Marikina/Pasig, and Quezon City.

- For infants, Quezon City, Makati City, and the Mandaluyong/San Juan, Marikina/Pasig clusters are the high-risk areas.

3.2 Pregnant Women

- Iron deficiency anemia is recorded at 84.2% in Eastern Samar. Other high-risk areas are Quirino, Nueva Vizcaya, Maguindanao, Camarines Sur and Cagayan.

- Among the HUCs, Mandaue City, Zamboanga City and Cagayan de Oro are the high-risk areas.

- In NCR, Marikina/Pasig, Quezon City, Las Pinas/Parañaque, and San Juan/Mandaluyong are the high-risk areas.

3.3 Lactating Women

- A high prevalence rate is noted among the provinces of Eastern Samar Quirino, Zamboanga del Sur, Western Samar, and all the other provinces of Cagayan Valley.

- Of the HUCs, Mandaue, Zamboanga and Bacolod Cities have alarmingly high prevalence of anemia.

- In the NCR, IDA prevalence is high in Marikina/Pasig, Pasay City, Taguig/Muntinlupa/Pateros, and Mandaluyong/San Juan area.

Table 45: Prevalence of Anemia among Children, Pregnant, and Lactating Women, by Region/Province/City

Region/Province/City	Children			Pregnant Women	Lactating Women
	6 mos -<1 yr	1-5 yrs	6 mos-5 yrs		
Philippines	***56.6***	***29.6***	***31.8***	***50.7***	***45.7***
I. Ilocos Region	**54.2**	**33.6**	**35.5**	**56.5**	**41.6**
Ilocos Norte	72.4	38.5	42.4	51.4	19.3
Ilocos Sur	54.0	29.3	31.9	56.0	62.6
La Union	34.5	21.5	22.5	34.3	30.1
Pangasinan	54.2	36.8	38.4	63.8	44.1
II. Cagayan Valley	**79.9**	**45.8**	**48.8**	**61.6**	**68.0**
Batanes	33.3	44.1	43.3	50.0	76.5
Cagayan	84.3	47.9	51.1	70.0	67.3
Isabela	73.1	42.1	44.9	43.0	60.2
Nueva Vizcaya	93.3	46.8	50.7	74.5	78.5
Quirino	71.7	55.4	56.8	81.7	85.3
III. Central Luzon	**55.1**	**28.1**	**30.5**	**55.0**	**44.2**
Bataan	42.2	24.2	25.8	56.2	42.3
Bulacan	67.5	32.7	35.6	56.6	51.2
Nueva Ecija	54.9	20.8	23.9	42.8	42.9
Pampanga	40.6	27.3	28.5	64.6	42.5
Tarlac	63.3	33.7	36.3	54.9	41.0
Zambales	68.6	29.4	33.2	38.9	60.5

WHO (1972) Criteria:

6 mos to 6 yrs old children - 11.0 g/dL
Adult females, non-pregnant - 12.0 g/dL
Adult females, pregnant - 11.0 g/dL

cont… Table 45

Region/Province/City	Children			Pregnant Women	Lactating Women
	6 mos -<1 yr	1-5 yrs	6 mos-5 yrs		
IV. Southern Tagalog	**40.5**	**18.8**	**20.7**	**35.8**	**34.0**
Aurora	52.0	29.6	31.3	58.8	39.4
Batangas	42.4	11.9	14.5	19.8	22.5
Cavite	32.6	14.2	15.9	32.0	25.4
Laguna	37.3	18.1	19.8	32.3	28.9
Marinduque	35.4	15.1	17.0	14.6	49.4
Occidental Mindoro	26.8	18.2	18.9	36.9	39.1
Oriental Mindoro	39.8	20.6	22.0	47.1	12.1
Palawan	59.5	45.1	46.4	52.0	45.5
Quezon	37.2	9.3	12.2	36.7	40.5
Rizal	54.1	34.5	36.1	66.5	48.5
Romblon	54.0	23.9	26.1	53.0	55.3
V. Bicol	**62.6**	**31.9**	**34.3**	**64.4**	**47.8**
Albay	52.0	15.0	18.2	39.9	28.1
Camarines Norte	62.7	40.1	41.7	36.5	64.1
Camarines Sur	70.2	26.3	29.6	73.5	47.4
Catanduanes	63.2	32.5	34.7	59.4	42.4
Masbate	74.1	54.5	56.2	66.9	62.5
Sorsogon	53.4	33.5	34.8	57.2	44.7

WHO (1972) Criteria:

6 mos to 6 yrs old children - 11.0 g/dL
Adult females, non-pregnant - 12.0 g/dL
Adult females, pregnant - 11.0 g/dL

cont… Table 45

Region/Province/City	Children			Pregnant Women	Lactating Women
	6 mos -<1 yr	1-5 yrs	6 mos-5 yrs		
VI. Western Visayas	**57.6**	**29.7**	**32.1**	**54.9**	**46.5**
Aklan	59.4	33.8	36.1	57.3	41.5
Antique	66.2	34.6	37.4	56.7	43.6
Capiz	37.0	20.3	21.7	45.8	64.5
Guimaras	38.9	28.1	29.2	46.9	27.0
Iloilo	77.1	30.2	34.1	48.7	44.9
Negros Occ.	44.8	29.7	30.8	63.4	47.6
Iloilo City	31.2	32.4	32.2	33.5	36.3
Bacolod City	94.3	29.4	38.3	51.6	60.8
VII. Central Visayas	**61.0**	**25.8**	**28.8**	**58.0**	**41.9**
Bohol	48.9	25.9	27.6	66.7	38.7
Cebu	63.7	25.5	28.9	56.8	43.4
Negros Oriental	68.3	24.2	28.1	55.6	40.6
Siquijor	41.0	13.1	15.5	34.7	20.5
Cebu City	56.5	27.6	29.6	48.6	41.5
Mandaue City	57.3	36.0	37.1	76.7	72.7
Toledo City	69.9	35.9	39.3	42.1	40.9
VIII. Eastern Visayas	**84.8**	**43.8**	**47.3**	**61.7**	**59.9**
Biliran	68.6	33.9	36.4	45.0	36.5
Eastern Samar	93.0	47.5	51.5	84.2	88.0
Leyte	80.7	36.3	39.5	48.7	47.2
Northern Samar	89.7	46.8	51.5	56.3	43.5
Southern Leyte	76.4	46.3	49.0	69.2	71.9
Western Samar	87.9	56.3	59.1	63.9	73.8

WHO (1972) Criteria:

6 mos to 6 yrs old children - 11.0 g/dL
Adult females, non-pregnant - 12.0 g/dL
Adult females, pregnant - 11.0 g/dL

cont… Table 45

Region/Province/City	Children			Pregnant Women	Lactating Women
	6 mos -<1 yr	1-5 yrs	6 mos-5 yrs		
IX. Western Mindanao	**67.8**	**40.4**	**42.4**	**53.9**	**71.9**
Zamboanga del Norte	60.5	26.9	29.7	40.3	45.4
Zamboanga del Sur	79.1	45.3	47.3	56.8	80.7
Zamboanga City	60.4	53.8	54.4	74.5	71.0
X. Northern Mindanao	**41.8**	**17.5**	**19.8**	**33.1**	**30.9**
Bukidnon	30.4	23.2	23.9	29.9	30.0
Camiguin	34.0	24.1	24.8	36.5	26.5
Misamis Occidental	50.3	23.2	25.4	35.8	50.5
Misamis Oriental	38.8	7.0	10.0	25.5	17.1
Cagayan de Oro City	71.3	9.8	15.1	61.4	23.9
XI. Southern Mindanao	**54.1**	**25.6**	**27.5**	**49.5**	**49.4**
Compostela Valley	44.2	25.0	25.9	27.7	18.2
Davao City	56.0	23.8	26.2	56.6	55.3
Davao del Norte	47.7	25.4	26.4	53.4	63.0
Davao del Sur	68.8	30.9	33.7	51.2	54.1
Davao Oriental	42.7	19.3	21.4	31.7	33.0
Sarangani	52.3	22.5	25.0	55.2	50.7
South Cotabato	52.0	20.0	21.9	34.2	52.0
Sultan Kudarat	58.4	37.1	38.7	66.6	52.3

WHO (1972) Criteria:

6 mos to 6 yrs old children - 11.0 g/dL
Adult females, non-pregnant - 12.0 g/dL
Adult females, pregnant - 11.0 g/dL

cont… Table 45

Region/Province/City	Children			Pregnant Women	Lactating Women
	6 mos - <1 yr	1-5 yrs	6 mos-5 yrs		
XII. Central Mindanao	**56.2**	**32.1**	**33.8**	**52.1**	**30.9**
Cotabato City	27.3	25.2	25.4	35.3	33.8
Iligan City	48.0	32.3	33.7	46.6	34.0
Lanao del Norte	46.3	23.8	25.1	53.6	41.7
North Cotabato	65.5	36.6	38.6	54.6	25.6
XIII. CARAGA	**49.4**	**23.6**	**25.6**	**32.1**	**34.0**
Agusan del Norte	52.7	20.9	23.5	34.0	27.5
Agusan del Sur	36.6	20.0	21.5	21.7	35.0
Surigao del Norte	67.8	29.8	32.3	32.8	39.5
Surigao del Sur	40.9	21.5	22.8	44.6	30.0
NCR	**43.7**	**30.7**	**31.9**	**40.8**	**41.7**
Manila	37.6	26.6	27.7	33.4	39.9
Quezon City	64.1	40.1	42.4	57.7	47.1
Pasay City	27.6	24.0	24.3	34.8	60.7
Kalookan City	40.1	20.6	21.9	35.5	32.1
Makati City	51.3	31.7	33.7	35.1	30.5
Mandaluyong/San Juan	55.0	35.8	37.4	52.9	52.4
Marikina/Pasig	52.8	55.6	55.3	58.4	68.5
Tagig/Muntilupa/Pateros	35.9	26.7	27.6	28.8	57.0
Las Piñas/Parañaque	43.9	16.1	18.8	53.1	31.4
Malabon/Navotas/Valenzuela	35.5	27.3	28.0	46.0	35.2
CAR	**61.8**	**22.3**	**25.4**	**39.8**	**44.4**
Abra	73.4	24.6	29.1	42.8	29.7
Apayao	62.0	30.0	31.9	45.2	41.4
Benguet	66.4	26.0	29.8	17.5	33.0
Ifugao	45.1	16.9	18.6	46.6	55.9
Kalinga	61.6	35.0	36.4	42.8	56.2
Mountain Province	55.9	7.9	12.3	45.1	39.6
Baguio City	56.8	15.3	18.5	28.6	20.0
ARMM	**78.8**	**48.3**	**50.6**	**60.4**	**46.6**
Maguindanao	71.6	43.0	45.0	74.4	41.7
Sulu	90.6	44.7	48.1	25.9	64.5
Tawi-tawi	96.4	58.8	61.6	60.1	46.6

WHO (1972) Criteria:

6 mos to 6 yrs old children - 11.0 g/dL
Adult females, non-pregnant - 12.0 g/dL
Adult females, pregnant - 11.0 g/dL

C. IODINE DEFICIENCY DISORDERS (IDD)

Is Iodine Deficiency Disorders (IDD) a public health problem in the Philippines? What regions of the country are at-risk to IDD?

Iodine deficiency is the most common cause of "preventable" mental retardation. It also affects mothers' reproductive functions and impedes children's learning ability.

In the Philippines' 5th National Nutrition Survey (1998), the FNRI used urinary iodine excretion (UIE) levels in assessing severity of IDD.

The Joint WHO/UNICEF/ICCND Consultation cut-off points below were used to classify IDD problem into different degrees of public health significance.

Table 46: Epidemiological Criteria for Assessing Severity of IDD in the Population

Median Urinary Iodine Excretion Level (ug/L) Indicator	Severity of Public Health Problem (IDD Prevalence)
< 20	Severe
20 – 49	Moderate
50 – 99	Mild
≥ 100	No deficiency

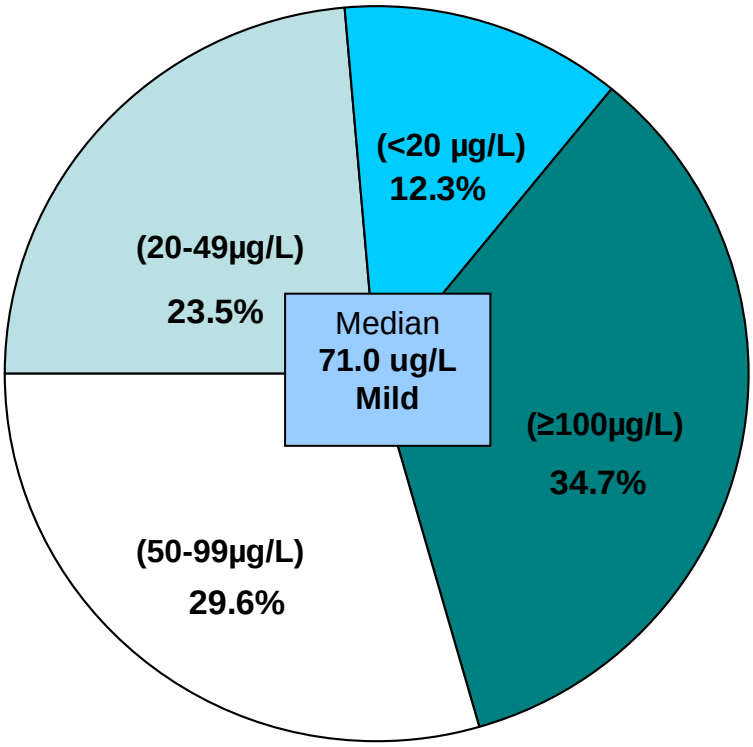
According to the same Consultation, the indicator of iodine deficiency ***"elimination"*** is a median value of iodine concentration of 100 ug/L, i.e. 50% of the samples should be above 100ug/L and not more than 20% of the samples should be below 50 ug/L.

1. At the National Level

- The prevalence of iodine deficiency in the country is mild based on a median UIE excretion level of 71.0 ug/L.

- Only 34.7% of the children have UIE values equal to or greater than 100 ug/L; 35.8% of the children have UIE values below 50ug/L.

Figure 13 : Prevalence of Iodine Deficiency Disorders (IDD) and Percentage Distribution of Urinary Excretion (UIE) Levels among Children, 6 to 12 Years Old



2. At the Regional Level

- Only 2 regions (Central Luzon and ARMM) have median UIE values greater than 100 ug/L. However, IDD cannot be claimed as completely absent in these 2 regions because the proportion of children with UIE levels below or less than 50 ug/L is over 20%.

- Northern Mindanao has moderate IDD with a median UIE of 34 ug/L.

- All the other regions have mild IDD, with median UIE values ranging from 50-99 ug/L.

Table 47: Median Values and Percentage Distribution of Urinary Iodine Excretion (UIE) among Children, 6 to 12 Years Old, by Region

Region	Median UIE ug/L	% Distribution			
		(>100 ug/L)	(50-99 ug/L)	(20-49 ug/L)	(<20 ug/L)
Philippines	***71.0***	***34.7***	***29.6***	***23.5***	***12.3***
I. Ilocos	82.0	42.2	27.1	19.3	11.4
II. Cagayan	83.0	36.1	33.5	24.9	5.6
III. Central Luzon	110.0	55.3	21.3	15.8	7.6
IV. Southern Tagalog	79.0	38.8	30.8	21.2	9.3
V. Bicol	56.0	25.1	32.0	29.9	12.9
VI. Western Visayas	69.0	30.2	31.0	25.1	13.7
VII. Central Visayas	67.0	33.4	31.3	24.0	11.2
VIII. Eastern Visayas	67.0	27.4	36.7	26.8	9.1
IX. Western Mindanao	56.0	20.4	35.0	32.4	12.2
X. Northern Mindanao	34.0	14.7	21.3	31.2	32.7
XI. Southern Mindanao	63.0	31.7	29.2	24.7	14.5
XII. Central Mindanao	58.0	34.5	19.6	24.6	21.3
XIII. CARAGA	56.0	21.0	34.1	27.0	17.9
NCR	94.0	46.2	32.1	14.1	7.6
CAR	63.0	31.5	28.4	23.8	16.3
ARMM	103.0	51.2	23.9	19.2	5.7

3. At the Provincial Level

- 16 provinces/cities have median urinary iodine levels that are greater than 100 ug/L. However, IDD is still considered a public health problem in 4 of these 16 areas, namely: Quirino, Saranggani, Sulu, and Manila, because the proportion of children with UIE levels less than 50 ug/L is more than 20% of the population.

- Fifteen provinces/cities are high-risk IDD areas, having median UIE levels of less than 50 ug/L.

- Provinces in Northern Mindanao have severe and moderate IDD.

Table 48: Proportion of Children, 6 to 12 Years Old, with Urinary Iodine Excretion (UIE) Levels < 50 ug/L among Provinces with Median Values >100ug/L

Province/ City	Region	Median UIE ug/L	% of Children with UIE <50 ug/L
La Union	Ilocos	106	15.0
Quirino	Cagayan Valley	106	28.6
Bulacan	Central Luzon	154	9.7
Nueva Ecija	Central Luzon	115	18.4
Cavite	Southern Tagalog	120	12.2
Laguna	Southern Tagalog	121	19.9
Iloilo City	Western Visayas	161	6.0
Cebu City	Central Visayas	115	8.1
Mandaue City	Central Visayas	120	10.9
Sarangani	Southern Mindanao	132	24.4
Cotabato City	Central Mindanao	116	16.4
Sulu	ARMM	106	26.1
Tawi-Tawi	ARMM	149	6.8
Manila	NCR	104	21.2
Quezon City	NCR	111	13.5
Las Piñas/ Paranaque	NCR	104	16.2

Table 49: Median Values and Proportion (%) of Children, 6-12 Years Old with Urinary Iodine Excretion (UIE) Levels <50ug/L, by Region/ Province/City

Region/Province/City	Median UIE (ug/L)	% of Children with UIE Levels <50 ug/L
Philippines	**71**	**35.8**
I. Ilocos Region	**82**	**30.7**
Ilocos Norte	81	32.6
Ilocos Sur	87	22.3
La Union	106	15.0
Pangasinan	71	35.9
II. Cagayan Valley	**83**	**30.5**
Batanes	45	51.9
Cagayan	78	27.8
Isabela	90	31.9
Nueva Vizcaya	77	35.9
Quirino	106	28.6
III. Central Luzon	**110**	**23.4**
Bataan	70	31.7
Bulacan	154	9.7
Nueva Ecija	115	18.4
Pampanga	89	32.2
Tarlac	98	27.1
Zambales	50	49.3

cont… Table 49

Region/Province/City	Median UIE (ug/L)	% of Children with UIE Levels <50 ug/L
IV. Southern Tagalog	**79**	**30.5**
Aurora	43	56.5
Batangas	71	33.3
Cavite	120	12.2
Laguna	121	19.9
Marinduque	49	50.7
Occidental Mindoro	78	34.6
Oriental Mindoro	54	46.9
Palawan	63	36.9
Quezon	48	30.6
Rizal	59	41.5
Romblon	80	30.6
V. Bicol	**56**	**42.8**
Albay	48	50.1
Camarines Norte	97	29.7
Camarines Sur	50	49.6
Catanduanes	58	45.6
Masbate	75	27.8
Sorsogon	55	41.8
VI. Western Visayas	**69**	**38.8**
Aklan	64	35.6
Antique	41	57.3
Capiz	87	26.9
Guimaras	54	38.0
Iloilo	64	44.3
Negros Occidental	69	39.7
Iloilo City	161	6.0
Bacolod City	92	23.0

cont… Table 49

Region/Province/City	Median UIE (ug/L)	% of Children with UIE Levels <50 ug/L
VII. Central Visayas	**67**	**35.2**
Bohol	48	52.9
Cebu	67	32.7
Negros Oriental	68	30.9
Siquijor	51	49.1
Cebu City	115	8.1
Mandaue City	120	10.9
Toledo City	63	38.5
VIII. Eastern Visayas	**67**	**35.9**
Biliran	41	57.3
Eastern Samar	60	39.1
Leyte	72	35.9
Northern Samar	76	24.2
Southern Leyte	65	36.6
Western Samar	64	37.4
IX. Western Mindanao	**56**	**44.6**
Zamboanga del Norte	44	54.0
Zamboanga del Sur	58	43.9
Zamboanga City	74	23.3
X. Northern Mindanao	**34**	**63.9**
Bukidnon	29	71.7
Camiguin	31	64.5
Misamis Occidental	36	57.2
Misamis Oriental	25	70.8
Cagayan de Oro City	65	41.6

cont… Table 49

Region/Province/City	Median UIE (ug/L)	% of Children with UIE Levels <50 ug/L
XI. Southern Mindanao	**63**	**39.2**
Compostela Valley	56	42.0
Davao City	73	33.6
Davao del Norte	85	22.4
Davao del Sur	59	38.3
Davao Oriental	48	52.9
Sarangani	132	24.4
South Cotabato	51	48.4
Sultan Kudarat	51	45.2
XII. Central Mindanao	**58**	**45.9**
Cotabato City	116	16.4
Lanao del Norte	35	76.4
North Cotabato	83	36.8
Iligan City	61	42.0
XIII. CARAGA	**56**	**44.9**
Agusan del Norte	60	43.6
Agusan del Sur	58	44.0
Surigao del Norte	59	41.2
Surigao del Sur	48	51.6

cont… Table 49

Region/Province/City	Median UIE (ug/L)	% of Children with UIE Levels <50 ug/L
NCR	**94**	**21.7**
Manila	104	21.2
Quezon City	111	13.5
Pasay City	67	41.2
Kalookan City	78	16.1
Makati City	98	17.0
Mandaluyong/San Juan	77	17.6
Marikina/Pasig	75	26.1
Tagig/Muntilupa/Pateros	96	30.3
Las Piñas/Parañaque	104	16.2
Malabon/Navotas/Valenzuela	77	32.1
CAR	**63**	**40.1**
Abra	62	40.3
Apayao	66	45.4
Benguet	56	43.1
Ifugao	52	48.9
Kalinga	63	47.2
Mountain Province	82	29.4
Baguio City	83	23.8
ARMM	**103**	**24.9**
Maguindanao	86	28.7
Sulu	106	26.1
Tawi-Tawi	149	6.8

D. LIPIDS AND GLUCOSE PROFILES

What are cholesterol, triglyceride, and glucose levels of Filipinos? Do their levels of lipids and glucose differ by age and region?

Abnormal amounts of lipids (or fat) and sugar (glucose) in the blood coupled with physical inactivity and obesity (especially fat accumulation around the waist) are significant risk factors to the rapid development of atherosclerosis or hardening of the arteries and premature heart disease.

The 5th NNS of 1998 looked into the prevalence of risk factors to atherosclerosis which include total cholesterol, high-density lipoprotein-cholesterol (HDL-c), low-density lipoprotein-cholesterol (LDL-c), triglyceride, and glucose levels.

In the 5th NNS, adults, 20 years old and over, underwent capillary blood extraction to determine their lipid and glucose profiles.

Table 50: Blood Lipids and Fasting Blood Sugar or Glucose (FBS) Classification

Classification	Total Cholesterol (mg/dL)	LDL-Cholesterol (mg/dL)	HDL-Cholesterol (mg/dL)	Triglycerides (mg/dL)	Fasting Blood Sugar or Glucose (FBS) (mg/dL)
Desirable	< 200	< 130	≥ 60	< 200	< 110
Borderline	200 – 239	130 – 159	35 – 59	200 – 399	110 – 125
High	≤ 240	> 160	-	≥ 400	> 125
Low	-	-	< 35		

WHO Technical Report #727, 1985; NCEP Report, 1998

1. At the National Level

1.1 Total Cholesterol

- Mean total cholesterol of Filipino adults is 159.2 mg/dL, which is within the normal levels for cholesterol.
- The proportion of adults with total cholesterol ≥240 mg/dL is 4.0%.
- Distributing of adults by age reveals that the highest total cholesterol levels are among adults, 40 years old and over.
- The prevalence of hypercholesterolemia peaks at age 40 years.

Table 51: Means and Distribution of Adults to Total Cholesterol Level, by Age

Age Group (years)	Mean Cholesterol (mg/dL)	% Distribution of Adults to Cholesterol Levels		
		<200 mg/dL	200-239 mg/dL	>240 mg/dL
Philippines	***159.2***	***84.1***	***11.9***	***4.0***
20 – 39	153.5	87.9	9.1	3.0
40 - 59	167.9	78.8	15.4	5.8
60 & over	163.5	80.1	15.8	4.1

1.2 High-Density Lipoprotein-cholesterol (HDL-c)

- The mean HDL-c is 30.1 mg/dL.
- Overall, the proportion of adults with high HDL-c (≥60 mg/dL) is 2.6%.
- Majority of the adults (65.4%) have low HDL-c levels (<35 mg/dl).
- Distribution by age group reveals no apparent pattern.

Table 52: Means and Distribution of Adults to High-Density Lipoprotein-cholesterol (HDL-c) Levels, by Age

Age Group (years)	Mean HDL-c (mg/dL)	% Distribution of Adults to HDL-c Levels		
		<35 mg/dL	35-59 mg/dL	>60 mg/dL
Philippines	***30.1***	***65.4***	***32.1***	***2.6***
20 – 39	30.1	66.1	31.4	2.5
40 - 59	29.6	65.2	32.5	2.2
60 & over	31.1	62.5	34.0	3.5

1.3 Low-Density Lipoprotein-cholesterol (LDL-c)

- Mean LDL-c of the adult population is 106.1 mg/dL.
- Adults with high LDL-c (≥190 mg/dL) is 2.0%.
- Distribution of adults to LDL-c levels by age reveals a rising mean LDL-c and an increasing prevalence of elevated LDL-c after age 40 years.

Table 53: Means and Distributed of Adults to Low-Density Lipoprotein-cholesterol (LDL-c) Levels, by Age

Age Group (years)	Mean LDL-c (mg/dL)	% Distribution of Adults to LDL-c Levels			
		<130 mg/dL	130-159 mg/dL	160-189 mg/dL	>190 mg/dL
Philippines	***106.1***	***76.2***	***15.7***	***6.1***	***2.0***
20 – 39	101.4	81.9	12.4	4.0	1.7
40 - 59	113.0	67.8	20.6	9.1	2.5
60 & over	110.6	70.9	18.0	8.8	2.3

1.4 Triglycerides

- Mean triglyceride levels of adult population is 115.6 mg/dL.
- Adults with total triglyceride levels of ≥400 mg/dL is 0.8%.
- Distribution of adults to triglycerides by age reveals that the highest triglyceride levels are in the middle-aged adults (40-59 years).
- The age group 40-59 years shows the highest prevalence of triglyceridemia.

Table 54: Means and Distribution of Adults to Triglyceride Levels, by Age

Age Group (years)	Mean Triglycerides (mg/dL)	% Distribution of Adults to Triglyceride Levels			
		<150 mg/dL	150-199 mg/dL	200-399 mg/dL	>400 mg/dL
Philippines	***115-6***	***81.5***	***9.8***	***7.9***	***0.8***
20 – 39	110.6	83.4	9.0	7.3	0.4
40 - 59	125.8	77.4	11.7	9.4	1.4
60 & over	113.1	83.4	9.1	7.1	0.4

1.5 Glucose

- Mean fasting blood sugar or glucose (FBS) level of Filipinos is 87.9 mg/dL/
- Adults with fasting blood sugar or glucose (FBS) of >125 mg/dL is 3.9%.
- Distribution of adults to glucose levels by age reveals a rising mean fasting blood glucose and an increasing prevalence of hyperglycemia after the age of 40 years.

Table 55: Means and Distribution of Adults to Fasting Blood Sugar or Glucose (FBS) Levels, by Age

Age Group (years)	Mean FBS (mg/dL)	% Distribution of Adults to FBS Levels		
		<110 mg/dL	110-125 mg/dL	>125 mg/dL
Philippines	***87.9***	***93.6***	***2.5***	***3.9***
20 – 39	85.2	95.5	1.9	2.6
40 - 59	91.3	91.4	3.1	5.4
60 & over	91.3	90.6	3.2	6.2

2. At the Regional Level

2.1 Total Cholesterol

- Among the regions, mean total cholesterol ranges from 140.6 mg/dL in CARAGA to 180.4 mg/dL in Central Luzon.
- The proportion of adults with total cholesterol of ≥240 mg/dL ranges from 0.4% in Central Visayas to 9.3% in Ilocos.

Table 56: Means and Distribution of Adults to Total Cholesterol Levels, by Region

Region	Mean FBS (mg/dL)	% Distribution of Adults to FBS Levels		
		<110 mg/dL	110-125 mg/dL	>125 mg/dL
Philippines	***159.2***	***84.1***	***11.9***	***4.0***
I. Ilocos	169.8	79.1	11.5	9.3
II. Cagayan Valley	161.0	83.4	13.7	2.8
III. Central Luzon	180.4	65.9	27.3	6.8
IV. Southern Tagalog	158.5	85.3	9.0	5.7
V. Bicol	161.8	84.1	12.3	3.6
VI. Western Visayas	143.7	92.2	5.5	2.3
VII. Central Visayas	149.9	90.9	8.7	0.4
VIII. Eastern Visayas	153.4	91.5	6.2	2.3
IX. Western Mindanao	142.9	92.7	7.3	0.0
X. Northern Mindanao	152.9	91.8	8.2	0.0
XI. Southern Mindanao	142.0	94.2	3.4	2.4
XII. Central Mindanao	145.8	93.3	6.7	0.0
XIII. CARAGA	140.6	91.5	7.4	1.1
NCR	176.7	77.1	15.5	7.4
CAR	178.1	67.2	24.4	8.4
ARMM	171.8	76.8	17.8	5.4

2.2 High-Density Lipoprotein-cholesterol (HDL-c)

- Among the regions, mean HDL-c ranges from 17.5 mg/dl in CARAGA to 38.8 mg/dL in Cagayan Valley.

- CARAGA has also the highest proportion of adults (99.4%) with low HDL-c (<35 mg/dL) followed by Southern Mindanao (87.6%), Western Mindanao (83.8%).

- The proportion of adults with high HDL-c (≥60 mg/dL) is identical at the level of 0.2% each in Eastern Visayas, Northern Mindanao, Southern Mindanao, and Central Mindanao. The highest proportion of 10.3% is recorded in the NCR.

Table 57: Means and Distribution of Adults to High-Density Lipoprotein-cholesterol (HDL-c) Levels, by Region

Region	Mean HDL-c (mg/dL)	% Distribution of Adults to HDL-c Levels		
		<35 mg/dL	35-39 mg/dL	≥60 mg/dL
Philippines	***30.1***	***65.4***	***32.1***	***2.6***
I. Ilocos	36.4	37.9	57.5	4.6
II. Cagayan Valley	38.8	38.0	58.7	3.3
III. Central Luzon	27.4	71.0	27.2	1.8
IV. Southern Tagalog	30.2	65.3	33.1	1.6
V. Bicol	33.6	56.7	41.3	2.0
VI. Western Visayas	30.1	74.2	23.4	2.4
VII. Central Visayas	32.8	60.2	37.0	2.8
VIII. Eastern Visayas	26.9	71.3	28.5	0.2
IX. Western Mindanao	23.5	83.8	16.2	0.0
X. Northern Mindanao	25.6	74.3	25.4	0.2
XI. Southern Mindanao	22.1	87.6	12.2	0.2
XII. Central Mindanao	26.0	75.9	23.9	0.2
XIII. CARAGA	17.5	99.4	0.6	0.0
NCR	35.8	50.7	39.0	10.3
CAR	36.2	46.2	51.5	2.3
ARMM	29.8	70.5	28.3	1.2

2.3 Low-Density Lipoprotein-cholesterol (LDL-c)

- Among the regions, mean LDL-c ranges from 95.5 mg/dL in Western Visayas to 121.8 mg/dL in Central Luzon.

- The proportion of adults with high LDL-c (≥190 mg/dL) ranges from 0.1% in Northern Mindanao to 6.2% in CAR.

- Two regions, namely Central Visayas and Western Mindanao have zero prevalence of LDL-c (>190 mg/dL).

Table 58: Means and Distribution of Adults to Low-Density Lipoprotein-cholesterol (LDL-c) Levels, by Region

Region	Mean LDL-c (mg/dL)	% Distribution of Adults to LDL-c Levels			
		<130 mg/dL	130-15 mg/dL	160-18 mg/dL	>190 mg/dL
Philippines	***106.1***	***76.2***	***15.7***	***6.1***	***2.0***
I. Ilocos	105.9	77.6	9.4	10.3	2.8
II. Cagayan Valley	101.0	77.4	19.6	1.5	1.5
III. Central Luzon	121.8	65.9	21.1	7.6	5.4
IV. Southern Tagalog	107.2	78.0	12.2	7.8	1.9
V. Bicol	108.4	77.1	16.4	4.6	1.8
VI. Western Visayas	95.5	85.5	10.2	3.3	1.0
VII. Central Visayas	97.1	79.7	15.0	5.2	0.0
VIII. Eastern Visayas	104.4	75.8	18.0	5.3	0.9
IX. Western Mindanao	97.2	87.6	6.5	5.9	0.0
X. Northern Mindanao	105.0	73.8	23.0	3.2	0.1
XI. Southern Mindanao	97.5	81.3	14.4	2.9	1.4
XII. Central Mindanao	97.8	89.1	9.5	0.5	0.9
XIII. CARAGA	101.9	79.9	12.8	6.1	1.1
NCR	115.7	64.8	22.7	9.5	3.0
CAR	117.4	64.0	20.7	9.0	6.2
ARMM	120.2	54.1	33.9	7.6	4.4

2.4 Triglycerides

- Among the regions, mean triglyceride level ranges from 92.6 mg/dL in Western Visayas to 150.4 mg/dL in Central Luzon.

- The proportion of adults with high triglyceride level (≥400 mg/dL) ranges from 0.3% in CAR to 2.9% in Ilocos.

Table 59: Means and Distribution of Adults to Triglyceride Levels, by Region

Region	Mean Triglycerides (mg/dL)	% Distribution of Adults toTriglyceride Levels			
		<150 mg/dL	150-199 mg/dL	200-399 mg/dL	≥400 mg/dL
Philippines	***115.6***	***81.5***	***9.8***	***7.9***	***0.8***
I. Ilocos	136.9	72.1	12.1	12.9	2.9
II. Cagayan Valley	108.8	85.8	7.6	6.1	0.6
III. Central Luzon	150.4	61.9	14.8	22.5	0.8
IV. Southern Tagalog	112.2	83.5	9.7	6.2	0.6
V. Bicol	101.4	87.8	9.3	1.7	1.2
VI. Western Visayas	92.6	91.4	7.5	1.1	0.0
VII. Central Visayas	100.5	90.8	4.2	5.0	0.0
VIII. Eastern Visayas	109.5	84.6	7.8	7.6	0.0
IX. Western Mindanao	118.6	78.8	17.2	4.0	0.0
X. Northern Mindanao	111.2	85.1	7.1	7.9	0.0
XI. Southern Mindanao	111.3	85.4	7.3	6.8	0.5
XII. Central Mindanao	114.5	84.6	6.0	8.0	1.5
XIII. CARAGA	106.2	92.4	4.8	1.9	1.0
NCR	122.0	75.6	15.6	8.4	0.5
CAR	122.3	72.3	16.7	10.2	0.3
ARMM	102.6	84.5	12.8	2.8	0.0

2.5 Glucose

- Among the regions, mean fasting glucose level ranges from 79.6 mg/dL in CARAGA to 97.1 mg/dL in Central Luzon.

- The proportion of adults with high fasting glucose (≥125 mg/dL) ranges from 0.2% in the ARMM region to 7.8% in Central Luzon.

Table 60: Means and Distribution of Adults to Fasting Blood Sugar or Glucose (FBS) Levels, by Region

Region	Mean FBS (mg/dL)	% Distribution of Adults to FBS Levels		
		<110 mg/dL	110-125 mg/dL	>125 mg/dL
Philippines	***87.9***	***93.6***	***2.5***	***3.9***
I. Ilocos	88.0	92.4	2.6	4.9
II. Cagayan Valley	81.6	96.8	2.2	1.0
III. Central Luzon	97.1	90.0	2.2	7.8
IV. Southern Tagalog	90.8	88.5	4.8	6.6
V. Bicol	91.1	94.6	3.1	2.3
VI. Western Visayas	85.1	96.2	2.4	1.4
VII. Central Visayas	87.1	95.7	1.0	3.3
VIII. Eastern Visayas	85.7	96.3	1.9	1.8
IX. Western Mindanao	81.0	97.1	1.5	1.4
X. Northern Mindanao	80.0	97.3	0.9	1.8
XI. Southern Mindanao	84.3	95.9	1.2	2.9
XII. Central Mindanao	80.5	95.2	2.7	2.1
XIII. CARAGA	79.6	97.7	0.2	2.1
NCR	93.7	90.1	3.9	6.0
CAR	86.9	94.5	2.4	3.1
ARMM	82.0	98.3	1.4	0.2

Part IV. Clinical Facts and Figures

A. HYPERTENSION

Are Filipinos hypertensive? What is the prevalence of hypertension in the Philippines?

In common terms, hypertension (HPN) is high blood pressure (BP). Sometimes, it is confused with stress, but hypertension is an internal, while stress is an external condition.

"High" blood pressure is defined as a condition where sustained systolic pressure is above 140 mmHg and/or diastolic pressure is above 90 mmHg. It is classified according to stage of severity.

The 1998 5th NNS of the FNRI-DOST employed the following assessment criteria for hypertension among adults 20 years old and over, using a conventional mercury sphygmomanometer.

Table 61 : Assessment Criteria for Blood Pressure (BP) Classification

Classification	Systolic BP (mmHg)	Diastolic BP (mmHg)
Normal	<130	<85
High Normal	130-139	85-89
Hypertensive		
Mildly	140-159	90-99
Moderately	160-179	100-109
Severely	180-209	110-119
Very Severely	≥210	≥120

Joint Nat. Com. on Detection Evaluation and Treatment of High Blood Pressure (JNC V)

1. At the National Level

- The prevalence of hypertension is 21.0%.
- Two in every 10 Filipino Adults, 20 years and over, are hypertensive.
- The distribution of adults to blood pressure level and HPN classification, by age, reveals a rising mean blood pressure and increasing prevalence of hypertension after age 40 years.

Table 62 : Distribution of Adults to Blood Pressure (BP) Levels and Hypertension (HPN) Classification, by Age

Age Group (years)	% Distribution of Adults to Blood Pressure Levels						
	Normal	High Normal	Hyper-tensive	Stage 1 Mild	Stage 2 Moderate	Stage 3 Severe	Stage 4 Very Severe
Philippines	***66.5***	***12.6***	***21.0***	***14.0***	***4.3***	***2.1***	***0.6***
20 – 39	77.5	11.1	11.3	9.5	1.2	0.4	0.2
40 - 59	57.5	13.4	29.0	18.1	6.6	3.4	0.9
60 & over	38.8	16.8	44.3	24.4	12.1	6.4	1.4

- Mean systolic and diastolic blood pressure rises as age increases.

Table 63 : Mean Systolic and Diastolic Blood Pressure (BP) of Adults, by Age

Age Group (years)	Mean Systolic BP (mmHg)	Mean Diastolic BP (mmHg)
Philippines	***118.7***	***77.9***
20 – 39	112.2	75.4
40 - 59	123.2	80.9
60 & over	136.7	81.3

1.1 Trends in the Prevalence of Hypertension: 1993 and 1998

- There is not much difference in the prevalence of hypertension among adults between the 1993 and 1998 survey periods.

- The same holds true for the mean systolic and diastolic blood pressure levels.

Table 64 : Comparison in the Prevalence of Hypertension (HPN) :

Year	% Prevalence of HPN	
	Normal	Hypertensive
1993	78.0	22.0
1998	79.0	21.0

Table 65 : Comparison in the Mean Systolic and Diastolic Blood Pressure (BP): 1993 and 1998

Year	Systolic BP (mm Hg)	Diastolic BP (mm Hg)
1993	118.9	77.6
1998	118.7	77.9

2. At the Regional Level

- Among the regions, the proportion of adults with high blood pressure is lowest in Central Mindanao at 8.1% and highest in Ilocos at 46.9%.

Table 66 : Percentage Distribution of Adults to Blood Pressure (BP) Levels and Hypertension (HPN) Classification, by Region

Region	% Distribution of Adults to Blood Pressure Levels						
	Normal	High Normal	Hypertensive				
			Mild	Moderate	Severe	Very Severe	Total
Philippines	***66.5***	***12.6***	***14.0***	***4.3***	***2.1***	***0.6***	***21.0***
I. Ilocos	44.9	8.2	41	4.5	0.9	0.5	49.6
II. Cagayan Valley	69.1	9.7	14.6	4.4	1.2	1.0	21.2
III. Central Luzon	59.4	11.0	15.4	9.1	4.6	0.5	29.6
IV. Southern Tagalog	73.2	11.0	10.6	2.9	2.0	0.3	15.8
V. Bicol	66.4	12.5	14.9	2.7	2.6	0.9	21.1
VI. Western Visayas	69.6	12.7	11.6	2.9	2.4	0.8	17.7
VII. Central Visayas	68.8	14.1	8.3	4.2	4.1	0.5	17.1
VIII. Eastern Visayas	65.0	10.4	18.4	4.2	1.8	0.2	24.6
IX. Western Mindanao	70.6	15.1	11.8	1.5	0.8	0.2	14.3
X. Northern Mindanao	73.9	13.2	8.5	2.4	1.9	0.1	12.9
XI. Southern Mindanao	72.7	10.8	11.3	4.1	0.8	0.3	16.5
XII. Central Mindanao	85.6	6.3	2.9	4.8	0.2	0.2	8.1
XIII. CARAGA	78.5	9.6	5.6	3.2	0.9	2.2	11.9
NCR	49.2	25.8	16.9	6.1	1.6	0.4	25.0
CAR	64.0	14.7	16.3	3.8	1.0	0.2	21.3
ARMM	78.9	12.0	6.6	1.6	0.9	-	9.1

- Mean systolic blood pressure ranges from 115.0 mmHg in Northern Mindanao to 123.8 mmHg in Central Luzon which are within normal values.

- Mean diastolic blood pressure ranges from 73.7 mmHg in CARAGA region to 82.0 mmHg in Ilocos, which again are within normal values.

Table 67 : Mean Systolic and Diastolic Blood Pressure (BP), by Region

Region	Mean Systolic BP (mmHg)	Mean Diastolic BP (mmHg)
Philippines	***118.7***	***77.9***
I. Ilocos	120.6	82.0
II. Cagayan Valley	121.4	76.3
III. Central Luzon	123.8	80.7
IV. Southern Tagalog	115.6	75.8
V. Bicol	120.0	78.3
VI. Western Visayas	119.4	77.1
VII. Central Visayas	118.5	77.0
VIII. Eastern Visayas	119.9	78.5
IX. Western Mindanao	115.8	75.3
X. Northern Mindanao	115.0	76.9
XI. Southern Mindanao	115.1	76.7
XII. Central Mindanao	116.2	77.1
XIII. CARAGA	116.0	73.7
NCR	120.7	81.6
CAR	120.0	78.8
ARMM	115.1	75.8

B. GOITER

What is the goiter prevalence in the country? Who are the groups most affected? Do sex, age, and physiological state affect goiter prevalence?

Clinical assessment on goiter was done by the FNRI-DOST in the 4th NNS in 1993 on all household members, 7 years old and over.

In goiter examination, the neck of each subject is inspected in normal and extended positions, after which he/she is requested to swallow. The thyroid gland is then observed for any ascending movement of a mass. Enlargement of the thyroid gland is determined by careful palpation and interpreted using the ICCIDD/WHO classification below.

Table 68: ICCIDD/WHO Classification of Goiter

Grade	Description
0	No goiter
1A	Thyroid lobes larger than the ends of the thumbs
1B	Thyroid enlarged, visible only with head tilted back
2	Thyroid enlarged, visible with head in normal position
3	Thyroid enlarged, easily visible from a distance of 10 meters

1. At the National Level

- Goiter of all grades is observed in 6.7% of the subjects, 7 years old and over, with the highest prevalence being found among pregnant females, 13-20 years old.

- Prevalence of goiter in females of all age groups is higher than in males.

Table 69: Prevalence of Goiter among Filipinos, 7 Years Old and Over, by Sex, by Age, and by Physiological State

Age, Sex and Physiological State	Percent Prevalence of Goiter										
	Grade 0	Total with Goiter		Grade 1A		Grade 1B		Grade 2		Grade 3	
		Nodular	Diffuse	Nodular	Diffuse	Nodular	Diffuse	Nodular	Diffuse	Nodular	Diffuse
Male											
7-14 yrs	99.4	0.1	0.5	0.0	0.4	0.1	0.1	0.0	0.0	0.0	0.0
15-20 yrs	96.9	3.0	3.1	0.0	1.7	0.0	1.2	0.0	0.1	0.0	0.1
20 & over	98.6	0.4	1.1	0.2	0.6	0.1	0.3	0.1	0.2	0.0	0.0
Female											
7-14 yrs	95.2	0.1	4.7	0.1	2.6	0.0	1.1	0.0	0.9	0.0	0.1
15-20 yrs	83.5	0.9	15.6	0.6	8.0	0.1	5.7	0.2	1.8	0.0	0.1
21 & over	86.7	1.8	11.5	0.4	5.2	0.6	4.0	0.5	2.0	0.3	0.3
Pregnant Women											
13-20 yrs	72.6	0.0	27.4	0.0	20.2	0.0	4.8	0.0	2.4	0.0	0.0
21-49 yrs	77.1	2.1	20.7	0.4	8.9	0.7	7.7	0.7	3.8	0.3	0.3
Lactating Women											
13-20 yrs	77.6	0.0	22.3	0.0	10.4	0.0	11.9	0.0	0.0	0.0	0.0
21-49 yrs	82.8	2.2	15.0	2.2	6.5	1.0	6.0	0.6	2.5	0.4	0.0
All	***93.2***	***0.7***	***6.0***	***0.2***	***2.9***	***0.2***	***2.0***	***0.2***	***1.0***	***0.1***	***0.1***

1.1 Trends in the Goiter Prevalence: 1987 and 1993

- The prevalence of goiter among Filipinos, 7 years old and over, is significantly higher in 1993 than in 1987.

Table 70: Comparison in the Goiter Prevalence among Filipinos, 7 Years Old Over, by Age, by Sex, and by Physiological State: 1987 and 1993

Age, Sex and Physiological State	Total with No Goiter		Total with Goiter		% Prevalence of Goiter							
					Grade 1A		Grade 1B		Grade 2		Grade 3	
	1987	1993	1987	1993	1987	1993	1987	1993	1987	1993	1987	1993
Male												
7-14 yrs	99.2	99.4	0.8	0.6	0.4	0.4	0.4	0.2	-	-	-	-
15-20 yrs	99.7	96.9	0.2	3.1	0.3	1.7	-	1.2	-	0.1	-	0.1
20 & over	99.3	98.6	0.7	1.5	0.1	0.8	0.2	0.4	0.1	0.3	0.3	-
Female												
7-14 yrs	93.6	95.2	6.4	4.8	1.8	2.7	1.8	1.1	1.4	0.9	1.4	0.1
15-20 yrs	93.8	83.5	6.2	16.5	2.2	8.6	2.4	5.8	0.4	2.0	2.0	0.1
21 & over	92.9	86.7	7.1	13.3	2.2	5.6	2.1	4.6	1.0	2.5	2.1	0.6
Pregnant Women												
13-20 yrs	82.4	72.6	17.6	27.4	-	20.2	7.8	4.8	3.9	2.4	5.9	-
21-49 yrs	87.6	77.1	12.4	22.8	4.4	9.3	3.6	8.4	1.8	4.5	2.7	0.6
Lactating Women												
13-20 yrs	94.4	77.6	5.6	22.3	-	10.4	5.6	11.9	-	0.0	-	-
21-49 yrs	89.3	82.8	10.7	17.2	2.7	6.7	2.7	7.0	1.7	3.1	3.6	0.4
All	***96.4***	***93.2***	***3.5***	***6.7***	***1.1***	***3.1***	***1.1***	***2.2***	***0.5***	***1.2***	***0.9***	***0.2***

2. At the Regional Level

- Among the regions, the prevalence of goiter among Filipinos, 7 years and over, is highest in Bicol (12%), followed by Eastern Visayas (11.4%), Metro Manila (9.7%), and Cagayan Valley (8.5%).

Table 71 : Prevalence of Goiter among Filipinos, 7 Years Old and Over, by Region

Region	Percent Prevalence of Goiter										
	Grade 0	Total with Goiter		Grade 1A		Grade 1B		Grade 2		Grade 3	
		Nodular	Diffuse	Nodular	Diffuse	Nodular	Diffuse	Nodular	Diffuse	Nodular	Diffuse
Philippines	***93.2***	***0.7***	***6.0***	***0.2***	***2.9***	***0.2***	***2.0***	***0.2***	***1.0***	***0.1***	***0.1***
I. Ilocos	93.6	0.7	5.6	0.2	2.9	0.3	1.6	0.2	1.0	0	0.1
II. Cagayan Valley	91.4	0.2	8.3	0	2.7	0.1	2.0	0.1	3.5	0	0.1
III. Central Luzon	94.5	0.8	4.6	0.4	1.8	0.1	1.4	0.3	1.2	0	0.2
IV. Southern Tagalog	91.7	1.5	6.8	0.8	2.1	0.6	3.7	0.1	1.0	0	0
V. Bicol	88.0	0.8	11.2	0.2	8.5	0.1	1.7	0.1	1.0	0.4	0
VI. Western Visayas	94.7	0.8	4.4	0.2	2.2	0.3	1.6	0.2	0.5	0.1	0.1
VII. Central Visayas	98.1	0.6	1.4	0	0.8	0.1	0.5	0.2	0.1	0.3	0
VIII. Eastern Visayas	88.6	0.1	11.3	0	5.5	0	4.1	0.1	1.4	0	0.3
IX. Western Mindanao	97.1	0	3.0	0	1.3	0	0.9	0	0.8	0	0
X. Northern Mindanao	92.0	0.5	7.5	0	4.6	0.2	0.8	0.1	1.6	0.2	0.5
XI. Southern Mindanao	96.7	0.2	3.2	0	1.1	0	1.6	0.1	0.3	0.1	0.2
XII.Central Mindanao	95.3	0.4	4.3	0	2.9	0	1.2	0.2	0.2	0.2	0
NCR	90.2	1.1	8.6	0.3	4.0	0.2	3.6	0.5	0.9	0.1	0.1
CAR	91.5	3.7	4.7	0.5	2.1	1.6	1.6	1.6	0.5	0	0.5
ARMM	94.1	0	6.0	0	5.0	0	1.0	0	0	0	0

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