Palestinian Central Bureau of Statistics

Nutrition Survey – 2002

User's Guide

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Warning

Definitions and Explanations

Age: The completed age in years of the enumerated person, which is the difference between the date of birth and the survey reference period. The exact age is the time elapsed between the day of birth and a given day, including parts of a year.

Age Heaping: A general tendency to misreport a preferred number as one's age or to round one's age to a number ending with the digits 0 or 5, or, as a multiple of 6 or 12 months for children. This type of age misreporting results in false concentration of persons at particular ages or in particular age groups.

Anemia: Anemia by definition is an abnormal decrease in the body's total red blood cell mass. There are several clinical and hematological indicators used to detect anemia, the most common being serum hemoglobin (Hb). Hemoglobin, a primary component of red blood cells, transports oxygen to tissues of the body and removes carbon dioxide. The production of hemoglobin is dependent on iron, if hemoglobin falls below defined levels based on age and gender, an individual is considered anemic. Therefore, one of the primary causes of anemia is iron deficiency.

Iron deficiency anemia is the most prevalent of all micronutrient deficiencies, affecting one third of the population worldwide (UNICEF, WHO, 1999). Iron deficiency anemia develops when there is an inadequate intake of bioavailable dietary iron. Infants, children, and pregnant and lactating women are the population groups most vulnerable due to their increased dietary requirements for growth and reproduction.
The functional consequences of iron deficiency are reduced tolerance to exercise, growth retardation, and impaired mental development.

Anthropometry: The technique that deals with the measurement of size weights and proportions of the human body. The anthropometric measurements described here are standing height, recumbent length and weight, in relation to the age and sex of the child and in accordance with the guidelines developed by the CDC and recommended by the WHO.

Assistant Measurer: An enumerator who assists the measurer by helping to hold the child in place during the measurement proceeding and records the measurements on a questionnaire. An untrained assistant such as the mother can be used to help hold the child. If so, then the measurer measures the child also records the measurement.

Birth Weight: The first weight for the newborn obtained after birth.

Breast Feeding: The child has received breast milk (direct from the breast or expressed).

Cell: The smallest geographical unit in which fieldwork is carried out. Cells

boundaries must be clear and easy to recognize in the field. Geographic markers such as road streets are usually used as cell's boundaries.

Complementary Feeding: The child has received both breast milk and solid / semi-solid i.e. juice, formula, etc.

Continue Breastfeeding Rate (CBFR): The proportion of children aged (9-12) months who are being breastfed.

Degrees of malnutrition: **Severe malnutrition**: below –3 z scores
Moderate malnutrition: more than –3 z scores to – 2 z scores

Disease: A disorder or impairment of the normal state of well-being.

Dwelling Unit: A room or number of rooms occupied or vacant and are used as a separate dwelling, providing that there is either
1. Direct entrance from the outside or through a hall, or
2. Complete kitchen facilities used only by the unit's inhabitants regardless of whether they use them or not.

Family Household: Consists of household members who are related to each other by blood, marriage, or adoption.

Growth Charts: The normal growth of children in a given population can be determined by following a group of healthy children from birth to a certain age or by doing a cross sectional survey of healthy children at all ages.
In the USA data has been assembled by the National Center for Health Statistics (NCHS) that met the criteria for a reference population. Since it was found that children living under optimal conditions in different developing countries have similar growth pattern resembling those of the NCHS data, the WHO have since encouraged the use of the NCHS charts by all countries.
Abnormal anthropometry is statistically defined as a value below –2SD or Z score (2.3rd percentile), or above +2SD or Z score s (97.7th percentile) relative to the reference mean or median. These cut off points define the central 95% as the normality range. These measures are used as a guide to facilitate screening or monitoring of growth.

Head of Household: The person who usually lives with the household and is recognized as head of household by its other members. Often he/she is the main decision-maker or responsible for financial support and welfare of the household at the time the survey is conducted.

Health Care Provider: An individual whose responsibility involves one or more of the following: the provision, administration, teaching, and development of health services, activities, or supplies. The provider may have direct or indirect interest in health industry.

Health Status: The state of health (often in a broad sense) of specified individual, group, or population.

Height: Height of the child measured in centimeters as:

1. Recumbent Length: distance from the crown of the head to the sole while the child is measured lying supine (for children less than two years of age).
2. Standing Height: distance from the crown of the head to the sole while the child is measured standing (for children more than two years of age).

High Birth Weight: Weight of newborn of more than 4 kgs.

Height for Age: reflects achieved linear growth and it's deficits indicate long term cumulative inadequacies of health or nutrition. Two related terms are used, length and stature. Length is the measurement of recumbent position and is used for children under 2 years. Standing height is referred to stature. For simplification, the term height is used for both measurements. Low height for age, below –2SD of the NCHS/WHO reference, ranges from 5 to 65% among less developed countries. In low prevalence countries, it is most likely due to normal variation, shortness; in less developed countries it is likely to be due to a pathological process, stunting. A pathological process can be a past event or a long-term continuous process. High height for age or tallness is of little public health significance although in developed countries it might be caused by a rare endocrine disorder.

High Measuring Board: A measuring board that can be used to measure either standing height or recumbent length, to the nearest 1.0 cm.

Hospital: An institution whose primary function is to provide services (diagnostic and therapeutic) for variety of medical conditions, both surgical and non-surgical. Most hospitals also provide some outpatient services, particularly emergency care.

Household Membership: Persons staying in the dwelling unit at the time of an interview are considered members of the household if (1) the dwelling unit is their usual or only place of residence, or (2) a place of residence is maintained for them here and elsewhere, but they spend most of their time in this residence.

Household: One person or group of persons with or without a family relationship who live in the same dwelling unit, who share meals and make joint provisions for food and other essentials of living.

Live Birth: A birth is considered alive if the newborn has shouted, cried, or shown any characteristics of life upon birth.

Low Birth Weight: Weight of a newborn of less than 2.5 kg.

Malnutrition: The term malnutrition is used to cover a multiplicity of disorders, ranging from deficiencies of specific micronutrients, such as vitamins and minerals to gross starvation or (at the other extreme) obesity. This discussion is largely limited to protein and calorie malnutrition, which is manifested primarily by retardation of physical growth in terms of height and weight.

Marital Status: The status of those 12 years and over in terms of marriage traditions

and laws in the country. It might be one of the following:

Single: The individual 12 years and over who did not actually marry according to the existing norms and traditions.
Married: The individual 12 years and over who is actually married according to the existing norms regardless of whether he/she is living with a spouse, at the time of the interview or not.
Divorced: The individual 12 years and over who was married but his/her marriage was revoked by a legally registered divorce, and he/she did not marry again.
Widower: The individual 12 years and over who was married, but his/her marriage was revoked because of the death of his/her partner, and he/she did not marry again.
Separated: The individual 12 years old and over who was married, but his/her marriage was revoked for some reason without any legal or official registration, and he/she did not marry again.

Measurer: A trained enumerator who actually measures the height and weight of children.

Median Age: The age that divides a population into two numerically equal groups: that is, half of the people are younger than this age and half are older.

Mild anemia: It corresponds to the level of hemoglobin concentration of 10-10.9 g/dl for children, and 10-10.9g/dl for pregnant women, and 10-11.9g/dl for not pregnant women.

Moderate anemia: It is corresponds to the level of hemoglobin concentration of 7-9.9 g/dl for children and pregnant and non-pregnant women.

Normal Birth Weight: Weight of the newborn between 3.0-3.5 kgs for males and 2.8-3.2 kgs for females.

Nutritional Status: It measures and allows us to describe the current status of the child, both in terms of immediate acute factors such as inadequate current intake of food, childhood diseases and diarrhea leading to wasting, as well as accumulated impact of chronic deprivation leading to stunting.

Occupation: Refers to the kind of work done by the employed persons, irrespective of their training or education. Thus, the occupation refers to the tasks carried out by a person. If the person had more than one occupation, the one in which he/she spent most of his/her time was accepted as his/her occupation.

Pilot Survey: Duplication of the final proposed survey design on a small scale from beginning to end.

Place of Residence: Places of residence are divided into Urban, Camps, and Rural. Population outside municipal boundaries and camps are considered rural population.

Premature delivery (Pre-term delivery): Infants born earlier than 37 weeks of gestation are defined as premature.

Reference Date:	The date referred to in calculating the vital rates and ages. In this survey, it is 01/03/2002.
Safe Drinking Water:	Water piped into the dwelling or yard, a public tap, a tube, a well or borehole with pump, a protected well or spring, or rainwater.
Sever anemia:	It corresponds to the level of hemoglobin concentration of less than 7 g/dl for children and women either pregnant or not.
Skilled Health Personnel:	Include doctors, nurses, and midwives, community health workers, health educator, etc.
Standard Weight for Age:	The average weight of children from standard population in a given age group.
Supplementary Feeding:	Any liquid (including milk) or solid food given while the child is still receiving breast milk.
Vitamin A:	One of the most useful clues to high prevalence of retinal deficiency is the use of a local word for night blindness indicating the effect of retinal deficiency on the retina.
Weight:	Measurement of a child's total body mass underside.
Weight for Height:	reflect body weight to height. Its use carries the advantage of requiring no knowledge of age. However it is not a substitute for the other indicators. Low weight for height is called thinness if normal or wasting if pathological and can reflect a recent or a chronic condition. Prevalence in non-disaster areas is around 5%. Lack of evidence of wasting in a population does not imply the absence of current nutritional problems. Results. High weight for height is the preferred term to describe overweight, which has a strong correlation with obesity. Although the latter is measured by adiposity, for example skin fold thickness.
Weight-For-Age: (Under Weight)	is influenced by both height and weight of the child. It reflects the long and short-term health of the individual or population. Lightness and underweight have been used to describe normal and pathological processes. High weight for age is not used to describe obesity.
Z - scores:	Deviation of standard values of height and weight of the surveyed population compared to the reference population

Survey Questionnaire:

The Palestinian Central Bureau of Statistics developed the questionnaire after revision and adaptation of the following standard questionnaires:
1. The Health Survey-2000 questionnaire, which was implemented by the Palestinian Central Bureau of Statistics in 2000.
2. UNICEF questionnaire for Multiple Indicator Cluster Survey (MICS II).
3. Standard Demographic and Health survey questionnaire.
4. Other Demographic and Health Survey questionnaire (DHS).

The Nutrition Survey-2002 questionnaire consist of five main parts:

1. **Household questionnaire:** which includes the following sections:
   - Control Sheet: items related to quality control sample identification, interview schedule, and interview results.

   - Household Roster: demographic variables such as age, sex, relation to head of household, date of birth, and health variables such as health insurance.

2. **Housing questionnaire:** includes questions on housing conditions, such as water sanitation source of disposals, number of rooms, main source of income, in addition to difficulties faced families when obtaining food during the Intifada, food modules, and securing food.

3. **Women's Health questionnaire:** This questionnaire is designed to collect data about women aged 15-49 years; it consists of the following sections:
   - Hb measurements: Including Hb level in the blood, pregnancy status for women, number of pregnancies during women reproductive life, and iron tablets supplementation.

   - Mother: Nutritional behavior, knowledge of anemia causes and prevention, access to health services, and impact of Israeli measures on children's nutritional status.

4. **Child Health Questionnaire:** This questionnaire includes, Breastfeeding status, prevalence of chronic diseases among children, vitamins supplementation, complementary feeding, child weight at birth, and nutritional behavior during first years of child age.

5. **Anthropometric measurements and Hb level for children aged 6-59 months:** Includes questions on height and weight for children and an Hb test for them.

   - **Prefix and meaning:**

Prefix	Meaning
PSU	Primary Sampling Unit
EA	Enumeration Area
HH	Household
D.K.	Do not Know
CDC	Classification of Disease Center
SD	Standard Deviation
HB	Hemoglobin
UNICEF	United Nations Children's fund
UNRWA	United Nation Relief and Work Agency
WHO	World Health Organization
MICS	Multiple Indicators Children Survey
DHS	Demographic Health Survey

Target Population:

The target population consists of all Palestinian households that usually reside in the Palestinian Territory. This type of survey concentrates on nutritional status for children aged 6-59 months.

Sample Size:

Different criteria were taken into account when sample size was determined. The level of sampling error for the main indicators was considered, the result could be published at 3 subpopulations, and 10% incomplete questionnaire was assumed.

The overall sample was 225 EAs, 133 in the West Bank and 92 in Gaza Strip. The Sample cells were increased to 234 cells, 142 in West Bank and 92 in Gaza Strip.

The number of households in the sample was 5,228 households, including 2,994 in the West Bank and 2,334 in Gaza Strip.

Weights and Estimations Procedure:

Calculations of estimates from the Nutrition Survey require the use of weights because of the varying inclusion probabilities that the sample design entails. The weights for a given households simply is the inverse of its inclusion probability. This yields the so-called expansion weight, which will expand the sample to the total population. The weights used are the same for households, household members, women and children, since the sample design required that all such lower level units pertaining to a household were selected during enumeration. To make the weighing procedure feasible and simple, we assumed that the households have been selected directly within the EA.

Calculation of Variances:

It is very important to calculate standard errors for the main survey estimates so that the user can have an idea of their reliability or precision.

The variance calculation uses the method of ultimate clusters. Within any domain of estimation, for a sub-population A, and for a characteristic Y, the formulas are:
(a) The variance of an estimator of a total is estimated by:

$$V\left(\hat{R}_A\right) = \frac{1}{\hat{X}_A^{\,2}}\left[V\left(\hat{Y}_A\right) + \hat{R}_A^{\,2}\,V\left(\hat{X}_A\right) - 2\,\hat{R}_A\;COV\left(\hat{X}_A,\hat{Y}_A\right)\right]$$

Where,

$$\mathrm{cov}\left(\hat{X}_A,\hat{Y}_A\right) = \sum_{h=1}^{H}\frac{n_h}{n_h-1}\sum_{i=1}^{n_h}\left(\hat{X}_{Ahi}-\frac{\hat{X}_{Ah}}{n_h}\right)\left(\hat{Y}_{Ahi}-\frac{\hat{Y}_{Ah}}{n_h}\right)$$

$$\hat{Y}_{Ahi} = \sum_{j\in A} W_{hij}\,Y_{hij}$$

$$\hat{Y}_{Ah} = \sum_{i}\sum_{j\in A} W_{hij}\,Y_{hij}$$

$$\hat{X}_{Ahi} = \sum_{j\in A} w'_{hij}\mathrm{x}_{hij}$$

$$\hat{X}_{Ah} = \sum_{i}\sum_{j\in A} w'_{hij}\mathrm{x}_{hij}$$

$$v(\hat{Y}_A) = cov(\hat{Y}_A,\hat{Y}_A)$$

$$v(\hat{X}_A) = cov(\hat{X}_A,\hat{X}_A)$$

Reference Period:
The date referred to in calculating the vital rates and ages. In this survey, it is 01/03/2002.

Data Collection:

The Fieldwork Directorate at PCBS screened all available female applicants, designed a scale to rank applicants using objective criteria. Subsequently, 51 interviewers and 24 supervisors and editors were selected to work in the West Bank and Gaza Strip.

Due to Israeli closure of the Palestinian Territory, the main training was conducted at each governorate separately using videotapes. A 12-day intensive training course for 128 trainees was performed, (74 in the West Bank and 54 in Gaza Strip).

Due to the strict Israeli closure and occupation of many places within the Palestinian Territory, data collection did not start in the same designated date in all Governorates. Also, because of the Israeli incursion into various Governorates within the West Bank, data collection was stopped during April 2002.

Main fieldwork started in the central West Bank and Gaza Strip in March 25 th, 2002 and was completed in all governorates on June 301st 2002.

Thirteen fieldwork teams in the West Bank and Gaza Strip undertook fieldwork. Each team consisted from 3-5 interviewers, one supervisor, one assistant, one field editor, and one laboratory technician.

Data Processing:

1. Data Entry Programming:
The statistical package BLAIS was used in data entry, which was organized in a number of files corresponding to the main parts of the questionnaire.

A data entry template was designed to reflect an exact image of the questionnaire. It included various electronic checks such as logical check, consistency checks, and cross-validation. Continuously thorough checks on the overall consistency of the data files and sample allocation were sent back to the field for corrections.

2. Data Entry:

Data entry started on June 5 th, 2002 and finished on July 28 th, 2002. Data cleaning and checking processes were initiated simultaneously with the data entry. Thorough data quality checks and consistency checks were carried out.

Response Rate:

Overall 85.0% of the questionnaires were completed, 80.6% in the West Bank, and 90.9% in Gaza Strip. The response rate was about 95.7%, including 93.5% in the West Bank and 98.3% in Gaza Strip.

Data Quality:

Since the data reported here are based on a sample survey and not on complete enumeration, they are subjected to two main types of errors: sampling errors and non- sampling errors. Sampling errors are random outcomes of the sample design, and are, therefore, easily measurable.

Non-sampling errors can occur at the various stages of the survey implementation in data collection and data processing, and are generally difficult to be statistically evaluated. They cover a wide range of errors, including errors resulting from non-response, sample frame coverage, and data processing and response (both respondent and interviewer-related). The use of effective training and supervisions and the careful design of questions as measures have direct bearing on the magnitude of non-sampling errors, and hence the quality of the resulting data.

In addition to the points mentioned above some methods are utilized to evaluate the quality of data include;

1. Frequencies of missing values and "don't know" responses and the proportion of responses in the "Others" categories.
2. Consistency between different parts of the questionnaire such as between the antenatal care and breastfeeding, between date of birth and anthropometric measurements, and immunization dates and dates of birth.

The Data Set

1. Main Files:

The data set to users consists of eight primary files that are related by identification variables (keys). A description of the files is below.

Number	File Name	Content	Identification Variable
CD1	Cover1.sav	Cover of Household Roster questionnaire	SERIAL - Master Record Identification
	Roster2.sav	Part one of Household Roster	SERIAL - Master Record Identification HR01 - Unique Person Number
	Roster3.sav	Part two of Household Roster	SERIAL - Master Record Identification HR01 - Unique Person Number
	House4.sav	Dwelling	SERIAL - Master Record Identification
	Mothcov5.sav	Cover of Women questionnaire	SERIAL - Master Record Identification
	Women6.sav	Mothers, and Measurement of Hemoglobin for Eligible Women (15- 49) years	SERIAL - Master Record Identification HR01 - Unique Person Number

Number	File Name	Content	Identification Variable
CD2	Childcov7.sav	Cover of Child questionnaire	SERIAL - Master Record Identification
	Child8.sav	Child Health, and Anthropometrical and Hemoglobin Measurements	SERIAL - Master Record Identification HR01 - Unique Person Number

The main variables, which relationally link the files, are SERIAL & HR01, which are presented in all files.

The structure and size of the files are listed below

File Name	Cases Unweighted	Variables	Record Length
Cover1.sav	5,122	17	67
Roster2.sav	29,500	6	24
Roster3.sav	29,500	12	28
House4.sav	2,276	82	181
Mothcov5.sav	3,397	12	42
Women6.sav	6,190	76	146
Childcov7.sav	2,255	12	46
Child8.sav	3,331	108	260

2. Filtering and Grouping of Respondents:

Units of analysis (Others units are generally derived from these) and filtering instructions are as follows:

Unit	From file	Filtering
Individuals	Cover1.sav, Roster2. sav, and Roster3.sav	Only those with interview completed
Households	House4.sav	Only those households with interview completed, and had children aged 6 – 59 months or women aged 15 -49 years
Eligible women	Mothcov5.sav, Women6. sav	Ever women given birth (14-49 years), and ever women aged 15 –49 years
Children	Childcov7.sav, Child8.sav	Children aged 6-59 months

3. Derived Variable:

Variable Name	Variable Description	Variable Values
Serial	Questionnaire serial number	Number
HR13cod	Marital status for individuals	1. Never married 2. Legally married 3. Currently married 4. Divorced\ widowed\separated
HR14cod	Educational Status	1.Illitrate 2. Can read & write 3. Elementary 4.prepapratory 5.Secondary 6. Associated diploma 7. Bachelor and above 8. DK
w3	The relative weight for individuals	Number
Region	Type of region	1. West bank 2. Gaza Strip
H02cod	Type of dwelling you are living in	1. Villa \ house 2. Apartment 3. Others.
H04TEXT	The other main source of drinking water in your HH.	Others, …..
H05TEXT	The other type of sewage in the HH	Others, …..
H06TEXT	The other type of toilet facility most does your HH use it	Others, …..
H11TEXT	The difficulties faced your family to obtain food supply during the Intifada due to other reasons	Others, …..
H16TEXT	Other type of animal breeding by your family	Others, …..
H17 text	The other use of animal's products	Others, …..
Locality type	Type of locality	1. Urban 2. Rural 3. Camp
W	The relative weight for households	Number
wff	Relative weight for women	Number
W03text	The other reason of difficulties, which faced the HH to obtain health services for children	Others, …..
W04text	The other reason of difficulties, which faced the HH to obtain vaccinations for children during the Intifada	Others, …..
W06TEXT	The other health services that you choose, when your child become sick and you need treatment	Others, …..

Variable Name	Variable Description	Variable Values
W07TEXT	Other you received health education on child nutrition	Others, …..
W09TEXT	Other cause anemia among children	Others, …..
haz	Height for age	
hap	Anthropometrical index	Number
ham	Anthropometrical index	Number
waz	Anthropometrical index	Number
wap	Anthropometrical index	Number
wam	Anthropometrical index	Number
whz	Anthropometrical index	Number
whp	Anthropometrical index	Number
whm	Weigh for age	Number
wa2	Weigh for age – 2 SD	Number
wa3	Weigh for age – 3 SD	Number
ha2	Height for age – 2 SD	Number
ha3	Height for age – 3 SD	Number
wh2	Weigh for height –2 SD	Number
wh3	Weigh for height – 3 SD	Number
haz1	Anthropometrical index	Number
waz1	Anthropometrical index	Number
whz1	Anthropometrical index	Number
CH26TEXT	The other food, which given for child during the first year of his age	Others, …..
AGGROUP	Age group for children	1. 6-11 2. 12-23 3. 24-35 4. 36-47 5. 48-59
hr14q	Educational status	1. Nothing 2. Elementary 3. Preparatory 4. Secondary and above
rw	The Relative weigh for children	Number