

# Assessment of nutritional status anthropometry report

[Sociology](#), [Population](#)



## **Introduction**

Nutritional status can be defined as the balance between the amount of nutrients taken in by a living organism and the amount of nutrients spent by these organisms in the process of growth, health maintenance. In order to analyze this aspect, we will take into consideration the following attributes; level of nutrients in the body, products of metabolism and the functional processes that they regulate. Nutritional status can be measured for both individuals and populations. For accurate measurements especially those used for clinical purposes, nutritional measurements are done for individuals whereas for research purposes, population measures are the most common. Nutritional measurements of populations can be used to identify populations or population segments at risk for nutrition-related health consequences and to evaluate interventions. The choice of the method to be used for nutritional assessment depends on the level at which a person wants information and also the validity and reliability of the method. All methods used have errors but the errors vary depending on the situation being studied. Therefore it is necessary that for whatever data obtained from the study, there is need to compare it with some reference data so as to produce an indicator of nutritional status. Methods to be used must be ideal and very specific in order to produce data that can be relied on. The assessment of nutritional status can be summarized by the mnemonic “ ABCD” standing for anthropometric measurement, biochemical, clinical indicators and dietary assessment. (Drewnowski, 2001)

## **Purpose of report**

The purpose of this report is to consider different methods of nutritional analysis, how they are carried out and how efficient they are. We are also going to cover the following; Anthropometric Approaches to Nutritional Status Assessment, Choosing a Dietary Approach to Nutritional Status Assessment and Common Methods for Dietary Data Collection. (Drewnowski, 2001)

## **Methods of nutritional assessments**

The methods used in nutritional assessments can be broadly categorized as either direct or indirect methods.

Direct methods: These deals with individuals and measure objective criteria. They include anthropometric measurement, biochemical, clinical indicators and dietary assessment.

Indirect methods: They use community indices that reflect the community nutritional status/needs.

## **Anthropometric Approaches to Nutritional Status Assessment**

These are methods which are used to assess the size and body composition of individuals. Adults can be classified as having healthy or non-healthy weights by taking into consideration their body weight and height measurements. In developed countries like the US, most cases of unhealthy weights are over-weight while in developing countries or underdeveloped countries most recorded cases of unhealthy weight are under-weights.

However, this method was used in ancient past and things have changed in the recent past whereby body mass index, BMI is used which is measured in kg/m<sup>2</sup>. An average BMI is at 18.5 to 25.0 kg/m<sup>2</sup> while overweight is at 25.0 to 29.9 kg/m<sup>2</sup> and obese at over 30.0 kg/m<sup>2</sup>.

## **Methods for Dietary Data Collection**

There are several methods that can be used to collect data for such a study.

The most common ones are:

### **a) The prospective methods.**

The prospective methods involve keeping records of foods consumed over the period of time being studied. When conducting this research, food can be weighed before eating then the plate remains weighed after eating so as to ascertain the total amount of food eaten by an individual. We can also prepare two duplicate meals whereby one is consumed by the individual in study and the other sample analyzed so as to get the nutrients contents.

Another method that can also be used is the dietary recording of the food taken by an individual. The above methods are not very accurate as a person may decide to alter his/her eating habits so as to make it look more desirable.

### **b) Recall methods**

These are the most widely used methods of dietary data collection. This is because they are less reactive. However they are also less accurate than the records methods. The types of recalls used are; 24 hour recall in which the previous day's food intake is queried in detail. It is the easiest method for

individuals to complete. Multiple 24 hour recalls are necessary as a single day's record may not be sufficient to make a conclusion. The number of 24 hour recalls necessary to be used depends on the type of diet in question. Nutrients which are widely distributed in foods such as carbohydrates require lesser time than nutrients which are not widely used in the food such as cholesterol for one to make a conclusion.

Other methods that can be used to collect data on diet include the use of questionnaires. When using questionnaires, the following information should be included in the questionnaire; age, ethnicity and sociodemographic profile. The anthropometric measurements that were carried out include; Hip Circumference, Waist Circumference, Mid Arm Muscle Circumference (MAMC), Triceps Skinfold (TSF), Mid Arm Circumference (MAC), Body Mass Index (BMI), Weight, Height, Age and Sex. Body mass index was computed using the standard equation:  $\text{weight (kg) / height}^2 \text{ (m}^2\text{)}$

Other methods of measuring nutritional status include: mid-arm circumference, skinfold measured over the triceps muscle and mid-arm. These are all used to estimate fat and muscle mass. Head circumference can also be used in children who are 36 months or younger in order to monitor brain growth in the presence of malnutrition. (Semba, 2008) In order to interpret all these anthropometric data, they must be compared with reference data. The reference data should not come from the same population as the category of people in study. The reference data should be collected from healthy and adequately nourished population.

## **Choosing a Dietary Approach to Nutritional Status Assessment**

There are several techniques which are used for collecting dietary data which is used to estimate nutritional status. When choosing a dietary assessment method, it is very important that you take a look at the specific type of data needed.

## **Discussion**

Malnutrition and overfeeding both lead to health complications. Excessive consumption of food or of some particular kinds of nutrients leads to different complications. Underfeeding or deficiency of nutrients in the body also leads to complications of its kind. (Andres, 1990) Some of these complications are shown in the diagram below.

## **Examples of illnesses caused by improper nutrient consumption**

### Conclusion

The use of anthropometry has been accepted as a very important tool for the assessment of nutritional status especially when dealing with children. There are various parameters which are used in the assessment. They include; weight for age, weight for height, arm circumference and height for age. These are either used singly or combined. When they are combined, they give a clearer picture of the situation at hand. (Andres, 1990)

None of the females from developing countries was overweight or obese according to the WHO standards. Most of them had a BMI ranging between 18.5 -24.5 which is the healthy recommended BMI. However, a few were

underweight and had a BMI lower than 18.5. None of the females from industrialized countries was underweight according to the WHO standards. Most of them had a BMI ranging between 18.5-24.5 which is the healthy recommended BMI. A few were overweight and had a BMI of more than 24.5. Both the females and the males from the developing countries had a smaller waist and hip circumference as compared to their counterparts from the developed countries.

The above results can give a glimpse on the kind of foods that are taken in the two types of countries. Most food taken in the developed countries are likely to be containing a lot of fats which may be the likely cause for the over-weights. In the developing countries, people have a slightly lower BMI which is an indication that the foods taken in these countries contain less fat.

## References

- Andres R F. (1990) Anthropometric Standards for the Assessment of Growth and Nutritional Status. University of Michigan Press
- Drewnowski, Adam. (2001) Diet Image: A New Perspective on the Food-Frequency Questionnaire." Nutrition Reviews 59 370–372.
- Himes, J. H. (1991) Anthropometric Assessment of Nutritional Status. John Wiley and Sons Publishers.
- Quandt, Sara A. (1987) Intracultural Variation in American Infant Diet: Patterns in Diversity and Consequence for Research Design. American Behavioral Scientist 31: 250–265.
- Semba R. D. (2008) Nutrition and Health in Developing Countries. Humana Press