

## Introduction about Nutritional Assessment methods

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## Outlines

- **Introduction.**
- **Nutritional assessment systems:** surveys, surveillance, screening, intervention and assessment systems in the clinical setting.
- **Nutritional assessment methods:** Anthropometric methods, Laboratory methods, Clinical methods, Dietary methods and Ecological factors.

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## Introduction

- Nutritional assessment procedures were first used in surveys designed to describe the nutritional status of populations on a national basis.
- The methods used were initially described following a conference held in 1932 by the health organization of the league of nations.
- Many industrialized countries now collect data on the nutritional status of the population. The data can be used to identify public health nutrition problems so that effective intervention programs can be designed.
- In some countries, data are collected on an ongoing basis using nutrition surveillance systems.
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## Cont'd

- In the past, these systems have targeted high-risk populations, especially low-income mothers, children under five, and pregnant women.
- Now with the growing awareness of the role of nutrition as a risk factor for chronic diseases, surveillance systems often encompass all age groups.
- Today, nutritional assessment in many low-income countries emphasizes new simple, noninvasive approaches that can be used to measure the risk of both nutrient deficits and excesses, as well as to monitor and evaluate the effects of nutrition interventions.

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## Nutritional assessment systems

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- **Nutritional assessment can be defined as**
- The interpretation of information from dietary, laboratory, anthropometric and clinical studies.
- The information is used to determine the nutritional status of individuals or population groups as influenced by the intake and utilization of nutrients.
- **Nutritional assessment systems can take one of four forms:** surveys, surveillance, screening, or intervention.

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### Nutrition surveys

- Cross-sectional nutrition surveys can identify and describe population sub-groups “at risk” for chronic malnutrition.
- They are unlikely to identify acute malnutrition or provide information on the possible causes of malnutrition.
- They are often a necessary first step in an investigation into the causes.

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### Nutrition surveillance

- The characteristic feature of surveillance is the continuous monitoring of the nutritional status of selected population groups.
- Surveillance studies, unlike cross-sectional nutrition surveys, identify the possible causes of both chronic and acute malnutrition and, hence, can be used to formulate and initiate intervention measures at either the population or the subpopulation level.
- Additional objectives of nutrition surveillance may include monitoring the effect of government policies and evaluating the efficacy and effectiveness of nutrition intervention programs.

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### Nutrition screening

- The identification of malnourished individuals requiring intervention can be accomplished by nutrition screening.
- This involves a comparison of measurements on individuals with predetermined risk levels or “cutoff” points, using measurements that are simple and cheap, and that can be applied rapidly on a large scale.
- Nutrition screening can be carried out on the whole population, targeted to a specific

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### Nutrition intervention

- Nutrition interventions often target population subgroups identified as “at-risk” during nutrition surveys or by nutrition screening.
- There are three types of nutrition interventions:
- Supplementation, fortification, and dietary approaches.

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### Assessment systems in the clinical setting

- The types of nutritional assessment systems used in the community have been adopted in clinical medicine to assess the nutritional status of hospitalized patients.
- This practice has arisen because of reports of the high prevalence of protein-energy malnutrition among surgical patients.
- Today, nutritional assessment is often performed on patients with acute traumatic injury, on those undergoing surgery, on chronically ill medical patients, and on

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### Nutritional assessment methods

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- In the past, nutritional assessment systems have focused on methods to characterize each stage in the development of a nutritional deficiency state.
- Increasingly, nutritional assessment systems are now applied to define multiple levels of nutrient status and not just the level associated with a nutrient deficiency.
- Such levels may be associated with the maintenance of health, or with reduction in the

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### Anthropometric methods

- Anthropometric methods involve measurements of the physical dimensions and gross composition of the body.
- The measurements vary with age, and sometimes with sex, race and degree of nutrition, and they are useful in circumstances where chronic imbalances of protein and energy are likely to have occurred.
- In some cases they can detect moderate and severe degrees of malnutrition, but the methods cannot be used to identify specific nutrient deficiency states.
- They have the additional advantage of providing information on past nutritional history.
- They can be performed relatively quickly, easily, and reliably using portable equipment.

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### Laboratory methods

- The laboratory methods include both static biochemical and functional tests.
- Static biochemical tests measure either a nutrient in biological fluids or tissues or the urinary excretion rate of the nutrient or its metabolite.
- They are especially useful for identifying the second and third stages in the development of a nutritional deficiency.
- Functional tests are being increasingly used,

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### Clinical methods

- A medical history and a physical examination are the clinical methods used to detect signs (observations made by a qualified examiner) and symptoms (manifestations reported by the patient) associated with malnutrition.
- These signs and symptoms are often nonspecific and only develop during the advanced stages of nutritional depletion; for this reason, diagnosis of nutritional deficiency should not rely exclusively on clinical

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### Dietary methods

- During this stage, the dietary intake of one or more nutrients is inadequate, either because of a primary deficiency (low levels in the diet) or because of a secondary deficiency (such as certain drugs, dietary components, or disease states) interfere with ingestion, absorption, transport, utilization, or excretion of the nutrient(s).

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### Ecological factors

- Nutritional assessment methods often include the collection of information on a variety of other factors known to influence the nutritional status of individuals or populations, including any relevant socioeconomic and demographic data.
- Variables may include household composition, education, literacy, ethnicity, religion, income, employment, material resources, water supply and household sanitation, access to health and

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### Cont'd

- Additional data on food prices, the adequacy of food preparation equipment, the degree of food reserves, and the percentage of household income spent on certain foods such as animal foods, fruits, and vegetables can also be collected.

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