UNIT 1 INTRODUCTION TO MEDICAL NUTRITION THERAPY

Structure

1.1 INTRODUCTION

Nutrition is one of the basic components of life. It is an essential part of health care. You already know that good nutrition is essential for the maintenance of optimum health, prevention of disease and recovery from illness. Provision of proper attention to nutrition can remarkably alter the course of illness when it occurs.

In this unit, we shall deal with medical nutrition therapy. Nutrition is an integral part of the medical therapy as adequate nutrition support is essential to prevent an extended and complicated hospital stay. Working closely with the physician, the nutritionist/ dietitian determines an individual's nutritional therapy needs and plan of care. Who is a dietitian? What are his/her roles and responsibilities? How can patient care and counseling help to improve a patient's status? These are the issues which we shall study in this unit.

This unit also focuses on nutritional care process, its components and its effectiveness. As you read on, you would realize that the important function of nutritional care is to ensure that all patients are adequately and appropriately nourished. We shall study about nutrition care process under the following sub-sections: nutritional assessment, nutritional care plan, implementation of the plan and evaluating the efficacy of the nutrition care plan.

Objectives

After studying this unit, you will be able to:

- describe the processes involved in nutritional care,
- learn how to evaluate the nutritional status of an individual,

- plan, implement and evaluate nutritional care based on the assessment,
- highlight the importance of patient care and counseling, and
- understand the importance of team approach in therapeutic nutrition.

1.2 DEFINITIONS AND ROLE OF DIETITIAN IN HEALTH CARE

We all are familiar with the word 'dietitian'. Who is a dietitian? What are the roles and responsibilities of a dietitian in a hospital setting? Let us read and find out this and much more in this section. But before that, let us get to know what we mean by the term *dietetics*?

1.2.1 Dietetics the Science and Art of Human Nutrition Care

Dietetics has been defined as the *science and art of feeding individuals based on the principles of nutrition*. It can also be said to be the "science and art of human nutritional care." Dietetics is a study of using the principles of nutrition in planning suitable diets in health and disease. In other words, diet therapy and its application in patient related settings is a major focus of dietetics.

Thus, the field of dietetics can be related to:

- Nutrition care and intervention focused on the individual, and
- Nutrition care and intervention focused on the group.

Traditionally nutritionists have focused largely (or almost fully) on biological aspects of nutrition. However, we have realized over the years, that physiological biochemistry does not provide answers fully to the problems in human nutrition. Thus, nutritionists are moving towards a comprehensive approach to human nutrition and societies, as well as, professionals from a variety of related fields have begun to increasingly recognize the central role in every aspect of life.

The rapid growth of scientific information and understanding of the inextricable nature of biological, sociological and psychological factors in human life are now making it obvious that we need a holistic or encompassing approach to human nutrition and dietetics as highlighted in Figure 1.1.

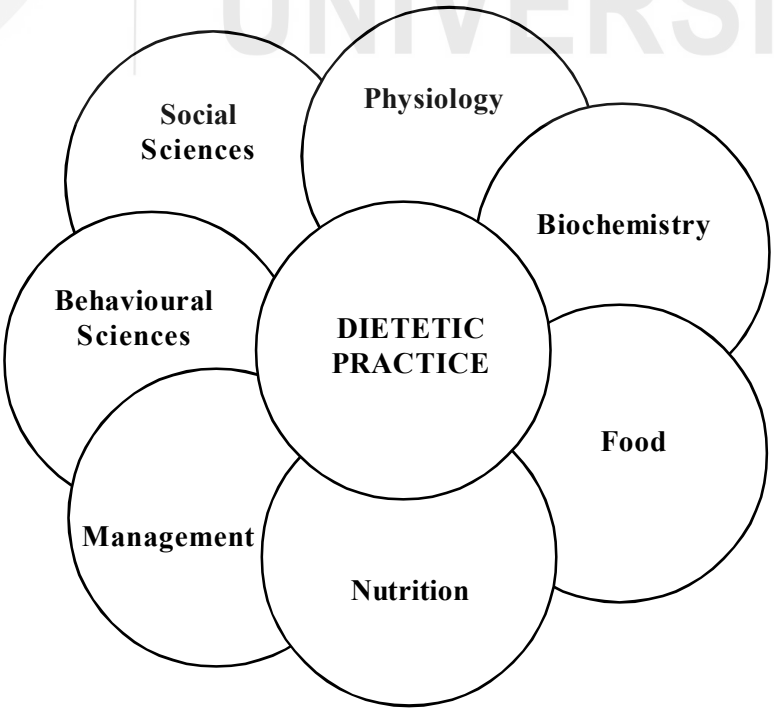

Figure 1.1: Dietetics - a multidisciplinary approach

Source: Payne-Palacio J, Canter DD. The profession of dietetics, 1996

The body can utilize nutrients only after food is eaten. Therefore, nutritionists and dietitians need to consider all those factors which influence or rather determine what, how, when, why and how much a person eats. Table 1.1 summarizes the various biological, socio-cultural and environmental factors which affect food choices. If you examine which services/fields deals with these issues, you will move into the realm of sociology, ecology, anthropology and psychology.

Table 1.1: Factors affecting food choices

Biological Factors	Socio-cultural Factors	Environmental Factors
Nutritional needs	Education	Geography climate
Heredity	Understanding of nutrition/	Season
Special physiological	health concept	Economics
condition like pregnancy	Social class, status	Transportation
Special diseases or	Income`	Technology
abnormal conditions	Traditions, beliefs, values	Fuel availability
Taste preferences	Ideology, relation	
Individuals cravings,	Communication	
likes and dislikes	Influence of business	
	Government (policies)	
	Professionals politics	

Dietetics optimizes the nutrition of populations and individuals. Dietetics, therefore require interdisciplinary approaches since the nutrition and diet counseling is not only science it is an art.

Let us next understand a few terms related with dietetics – *Clinical Dietetics* and *Medical Nutrition Therapy* (MNT). What are these and what is their role in nutrition care? Let us read and find out.

Clinical Dietetics is *the application of dietetics in a hospital or health care institutional setting*. Clinical dietetics focuses on an individual, nutrition support and symptom management.

Medical Nutrition Therapy (MNT) is defined as *the assessment of the nutritional status of a client followed by nutrition therapy ranging from diet modification to specialized nutrition support such as the administration of enteral and parenteral nutrition and monitoring to evaluate the patient*.

MNT may also be defined as nutritional diagnostic, therapy and counseling services for the purpose of disease management.

MNT starts with the assessment of nutritional status of patient with a condition, illness or injury that puts them at risk. This includes the review and analysis of medical and diet history, laboratory values and anthropometric measurements. Based on the assessment, a nutrition care plan, most appropriate to manage the condition or treat the illness or injury is formulated. The MNT also includes intervention and evaluation of achievement of desired clinical outcomes. Appropriate medical nutrition therapy provided by the dietetics professional has been shown to result in health benefits and reduced health care costs.

Diet also plays a very crucial role in the health and well being of people. A good and balanced diet improves the quality of life to a great extent. Poor eating habits and inadequate food intake are the major causes of a lot of diseases. Nutrition and dietetics are fields related to this food and nutrition aspect of life.

The study of nutrition means an understanding of the various components of food and the role and requirement of each of these components for the body. One becomes aware of the right type of food which provides a balanced mix of the essential vitamins, minerals etc. It also involves a study of the processes by which the food is digested

and absorbed in the body. This field finds application in medicine, veterinary, agriculture and public health.

Dietetics is the interpretation and communication of the science of nutrition to enable people to make informed and practical choices about food and lifestyle, in both health and disease. A dietitian will have training in both hospital and community settings as a part of their course. Most dietitians are employed in the hospitals, but may also work in the food industry, education, research and on a freelance basis. It is necessary for them to have a recognized degree; M.Sc. or post graduate diploma in nutrition and dietetics to work as a dietitian.

You are training to be a dietitian and your role is to provide effective nutritional care in different health settings and to function as a medical nutrition therapist in clinical dietetics or therapeutic nutrition. The various tasks and the role of a dietitian are enumerated next.

1.2.2 Role of Dietitian in Health Care

The role of the dietitian has come a long way since the early 1900s. Their role is still unknown to a lot of people. Some think that dietitians, as their name implies, only give out diets to make individuals lose weight, whereas this is only a small part of their role. The dietitian has a defined role concerning the ethical issues and dilemmas of nutrition care for patients. The dietitian is *the link between the patient and the medical team or physician in assisting difficult decision making about nutrition care*. A description of the dietitian's role in terms of managing the nutrition support of a terminally ill patient may be as follows: 'The dietitian needs to continue to play an essential role in evaluation and decision-making in the nutritional support of the terminal patient. No individual is better trained to interpret and coordinate nutrition issues between the patient and the other members of the healthcare team in this unique situation. The development of new feeding technologies, supplements, and interventions will continue to force difficult decisions to be made concerning the benefit of these modalities and the desires of the patient'.

Several medical and nutritional organizations have remarked on the role of the dietitian in nutrition care issues and dilemmas. These have been presented for your knowledge in Box 1 herewith.

Box 1	**Role of Dietitian in Nutrition Care**

Asian Society of Perenteral and Enteral Nutrition (ASPEN) states that the dietitian's role in nutrition care has been to recommend an adequate source and amount of balanced nutrients according to pre-established standards of care. A dilemma occurs when the disease state of the patient confounds the adequacy of nutritional support, which has resulted in the patient's malnourishment.

The American Dietetic Association (ADA) remarked on the role of the dietitian in feeding dilemmas as: the dietitian, like other healthcare professional, has an inherent ethical responsibility to respect the sanctity of life and the dignity and rights of all persons and to provide relief from suffering. It is the dietitian's responsibility to provide a combination of emotional support and technical nutrition advice on how best to achieve each patient's goals within legal parameters.

This statement affirms that dietitians have an active role in the care and support of any and all patients. It is not acceptable to sign off on a patient's medical record when the tough legal and medical decisions are to be made. Instead, the dietitian should be:

- informed on the rights and desires of the patient and/or family,
- informed on the severity of illness and complications of treatments, inclusive of the benefits and burdens of feeding in all conceivable routes,

- active in the patient's care as the dietitian reporting on the nutritional status of the patient, as well as, the advisor to the physician and medical team, and
- informed of legal decisions that may help determine the route of care for the patient, such as more aggressive or palliative care.

Some of the situations that concern ethical decisions in nutrition care are as follows:

- difficulty of adequate nutritional support of malnourished patients,
- problem of providing nourishment to competent patients who refuse feeding,
- benefit vs burden questions, especially in terminally ill patients, and
- incompetent patients who may or may not have families to help determine their wishes for feeding.

A common scenario that occurs in daily practice is providing adequate nutritional support to malnourished patients. The patients who are usually seriously ill may have complicating medical conditions that impede delivery of adequate nourishment. The dietitian struggles to provide adequate nutritional support in relation to the medical condition and the desires of the patient.

Dietitians are engaged in a variety of positions and in a number of work settings. Of course the largest proportion is involved/ engaged in food service and in patient care within hospitals or outpatients. However, some dietitians do work in food service for students, in the hotel industry, in employee cafeterias (industrial canteens), food and pharmaceutical companies, as well as, in community and public health services/ departments. Some are also in private practice and may be self-employed. Nowadays dietitians are also involved in marketing, sales and journalism. If you examine these activities you will find that the dietitians services focus on :

– Clinical services
– Public health/community nutrition
– Nutrition information/communication
– Food services
– Wellness/disease prevention
– Nutrition research.

Many dietitians are beginning to be involved in newer speciality areas such as sports nutrition, cardiovascular fitness, nutrition education of the public, prenatal nutrition, as well as, physical medicine and rehabilitation.

Thus dietitian's practice/roles are rapidly changing as the health needs of society change and as the health care system evolves and develops to meet societal needs.

This necessitates dietitian's possessing a wide variety of skills. Beyond the technical knowledge and practical skills dietitians needs to have communication and education skill (both oral and written), since they may be expected to plan, organize, implement and evaluate nutrition education for individuals, clients and groups.

In all of this the dietitian's involvement is not only in therapeutic nutrition i.e. rehabilitation but also health promotion and health maintenance. High-ranking competencies are needed to apply skills in communicating scientific information at a level appropriate to different audience. A good professional dietitian should also have the ability to select and/or develop nutrition education materials and approaches appropriate for a variety of target groups.

In food service systems, the dietitian will have many managerial roles to play e.g. orienting, training and developing staff, counseling subordinates, providing on-the-job and in-service training and continuing education that meet the needs of employees.

Another upcoming area is home health care where patient counseling, caregiver education, documentation, diet histories and developing a nutrition care plan are important activities.

Thus dietitians are in a 'helping' profession because the services they provide are beneficial to individuals and society and dedicated to improving the nutritional status of the people. Helping professions can be described as professionals that do something with knowledge e.g. communicating, interpreting and applying nutritional science to benefit the health of people.

Helping professional need a variety of skills:

– Techniques of interviewing

– Techniques of counseling

– Ability to relate to individuals, groups and individuals

– Effectiveness in bringing about change

– Capacity for self-understanding

– Establishment of professional, interdisciplinary relationship

– Knowledge of personality, group and societal dynamics

If a dietitian has these skills, she can assist others or herself, be able to assess many (or all) dimensions of a problem, explore alternative solutions and stimulate action towards positive change and problem resolution.

Along with the role and responsibilities enumerated above, the dietitian is an important link in the chain of patient care decisions. Let us see how.

Consulting with Physicians

Usually, the dietitian's role in feeding dilemmas is seen as secondary and the physician's role is the focus. In reality, the dietitian is an important link in the chain of care decisions, often serving as a consultant or a fact-gatherer for the physician and/or medical team. Through the presentation of relevant information, the dietitian becomes a part of the decision-making body that assists patients in their care. A scenario of a dietitian consulting the medical team is described in this case example of the dietitian's role in an ethical dilemma regarding the allocation of two feeding pumps among seven critically ill patients who needed the pumps. The nutrition care dilemma in this case was an insufficient number of pumps available for the number of patients needing the pumps. A dilemma is the choice between two alternatives, neither being totally ideal. The medical team had to search for both medical and moral reasons for selecting one patient over the other for the use of the feeding pump. The choice of the team was to give the feeding pumps to those patients who were deteriorating the most quickly and where nutrition support was critical. As a patient improved, feeding was changed to oral methods to allow the feeding pump to help another patient. In other words, through careful planning and organization, the feeding pumps were rotated to the seven patients as medically necessary. A four-step process of moral judgment and action can be utilized to analyze the feeding pump allocation problem. The four-step process includes gathering relevant information, identifying the ethical dilemma, deciding what to do, and completing the action. The following list serves as an outline to this process:

- implement a pragmatic moral judgment and action process.
- confer with other health professionals.

The dietitian and the medical team ranked the patients in accordance to pump need, based on the following factors:

– *Present nutritional status*: The dietitian presents a nutritional assessment of the patient that may include information specific to ideal body weight, history of weight loss, pertinent laboratory values, and anthropometrical measurements.

– *History of diet and or tube feeding tolerance*: The dietitian presents the patient's history, which may include presence or history of emesis (vomiting), diarrhoea, fat malabsorption and food allergy and/or lactose intolerance.

From our discussion above it is evident that the dietitian along with the physician/ doctor should work as a team to provide the best possible nutritional care. Let us next have a look at the other areas where the dietitian's role is considered crucial.

Nature of Work – Other Activities

Dietitians, we read above, form an important part of the health care team within a hospital and are responsible for planning and organizing all activities for food service within the hospital. Apart from this, dietitians have direct responsibility for food service operations, where one food safety mistake can affect hundreds, and even thousands of people. The fact that many institutions are serving food to individuals, who may already be in a "high-risk" category for food-borne illness, makes the dietitian's role even more critical.

A few of the responsibilities include planning menus, purchasing and ordering food/ equipment within budget, recruitment, education and evaluation of staff, observing and practicing all safety and sanitation rules strictly.

Dietitians have a direct contact with the public and other health professionals. Nutritionists and dietitians deal with people to inform and guide them about the diet they should take to improve the general health, to avoid certain diseases or to keep the existing ailments in control. People suffering from certain diseases need to take extra care of their eating habits and the kinds of food they eat. Ignorance of this can aggravate the disease, whereas, adherence to the right diet can help in speedy recovery or stability of the condition. Major role of dietitians is *to assist people in planning their meals depending upon their age, sickness or work routine*. Dietitians counsel individuals and groups, organize the food service systems in hospitals, schools, hotels etc. Dietitians and nutritionists plan food and nutrition programmes and supervise the preparation and serving of meals. They help to prevent and treat illnesses by promoting healthy eating habits and recommending dietary modifications.

Dietitians can specialize in several areas such as administration, clinical dietetics, research and community dietetics. Let us understand these specializations.

- *Administrative dietitians* play a major role in large-scale meal planning and monitoring the food preparation process by applying the principles of nutrition and sound management in hospitals, schools, canteens etc. They take up the entire responsibility of their department and actively participate in planning, purchasing, preparation, distribution and service of meals. These dietitians select, train and direct food service supervisors and workers; prepare budget for food, equipment and supplies; enforce sanitary and safety regulations; and prepare records and reports. Increasingly, dietitians utilize computer programmes to plan meals that satisfy nutritional requirements and are economical at the same time.

  Dietitians who are the directors of dietetic departments also decide on departmental policy, coordinate dietetic services with the activities of other departments, and are responsible for the dietetic department budget.

- *Clinical dietitians,* sometimes called therapeutic dietitians, are associated with health care institutes, hospitals and nursing homes. Depending on the nutritional needs of the patient's on the basis of individual nutritional assessment they prepare the diet charts and monitor the results of diet therapy. They assess patient's nutritional needs, develop and implement nutrition care plans, evaluate and report the results. Clinical dietitians confer with doctors and other members of the health care team about patient's nutritional care, instruct patients and their families on the requirements and importance of their diets, and suggest ways to maintain these diets at home.

  Technological advances in nutritional support for the critically ill have enhanced the clinical dietitian's role. In the hospital, dietitians oversee the preparation of custom-mixed high-nutrition formulas for patients who are critically or terminally ill and require special feeding through oral, enteral or parenteral route. In the home health field, they help develop and oversee sophisticated nutritional therapies for homebound patients who, because of surgery or illness, are unable to eat regular foods. In addition, clinical dietitians in nursing care facilities, small hospitals or correctional facilities may manage the food service department.

- *Research dietitians* work in the field of normal or therapeutic nutrition. Research dietitians seek ways to improve the nutrition of both healthy and sick people. They may study nutrition science and education, food management, food service systems and equipment, or how the body uses food. Other research projects may investigate the nutritional needs of the aging persons who have chronic diseases, or space travelers. Research dietitians need advanced training in this field and usually are employed in medical centers or educational facilities, or they may work in community health programmes.

- *Community dietitians* or nutritionists may counsel individuals and groups on sound nutrition practices to prevent disease, maintain health and rehabilitate persons recovering from illness. They may engage in teaching and research with a community health focus. This work covers areas such as special diets, meal planning and preparation, food budgeting and purchasing. Dietitians or nutritionists in this field usually are associated with community health programmes; they may be responsible for planning, developing, coordinating and administering a nutrition programme followed by proper evaluation.

  Working in places such as public health clinics, home health agencies, health maintenance organizations, community dietitians evaluate individual needs, develop nutritional care plans and instruct individuals and their families. Dietitians working in home health agencies provide instruction on grocery shopping and food preparation to the elderly individuals with special needs, and children.

  Increased public interest in nutrition has led to job opportunities in food manufacturing, advertising and marketing. In these areas, dietitians analyze foods, prepare literature for distribution, or report on issues such as the nutritional content of recipes, dietary fiber, or vitamin supplements.

- *Consultant dietitians* work under contract with healthcare facilities or in their own private practice. They perform nutrition screenings for their clients and offer advice on diet-related concerns such as weight loss or cholesterol reduction. Some work for wellness programmes, sports teams, supermarkets, and other nutrition-related businesses. They may consult with food service managers, providing expertize in sanitation, safety procedures, menu development, budgeting, and planning.

- *Teaching /academic dietitians*

  Dietitians process knowledge on all aspects of nutrition and dietetics. They constantly keep themselves updated in the necessary information and knowl-

edge which they transfer to the young interns/trainees under the internship programmes. They help translate theoretical concepts into applied aspects of dietetics (preventive and curative aspects of normal/ therapeutic nutrition).

Therefore, it must be evident, that the nature of work or activities undertaken by a dietitian may be multifarious. What about the work environment? As a dietitian, what would be your job and does your personality fit the job description. Read and find out for yourself.

Work Environment

Dietitians and nutritionists, who are associated with hospitals and clinics generally have regular work hours. At times, they may be required to work in shifts or on the weekend too. In this environment, they come in direct contact with patients and advise them appropriate diet based on the illness.

In commercial food service, the working hours are usually irregular. The work in research is carried on in the laboratories while in most other assignments their office is located near food preparation areas. Certain time needs to be spent in kitchens which are usually hot.

There are good career opportunities in the food industry too. Lot of food companies employ nutritionists and dietitians to check the nutritional quality of the food products, for new product development and for marketing related advice. There is teamwork involved in experimenting on flavours and preparations.

The Job

The dietitians undertake the practical application of nutrition with both individuals and population groups to promote the well being of individuals and communities to prevent nutrition related problems. They are also involved in the diagnosis and dietary treatment of disease.

Dietitians work with people who have special dietary needs, inform the general public about nutrition, give unbiased advice, evaluate and improve treatments and educate clients, doctors, nurses, health professionals and community groups.

Dietitians can work in a variety of areas, as already mentioned earlier, many of these are in the hospitals or in the community as 'Clinical Dietitians', 'Nutrition/Health Educators' or as 'Managers'. Both hospital and community dietitians educate people who need special diets as part of their medical treatment, for example patients with kidney disease, food allergies, eating disorders, diabetes, HIV/AIDS, oncology and gastroenterology. There are also opportunities for dietitians to work outside the hospital setting in a variety of different areas such as food industry, education, research, business, charities, media, freelance work.

Personality

Dietitians have special skills in translating scientific and medical decisions related to food and health to inform the general public. They also play an important role in health promotion. A variety of skills need to be possessed by them which include: techniques of interviewing, counseling, ability to relate to individuals and groups, effectiveness in bringing about change, capacity for self-understanding, establishment of professional inter-disciplinary relationship and knowledge of personality, group and societal dynamics.

In all, a dietitian would need to have an interest in science, people and food, an ability to explain complex things simply, a positive and motivating attitude, non-discriminatory approach, as well as, patience and a sense of humour. If a dietitian has these skills, she can assist others or herself to be able to assess many (or all) dimensions of a problem, explore alternative solutions and stimulate action towards positive change and problem resolution. So then, as a student of dietetics, we hope you have the personality and interest to work and excel in this area.

With this, we end our study of dietetics and the role of a dietitian. Next, we will explore the nutritional care process. But, first let us recapitulate what we have learnt so far.

Check Your Progress Exercise 1

1. Define the following terms:

   a) Dietetics .....

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   b) Medical Nutrition Therapy

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   c) Therapeutic Nutrition

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2. Diet and nutrition plays a crucial role in the health and well being of people. Comment.

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3. What are the different areas of specialization for dietitians? Briefly highlight the role of the clinical dietitian.

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1.3 THE NUTRITIONAL CARE PROCESS (NCP)

The nutritional care process is *a systematic and logical approach to ensure effective and successful nutrition intervention*. The American Dietetic Association (ADA) defines the nutrition care process as ' *a systematic problem-solving method that dietetic professionals use to critically think and make decisions to address nutrition related problems and provide safe and effective quality nutrition care*'. The purpose of the NCP is to give the dietetic professionals a consistent and systematic structure and method by which to think critically and make decisions. It also assists dietetics professionals to scientifically and holistically manage nutrition care, thus helping patient's better meet their health and nutritional goals. Here it is important to emphasize that the nutrition care process is a standardized process for dietetic professionals and not a means to provide standardized care. Standardized process here refers to a consistent structure and framework used to provide nutrition care, whereas standard care infers that all patients/clients receive the same care. Thus, the nutrition care process supports and promotes individualized care not standardized care. The nutrition care process acknowledges the common dimensions of practice by the following:

- defining a common language that allows nutrition practice to be more measurable,
- creating a format that enables the process to generate qualitative and quantitative data that can then be analyzed and interpreted, and
- serving as a structure to validate nutrition care and showing how the nutrition care that was provided does what it intends to do.

Working closely with the physician, you as a dietetic professional should determine an individual's nutritional therapy needs and plan of care. As represented in Figure 1.2, the relationship between the patient/client/group and dietetic professional is at the core of the nutrition care process. Therefore, nutrition care provided by dietitians or other qualified dietetic professionals should always reflect both the state of the science and the state of the art of dietetic practice to meet the individualized needs of each patient/client/group.

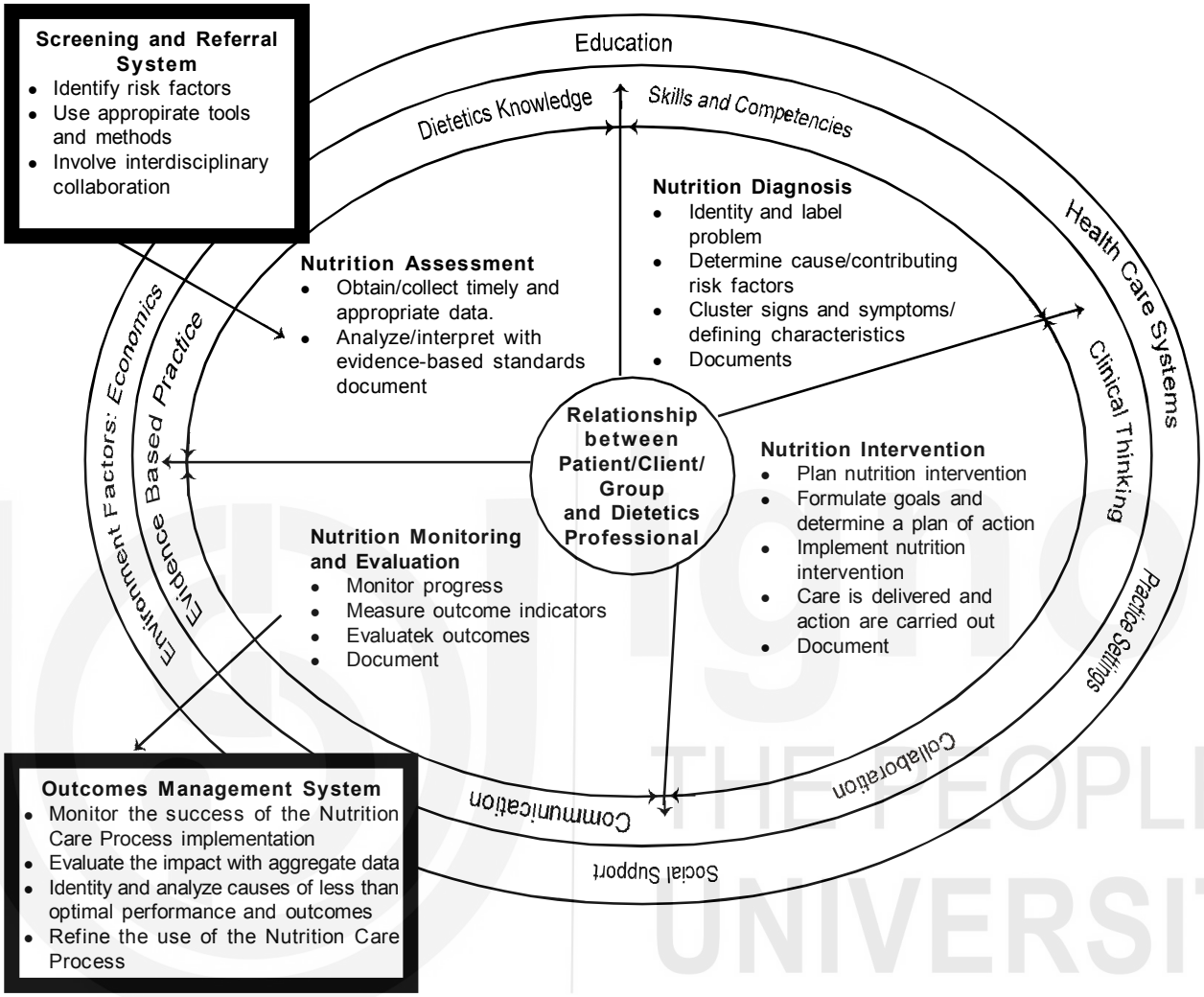

Figure 1.2: The nutrition care process and model

Source: Nutrition Care Process and Model. Journal of the American Dietetic Association; 2003; 103:1061-1072

The other factors that influence and impact on the quality of nutrition care are also highlighted in Figure 1.2. The strengths and abilities that dietetics professional bring to the process namely dietetic knowledge, skills and competencies, critical thinking, collaboration and communication, evidence-based practice are highlighted in the middle ring of the process illustrated in Figure 1.2. Environmental factors particularly practice setting, health care system, social system and economics influence the process. The nutrition care process consisting of four distinct, but interrelated and connected steps include:

a) Nutrition assessment

b) Nutrition diagnosis

c) Nutrition intervention, and

d) Nutrition monitoring and evaluation

Documentation is equally important in the nutrition care process. Let us now discuss each of these steps in detail.

1.3.1 Nutrition Assessment

The nutritional care process, you would realize, begins with nutritional assessment. Nutrition assessment is the *evaluation of an individual's nutritional status and nutrient requirements*. It is *a systematic process of obtaining, verifying, and interpreting data in order to make decisions about the nature and cause of nutrition-related problems*. It is an ongoing, dynamic process that involves not only initial data collection, but also continual reassessment and analysis of patients/clients/ groups needs. The purpose of nutrition assessment is to:

- obtain adequate information in order to identify nutrition-related problems,
- define accurately an individual's nutritional status,
- determine the level of nutritional support that individuals need, and
- monitor changes in the nutritional status and the effect of nutritional intervention.

How is this done? This is based on the interpretation of information obtained from the diet history, medical history, review of symptoms and physical, clinical, examination, including anthropometric measurements and laboratory data. Often, this process is referred to as the 'ABCD' analysis, where:

A stands for *Anthropometric measures*: It measures growth in children and shows changes in weight in all populations that can reflect diseases and help to monitor progress in fat loss or gain. Box 2 included in this unit highlights some of these measures, particularly those which are important from the clinical and therapeutic nutrition point of view.

B for *Biochemical investigations*: These help to reveal nutrients and metabolites in blood and /or urine, and/or faeces that indicate an infection or a disease.

C for *Clinical analysis*: This analysis includes a complete physical examination and a medical history. The physical examination begins with the patient's general appearance. Nutrition-oriented aspects of the physical examination focus on the skin, head, hair, eyes, mouth, nails, extremities, abdomen, skeletal muscle and fat stores. Clinical signs with their nutritional implications are given in Table 1.1.

D for *Diet history and nutrient intake*: This is used to evaluate diet for nutrient or food intake. Common methods used include the 24-hour diet recall, diet history, food frequency questionnaire, weighment method etc.

You may recall studying about these methods in the Public Nutrition Course (MFN-006) in Unit 7 and 8. We suggest you look up these units now and refresh your knowledge about these methods, before you move any further.

Nutritional assessment is important in the nutrition care process because acute and chronic malnutrition (both under and overnutrition) are common clinical findings. Malnutrition, we know, interferes with an individual's growth, development, general health and recovery from illness.

Box 2	Anthropometric Measures
Anthropometry involves obtaining physical measurements of an individual and relating them to standards that reflect the growth and development of an individual. Anthropometric measurements, therefore, involve taking physical measurements of the body, such as, height, weight, head circumference, girth measurement, or skinfold measurement. Anthropometric data are most valuable when they reflect accurate measurements and are recorded over a period of time. It is important to maintain proper equipments and careful techniques. Three types of measurements are common in clinical practice – height, weight and body composition. Let us study how are these useful for us and a few proper techniques for measuring these.	

Both height and weight are the useful measures/indicators in determining nutritional status in adults. Height and weight measurements in children are evaluated against various norms. These are recorded as percentiles which reflect the percentage of the total population of children of the same sex who are at or below the same height or weight at that age. This allows the child's growth at every age to be monitored. Now let us see how we can measure length/height of children as well as adults.

- *Length and Height* – Measurements of height can be obtained using a direct or indirect approach. In the direct method, a fixed measuring stick is used against the wall or platform clinic scales are used. This is done when the person is able to stand while indirect methods are used for persons who cannot stand such as individuals with cerebral palsy or muscular dystrophy or those who are elderly. These indirect methods are arm span, recumbent length (that is, when one is lying down) and knee height measurements. Recumbent bed height measurements using a tape measure may be appropriate for institutionalized individuals who are comatose, critically ill or unable to be moved. Recumbent length measurements are also used for infants and children younger than 2 or 3 years of age. Careful measurement of length at each check-up hence, gives a clear indication of a child's growth rate.

- *Weight* – As we have seen earlier, weight is a critical measure in nutrition assessment. It is used to assess children's growth, predict energy expenditure and protein requirements. Also, it helps to determine the body composition. Individuals should be weighed without shoes and in light clothing preferably on a beam balance scale. Body weight may be assessed by several methods including:

  a) *Ideal Weight for Height*

  Ideal weight for height can be determined from reference standards such as life insurance tables. Ideal weight for height can also be determined using the *Hamwi* method. According to this, the ideal weight for height for both the sexes is as follows:

  - Females – 100 lbs for the first 5 ft of height and 5 lbs for every inch over 5 ft.
  - Males – 106 lbs for the first 5 ft of height and 6 lbs for every inch over 5 ft.

Weight is then adjusted according to whether the person has a large or small frame as follows:

Large frame – Add 10%

Small frame – Subtract 10%

Now that you have understood how to find out ideal weight for height, we suggest you to calculate it for yourself. What do you derive out of this? Does the knowledge of Ideal Body Weight is of any use to you? Well, if you know your actual body weight, you can easily assess your nutritional status. Let us see how.

Significance of measured weights: Percent deviation from standard (percent ideal body weight) assesses the degree of malnutrition (under/over).

$$\% \text{ Ideal Body Weight} = \frac{\text{Actual Weight}}{\text{Ideal Body Weight}} \times 100$$

The table below presents you with criteria to determine nutritional status based on % IBW. Have a look at it and check it out for yourself.

Table 1.1: Criteria for assessing degree of malnutrition

IBW (%)	Interpretation of Nutritional Status
≥ 130 %	Obese
110% - 120%	Overweight
80% - 90%	Mild malnutrition
70% - 79%	Moderate malnutrition
< 69%	Severe malnutrition

b) *Usual Body Weight*

This may be a more useful parameter than ideal body weight for those who are ill. Comparing present weight to usual body weight allows changes in weight status to be assessed. A rapid weight loss or gain is significant.

c) *Body Mass Index (BMI)*

The Body Mass Index defines *the level of adiposity according to the relationship of weight to height*. It eliminates dependance on frame size. The formula for deriving BMI is:

$$\text{BMI} = \frac{\text{Weight (in Kg)}}{\text{Height (in metres)}^2}$$

The BMI is a more accurate measure of body fat than weight alone. It is the quickest and most accepted measure of obesity.

The normal range of BMI is between 18.5 and 25. A BMI value less than 18.5 denotes under nutrition BMI values of 25-30 is considered overweight. Those with a BMI greater than 30 are obese. As a dietitian, you should routinely assess height and weight and determine BMI for patients under your care.

Before we move on to the study of body composition and other measurements, let us get to know another type of measurement, used for the anthropometric assessment of infants and children. It is referred to as *head circumference*. This measurement is taken using a flexible tape measure put snugly around the head. This measure is amongst other useful indicators of normal growth and development, especially from birth till age 3.

- *Body Composition*

Various aspects of body size and composition can be measured which provide a good indication of body leanness and fatness in terms of skinfold measurements. These are listed in the Table 1.2. The validity of these measurements depends on the accuracy of the measuring technique.

- *Skinfold Measurements*

These measurements serve a variety of purposes, the most important being indicator of body fat. As you are already aware that a significant amount of the body's fat stores are right beneath the skin (referred to as *subcutaneous fat*). Hence determination of the sizes of the skinfolds at various sites around the body can give a good indication of body fatness. These measurements are useful in cases of illness. Can you think how? Well, this is because the maintenance of fat stores in a patient's body may be a valuable indicator of dietary adequacy.

Now how to determine these measurements? These measurements are done with special calipers. Let us now have a look at the different types of skinfold measurements.

(a) *Triceps Skinfold Measurements (TSF)*

The TSF is measured with a caliper that measures the thickness of the skinfold over the triceps muscle of the arm not in predominant use. The thickness of the TSF gives an indication of subcutaneous fat and is considered an index of stored energy.

Table 1.2: Triceps skinfold

Sex	Triceps Skinfold (mm)					
	Standard	90%	80%	70%	60%	50%
Female	16.5	14.9	13.2	11.6	9.9	8.3
Male	12.5	11.3	10	8.8	7.5	6.3

Percentages less than the standard, as indicated in Table 1.2, may be interpreted as mild, moderate or severe deficit.

b) *Mid-Upper Arm Circumference (MUAC)*

The MUAC measurement of the arm is taken with a metric tape measure at the midpoint between the acromion bone (a portion of the shoulder blade or the scapula that overhangs the rotator cuff and humerus– the upper arm bone) and the olecranon bones (the proximal part of the ulna bone which forms the elbow joint) on the arm not in predominant use. This measurement represents both muscle and fat stores. It is used to calculate mid arm muscle circumference (MAMC), about which we shall study next.

c) *Mid-Arm Muscle Circumference (MAMC)*

The mid-arm muscle circumference is used to estimate skeletal muscle mass and is calculated from the MUAC and the TSF.

MAMC (cm) = MUAC (cm) – [3.14 × TSF (in cm)]

Table 1.3: Mid-arm muscle circumference (MAMC)

Sex	Mid-Arm Muscle Circumference (cm)					
	Standard	90%	80%	70%	60%	50%
Female	23.2	20.9	18.6	16.2	13.9	11.6
Male	25.3	22.8	20.2	17.7	15.2	12.6

Percentages less than the standard, as indicated in Table 1.3, may be interpreted as mild, moderate or severe depletion.

d) *Waist to Hip Circumference Ratio (WHR)*

This ratio differentiates between android and gynoid obesity. What do you understand by android obesity and gynoid obesity? Well, android obesity, also known as *apple shaped fat distribution,* refers to the centric fat distribution patterns with increased disposition towards the abdominal and waist area. While gynoid obesity refers to the fat distribution at the hips and thighs. It is also referred to as *pear shaped fat distribution*.

The waist circumference is the smallest circumference between the nipples and the top of the thighs. The hip circumference is the largest circumference between the waist and the knees. A WHR of 1.0 or greater in men and 0.85 or greater in women is indicative of android obesity. This is an increased risk for obesity-related diseases.

e) *Bioelectrical Impedance Analysis (BIA)*

This is used for body fat analysis. BIA involves attaching electrodes to the extremities of a patient. A small electrical current is passed through the electrodes. Electrical and resistance measurements are obtained. It is a body composition analysis technique based on the principle that compared to fatty tissue, lean tissue has a higher electrical conductivity and lower impedance. Impedence is the opposition to the electric current and is the inverse of conductance. It is a safe, non-invasive and rapid means of assessing body composition. Though truncal fat cannot be assessed very accurately.

Table 1.4: Physical signs indicative or suggestive of malnutrition

	Normal Appearance	Signs Associated with Malnutrition	Possible Disorder or Nutrient Deficiency	Possible Non-Nutritional Problem
Hair	Shiny; firm; not easily plucked	Lack of natural shine; dull and dry Thin and sparse Dyspigmented Flag sign Easily plucked (no pain)	Kwashiorkor and less commonly, marasmus	Excessive bleaching of hair Alopecia
Face	Uniform skin colour; smooth, healthy appearance; no facial swelling	Nasolabial seborrhaea (scaling of skin around the nostrils) Swollen face (moon face) Paleness	Riboflavin Kwashiorkor	Acne vulgaris
Eyes	Bright, clear, shiny; no sores at corners of eye-lids; healthy, pink, and moist membranes; no prominent blood vessels or mound of tissue or sclera	Pale conjunctiva Bitot's spots Conjunctival xerosis (dryness) Corneal xerosis (dullness) Keratomalacia (corneal softening) Redness and fissuring of eyelid corners Corneal arcus (white ring around eye) Xanthelasma (small, yellowish lumps around eyes)	Anaemia (e.g., iron) Vitamin A Riboflavin, Pyridoxine Hyperlipidemia	Bloodshot eyes from exposure to weather, lack of sleep, smoke exposure, or alcohol
Lips	Smooth, not chapped or swollen	Angular cheilosis (white or pink lesions at corners of mouth)	Riboflavin	Excessive salivation from ill-fitting dentures
Tongue	Deep red in appearance, not swollen or smooth	Magenta tongue (purplish) Filiform papillae Atrophy or hypertrophy Red tongue	Riboflavin Folic acid Niacin	Leukoplakia
Teeth	No cavities; no pain; bright	Mottled enamel Caries (cavities) Missing teeth	Flurosis Excessive sugar in-take	Malocclusion Periodontal disease Health habits
Gums	Healthy, red, do not bleed; Not swollen	Spongy, bleeding Receding gums	Vitamin C	Periodontal disease
Glands	Face not swollen	Thyroid enlargement (front of neck swollen) Parotid enlargemnt (swollen checks)	Iodine Starvation Bulimia	Allergic or inflammatory enlargement of thyroid
Nervous system	Psychological stability, Normal reflexes	Psychomotor changes Mental confusion Sensory loss Motor weakness Loss of positional sense Loss of vibration Loss of ankle and knee jerks Burning and tingling of hands and feet (paresthesia) Dementia	Kwashiorkor Thiamine Niacin	Vitamin B_{12}

Source: Adapted from Community Nutrition Assessment, Jelliffe DB, Oxford University Press (1989)

In the first step in the nutrition care process, we have learnt that assessing nutritional status is crucial. Assessment provides the foundation for the nutrition diagnosis which is the next step in the nutrition care process. Let us get to know about nutrition diagnosis next.

1.3.2 Nutrition Diagnosis

Nutrition diagnosis is the identification and labeling that describes an actual occurrence, risk of, or potential for developing a nutrition problem that dietetics professionals are responsible for treating independently. At the end of the assessment step, data are clustered, analyzed and synthesized. This will reveal a nutrition diagnostic category from which to formulate a specific nutrition diagnostic statement. Analyzing the assessment data and naming the nutrition diagnosis provide a link to setting realistic and measurable expected outcome, selecting appropriate interventions, and tracking progress in attaining those expected outcomes.

It is important to remember that nutrition diagnosis changes as the patients/clients/ groups response changes.

Once the nutritional care plan is formulated, it is easy to implement as highlighted next.

1.3.3 Nutrition Intervention

Nutrition intervention, the third step of the nutrition care process, is a specific set of activities and associated materials used to address the problem identified in the step above. Nutrition interventions are purposefully planned actions, designed with the intent of changing a nutrition-related behaviour, risk factor, environmental condition, or aspects of health status for an individual, target group or the community at large. This step involves a) selecting b) planning, and c) implementing appropriate actions to meet patient's/clients/groups nutrition needs. The selection of nutrition intervention is influenced by nutrition diagnosis and provides the basis upon which outcomes are measured and evaluated.

Planning the nutrition intervention involves formulating and determining the plan of action. For this, we need to first prioritize the nutrition diagnosis based on the severity of the problem, safety, need of the patient etc. Next, identify science-based ideal goals and objectives. These objectives should be in behavioural form, realistic and should be appropriate to the educational levels, as well as, the economic and social resources of the patients and their family. Further, determine patient-focused expected outcomes for each nutrition diagnosis. The expected outcomes are the desired change(s) to be achieved over time because of nutrition intervention. For example, increasing or decreasing weight, blood pressure, laboratory values etc. These expected outcomes should be clear and concise and should be written in observable and measurable terms. Finally, defining and selecting specific intervention strategies that focus on the etiology of the problem is included in the planning phase.

Once we have formulated a plan of action, the next component is to implement the action plan i.e. care is delivered and actions are carried out. Implementation translates assessment data into strategies, activities or interventions that will enable the patient to meet objectives established. This might include prescribing a diet, nutrition counseling and educating the patient, providing food or nutritional supplements or changing the mode of feeding, and advice on financial or food resources. The care process is a continuous one. The initial plan may have to be altered as the condition of the patient changes or as and when new needs are identified. Interventions should be specific to established problems or objectives.

Implementation, therefore, is the action phase of the nutrition care process. During the implementation phase the dietetic professional communicates the plan of nutrition care, carry out the plan of nutrition care, and continue data collection and modify the plan of care as required. We as dietetics professionals may actually do the intervention,

or may include delegating or coordinating the nutrition care with other providers. We need to work collaboratively with the patients/client/groups, family or caregiver to create and implement a realistic plan that has a good probability of positively influencing the diagnosis/problem. This client-driven process is a key element in the success of this step.

Having implemented the nutritional care plan, we also need to monitor and evaluate to assess where we are and whether we are on track or not. This is the last step in the nutrition care process. This is reviewed next.

1.3.4 Nutrition Monitoring and Evaluation

Monitoring and evaluation is an essential step in the nutritional care process and is very important too. Monitoring specifically refers to the review and measurement of the patient/client/group status at a predetermined follow-up point with regards to the nutrition diagnosis, intervention plan, goals and outcomes. Evaluation, on the other hand, is the systematic comparison of current findings with previous status, intervention goals or a reference standard.

The purpose of monitoring and evaluation is to determine the degree to which progress is being made and goals or desired outcomes of nutrition care are being met. This step makes the nutritional care plan effective and responsive to the patient's needs. It includes three distinct and interrelated processes as highlighted in Figure 1.3.

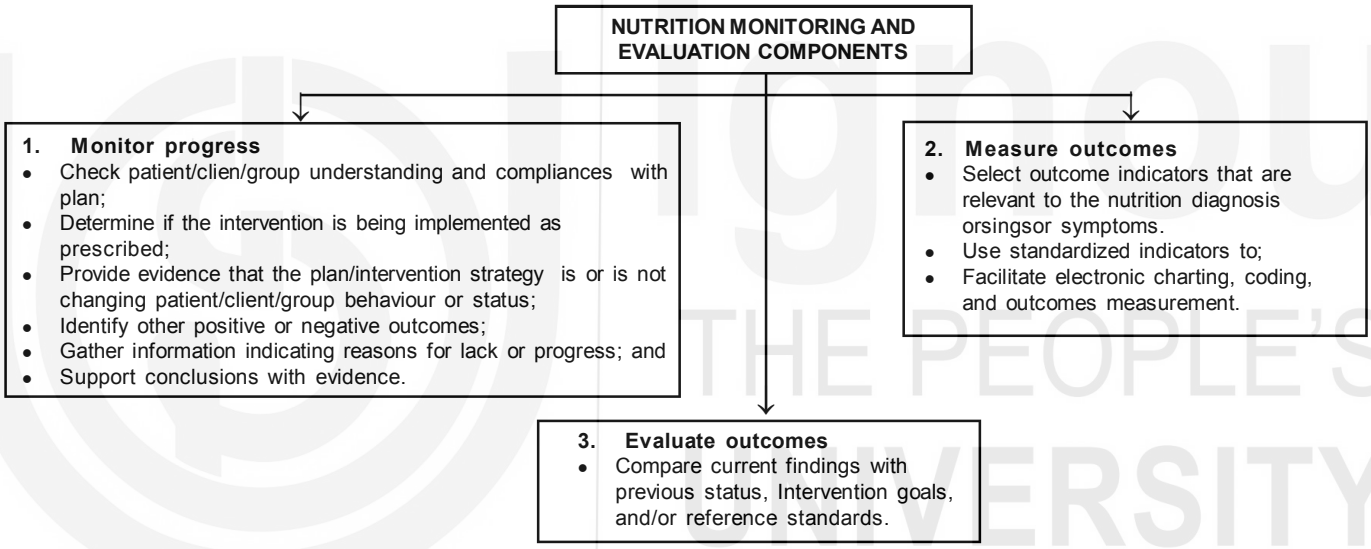

Figure 1.3: Nutrition monitoring and evaluation components

An evaluation of the extent to which the patient's nutritional requirements are being met can be done for example by means of the nutritional index (NI). This index calculates the extent to which an actual intake of a specific nutrient meets the recommended/desirable intake for a particular patient. NI can be calculated as:

$$NI = \frac{\text{Actual Intake of the Nutrient} - \text{Desirable Intake}}{\text{Desirable Intake}}$$

Now, how to interpret the value obtained from NI. If the actual daily intake exceeds the desirable intake, the NI is stated as a positive percentage while if less than the desirable intake, then it is stated as a negative percentage. Several negative NI days is an indicator of objectives not being met and that the care needs to be evaluated and changed.

Besides nutrition monitoring and evaluation, documentation too is an important part of the nutrition care process. This is described next.

1.3.5 Documentation

Documentation is an essential aspect of the nutrition care process. It helps the patient to understand the nutritional care plan and their role in this process. It helps to ensure that nutritional care will be relevant, complete and effective. It also serves as a

communication tool with the other members of the health care team. The documentation should be complete, clear, concise, legible and accurate. A format frequently used for medical record documentation is the problem-oriented medical record (POMR). This provides a vehicle for recognition of all the patient's problems and for coordination of the activities of all members of the health care team. It consists of four major parts — the database, a problem list, the initial care plan and progress notes.

Entries into the medical record can be done in many styles. One of the most common forms is the 'SOAP' note (Subjective, Objective, Assessment and Plan). Various health professionals, dietitians, physicians, nurses and social workers routinely collect much of this information. This entire team of health care professionals ensures that all aspects of nutritional care are noted in place as a part of the total health record. Let us see what SOAP is:

Subjective – the data includes information obtained from the patient or the patient's family regarding the problem.

Objective data – the data is gathered from tests, analysis, diagnostic procedures and observations by health care team.

Assessment – interpretation of patient's status is based on subjective and objective data.

Plan – specific plans are stated for dealing with each problem such as specific treatment plans, nutritional care plans, modified diet, nutrition counseling goals etc.

The clinical dietician should document the actual nutritional care provided. This should include the type of diet, adjustments for intolerance of the diet and diet instructions given.

With the documentation step, we conclude our study on the nutritional care process. We shall try to recall what we have learnt so far by answering the questions included in the check your progress exercise 2, given next. Thereafter, we shall move on to the importance of coordinated nutritional and rehabilitation services.

Check Your Progress Exercise 2

1. What is a nutritional care process? List the steps involved.

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2. What do you understand by ABCD analysis?

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3. Briefly discuss the relevance of implementing, evaluating the nutritional care plan.

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4. What is meant by SOAP note?

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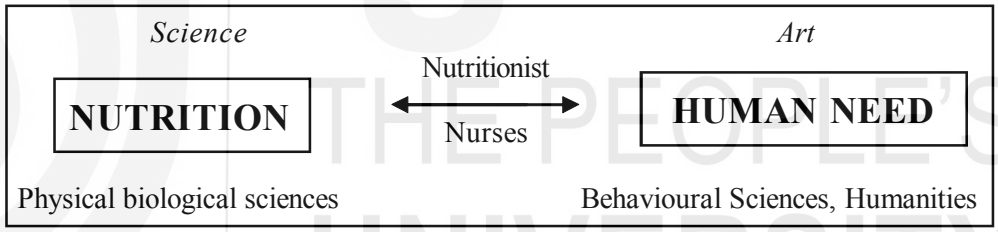
   .....

   .....

1.4 IMPORTANCE OF COORDINATED NUTRITIONAL AND REHABILITATION SERVICES

In our previous section, we learnt about the four step nutritional care process and the advantages of planning and documentation involved in such a process. Here, in this section, we shall deal with the rehabilitative services and the nutritional care for the patient. What do we mean by the terms *rehabilitation* and *nutritional care*? What is their significance and what is the role of health care professionals, especially dietitians in providing these services to the patients. Also, how can patients effectively utilize these services? These are a few of the issues with which we are going to deal in this section. So let us first understand the meaning and significance of nutritional care and rehabilitation

Nutritional care can be recognized as both a science and art. Can you tell why? It is considered as a *science* because the rapid advances in scientific knowledge provides all health care providers with a strong foundation on which the professional practice is based. Advances in nutritional sciences provide for such a base for nutritional care that is comprehensive, collaborative and continuing. It can be referred to as an *art* (an exceptional ability to conduct human activity) since it involves knowing and caring about people and their needs. Hence, it becomes all the more essential and imperative that all health care practitioners must base their work on sound scientific knowledge as well as, their patient's needs. Therefore, you would realize, as well as, appreciate the collaborative efforts in many aspects of both nutritionist and nurses working together and functioning as catalysts. This significant role that brings scientific knowledge and skill together to bear on patient's nutritional needs can be represented as:



All individuals want to have a long and healthy life. There is no doubt that adoption of healthy nutrition lifestyle and the practice of good nutrition habits would help eliminate many health problems caused by malnutrition. Here, the role of a health professional or a dietitian comes into picture. A health professional needs to have a sound knowledge about nutrition and must be able to apply the principles of sound nutrition practice to cater to the needs of patients. These include all diet-related questions and complaints to which clear and simple explanations must be provided by the health professional.

In many cases, a patient has to undergo diet therapy which becomes a part of their medical treatment. In such instances, the eating habits need to be changed, and the patient will require advice or instructions for the dietary modifications. This information is provided to them by a dietitian and from other health care professional.

The dietitian and the nurse hold unique position on the health care team in relation to the patient's nutritional needs. Their roles are enhancing as their team responsibilities expand. The dietitian determines nutritional care needs in relation to medical diagnosis and care, as well as, individual patient needs. The nurse assists the dietitian with this nutritional care applying it in the general nursing care. By this, we can realize that in many respects, these two health professionals are closest to the patient and the family and have the opportunity to determine many of the patient's needs. They are the ones who coordinate services and help the patient understand and participate in personal care. Hence, individualized care must be the focus of therapy. In fact, the doctor, nurse and dietitian working together as a team provide the best possible nutritional care.

Now let us move on to the concept of rehabilitation.

You would realize that some patients have problems that seriously limit their ability to function normally in everyday activities. In such cases, special planning can help them achieve and maintain their optimal level of functioning. The care that aims to prevent further disabilities and to restore function is called as *rehabilitation*. The planning that emphasizes rehabilitation is often beneficial to the clients with cardiovascular, respiratory and neurologic disorders. Nutritional rehabilitation focuses on maintaining adequate nutritional status and adjusting daily activities related to eating.

The patient is the focus of the team endeavour and must be included as an active and participating member. The patient himself is the one who probably has the greatest interest in his/her care plan. S(he) can work better with health team members if he is informed about his current nutritional status, the relationship between his food habits and nutritional status to his health. He is also needed to be informed about the care services, which the various health team members will provide for him and the resources available for us. Sharing the nutritional care plan and goals with family members helps in clarifying their role in assisting the patient. This plan also facilitates the communication between health-team members such as nurses and dietitians who work as colleagues and frequently meet to discuss the patient's nutritional needs. Often, the communication process involves consultations and referrals among health team members. The consultation is provided to a patient from a dietitian or nutritionist who develops a care plan to assist the client to make more appropriate food choices. While referrals are the written verbal information about the patient's problem and/or nutritional needs. The purposes behind making the referral are many. Let us see what these are. Referrals are made for:

- A specific kind of therapy
- Rehabilitation or training
- Education, and
- Special community services

Now, what is the information that must form a part of the referral? Well, one should first identify the patient's problem or need. This must be followed by his food habits, appetite, nutritional needs and diet instruction, and special instructions for feeding.

Having looked at the importance of nutritional care and rehabilitative services, next let us focus on the other important aspect of patient care i.e. nutrition/diet counseling.

1.5 PATIENT CARE AND COUNSELING

Since past three decades, there has been an increased emphasis on setting standards of practice to ensue the delivery of quality patient care. An increased focus has been there on cost control in health care settings, for effectively evaluating patient care programmes based, on two factors – cost effectiveness and provision of nutritional services. Within dietetics, models of quality patient care have standards for identifying patients requiring increased nutritional support or education, determining patient care priorities and spelling out the degree of care required with increasing concerns about health care costs.

Further, counseling is one of the most useful methods for assisting an individual to arrive at a solution of his/her problems. In this section, we shall get to know about the patient care process and the science and art behind dietetic counseling. So let us get started to learn about patient care.

1.5.1 Patient Care

The primary basic principle in nutritional practice to be valid must be person/patient-centered. It must be based on initial and continuing identified needs and updated

constantly with the patient, in order to provide essential physical care and support personal needs for maintaining self-esteem. The health care team in this process, as you would already know, involves a physician, dietitian, nurse and other health care professionals. There are 5 distinct yet constantly interacting phases in the care process. These include:

1. *Assessment:* A broad base of relative information about the patient's nutritional status, food habits, and life situation provides the necessary knowledge for making valid initial assessments. Useful information may come from a variety of sources, such as the patient himself, patient's chart, family, relatives, friends, hospital staff and related research.

2. *Analysis:* The data collected must be analyzed to determine specific patient needs, on the basis of which a list of problems may be formed.

3. *Planning Care:* The plan for care must always be based on personal needs and goals of the patient, as well as, on the identified medical care requirements.

4. *Implementing Care:* The patient care plan is put into action according to realistic and appropriate activities. In this case, nutritional care and education will involve decisions and actions.

5. *Evaluating and Recording Care:* The results are checked carefully (with each activity being carried out) to see if identified needs have been met. Hence any appropriate revision of the plan can be made as needed for continuing care. These results are recorded in the patient's medical record. A clear documentation of all the activities is essential.

With a brief knowledge about the patient care process, we now move on to a detailed overview on counseling its scope, process and approaches.

1.5.2 Counseling

The term 'counseling' or 'nutrition/ diet counseling' is a broader term than teaching. It is one of the most useful methods for assisting an individual to arrive at a solution of his/her problems. It is a personal meeting of two individuals – the *counselor*, who assists in analyzing and understanding the problem and the *counselee,* who has a problem and needs assistance in arriving at a solution for this problem. It has been described as: (1) an internal process for the counselee, (2) a sequence of events, and (3) the elements of interpersonal relationship between counselor and counselee. What is the role of counseling in patient care? Does it help to improve the existing state of the patient? What is the role of dietitian in it? Let us read and find out.

Nutrition or diet counseling is a primary educational activity of the dietitian. It incorporates the idea of working with a patient, encouraging him to make changes in his pattern of living that he sees as desirable and attainable and supporting him throughout the process. It is a process that assists people in learning about themselves, their environment and methods of handling their roles and relationships. It involves problem solving, identifying goals and change, counselor assist individuals with the decision-making process, resolving interpersonal concerns and helping them to learn new ways of dealing with and adjusting to life situation. Counseling aims to help clients make and sustain desired changes over time. It is based on two premises:

i) each person controls his own life and behaviour, and

ii) each individual has a background of personal interactions, socialization and education that he/she uses to make choices about their behaviour.

Counseling is explored as a four-stage process. The first stage concentrates on the development of a trusting, helping relationship between the counselor and the counselee. The remaining three stages focus on problem-solving. Dietetic counseling includes in its scope behaviour modification, counseling and cognitions, nutrition counseling and multicultural communications.

The health professional, including the dietitian uses the knowledge and skills to assist patients to identify problems, discover and list possible solutions, consider the consequences of each alternative, choose a solution and incorporate it into their daily activities.

In most instances, it is important to outline a plan to provide patient education or counseling. Some of these areas include:

i) reinforcement of sound eating habits,

ii) positive suggestions to improve poor habits,

iii) discussion of reasons for diet modifications,

iv) guidance and practice in planning meals meeting specific diet modifications,

v) training in various feeding techniques, and

vi) explanations of various assessment and treatment techniques.

There are almost 40 different therapy models or approaches but a few are most commonly used. Let us then understand various prevalent theories and approaches that are relevant to counseling.

Theories and Approaches Relevant to Counseling

Few theories and approaches relevant to counseling are reviewed herewith.

Reality Theory

Developed in the 1960s by *William Glasser*, a psychiatrist, reality therapists view human nature in terms of behaviour. They believe that human behaviour is motivated by two common basic needs: (a) the need to love and be loved, and (b) the need to feel worthwhile to ourselves and others. People are responsible for their behaviour and behaving in a responsible manner helps people fulfill their needs. Clients are helped and encouraged to make value judgments about their own behaviour. Once the chosen behaviour is viewed as responsible, clients feelings about their behaviour tend to become positive. This approach can help the dietetic practitioner to use a structure approach for assisting a client to change inappropriate eating behaviours.

Behavioural Counseling

This evolved from the early theories of behaviourism. The focus is on examining current behaviours and learning new ones. It is believed that feelings and thoughts may come before the behaviour, not after. For example, a person feels upset, so he/she eats.

Cognitive – Behavioural Approaches

They include *psychoeducational* and *rational-emotive therapy.* The goal is to identify problem behaviour and irrational beliefs and then to design strategies for immediate action plans. Psychoeducational therapy specifically involves a process of learning about oneself, gaining self-understanding and self-knowledge.

Once the client has progressed in the understanding, he/she will be in a position to regulate his/her behaviour in accordance with some standard. This therapy is intended to teach the individual to 'manage' physical and mental impulses.

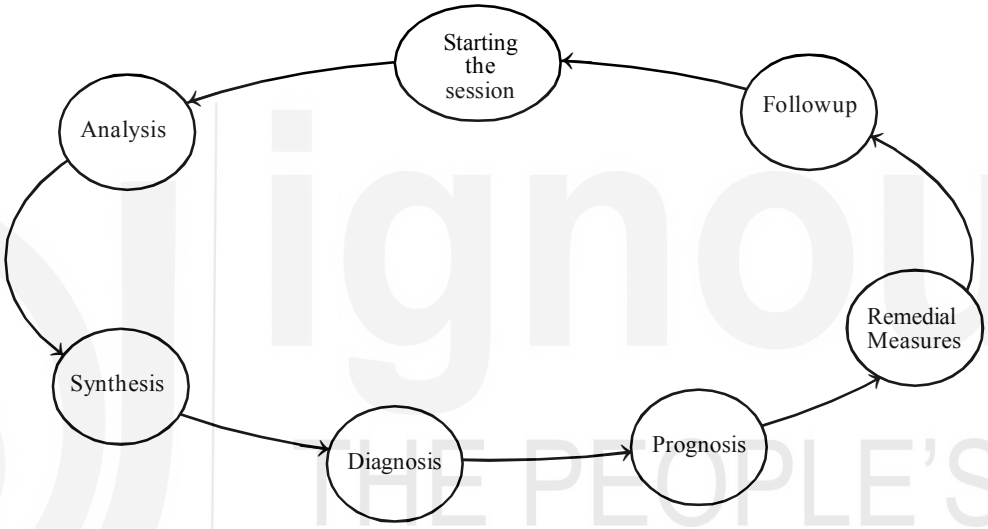
The rational-emotive therapy is based on the premise that negative self-talk and irrational ideas are a major cause of emotion-related difficulties. The therapy aims to provide the client with an insight to stimulate logic and emotion simultaneously in the direction of the planned change. For example, when working with a patient with high serum cholesterol, the dietitian would help the client to: (a) think that the cholesterol levels are very high, (b) feel emotions like concern of fear in order to get the patient to make an effort toward change and sustain it, and (c) to encourage patient that foods lower in fat and cholesterol are to be preferred.

The Family Nutrition Approach

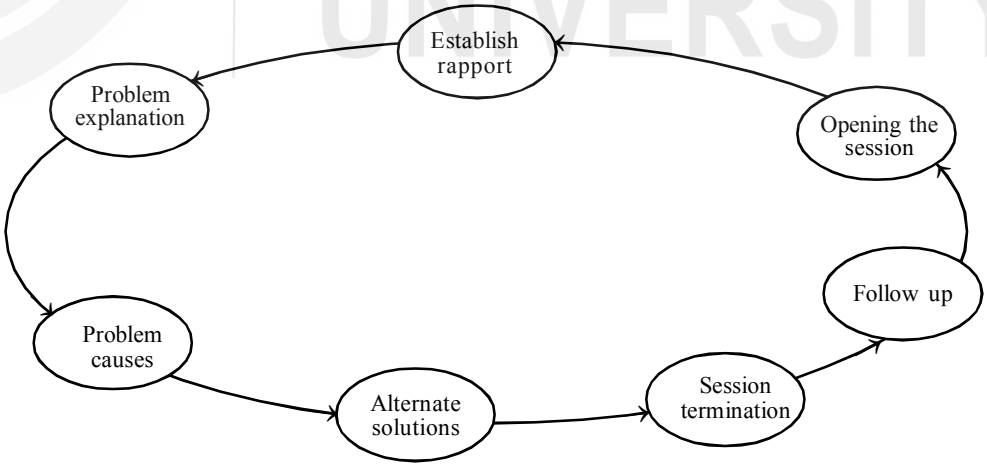
This involves relatives/family who live in the client's household; in assisting the client to make necessary dietary changes to prevent or to control diet-responsive diseases and to maintain client adherence to nutrition advice over the long-term. Family counseling is used very commonly when working with children and adolescents. Family counseling is appropriate where the client's problems are related to his relationship or function in the family. Working with the family helps to achieve improvement faster and prevent lapses than if you treated/worked with the person alone.

Directive and Non-directive Counseling

Directive Counseling tends to be appropriate when the counselor is aware of the problem and/or is concerned about the behaviour of the patient but the latter is unaware about the problem and is avoiding acknowledging it. In contrast, *non-directive counseling* is more appropriate when the patient or the counselee has insight and says that the counselor's help is needed to solve the problem. The direct and non-directive counseling process is graphically illustrated in Figure 1.4 (a) and 1.4 (b).



(a) : Directive Counseling



(b) : Non-directive Counseling

Figure 1.4: Directive and non-directive counseling process

The non-directive approach is often called 'client-centered'. A basic assumption is that humans are basically rational, socialized and realistic. If a person's needs for a positive regard from others and for positive self-regard are satisfied, the individual can realize the inherent tendency he/she possesses towards realizing their potential for growth and self-actualization. Counseling releases the potentials and capacities of the individual.

One of the assumptions is the relationship between the counselor and the client. The client cannot be helped only by listening to the knowledge the counselor possesses or to the counselor's explanation of the client's behaviour or the personality. Prescribing "cures" or corrective behaviours are not considered to be of a lasting value. The relationship that is most helpful is the one that enables the patient (client) to discover within himself/herself the capacity to change and grow. Using this relationship four specific characteristics are desirable: acceptance, congruence, understanding and the ability to communicate these to the clients.

The counselor should accept the clients as individuals, as they are. When a counselor accepts the person unconditionally and non-judgmentally, then the patient begins to trust the counselor. Note: Trust is focused on predictability, genuine concern and faithfulness.

Good counselors are integrated, consistent with no contradictions between what they say and what they are. The counselor's verbal and non-verbal behaviours should be consistent. Empathy is essential to non-directive therapy. Thus, the counselor needs to be a good listener, have intuition, provide feedback on the data, feelings, as well as, provide motivation and inspiration.

In directive counseling, the counselor initiates the discussion. Clients tend to be more likely to become resistant or defensive. Thus the counselor should be very sensitive to all verbal and non-verbal behaviour, as well as, supportant. Such a relationship (directive counseling) is more appropriate between managers and subordinate rather than between dietitian and client. In general, directive counseling techniques are used to expose poor employee performance about which employees are unaware or unwilling to expose it themselves.

Let us next learn about the different counseling strategies.

Counseling Strategies

The counseling strategies which may serve to be useful are described herewith.

- *Individual Counseling:* Individual counseling is personal counseling. The first step in this is to establish a sense of trust and a therapeutic alliance with the patient so as to ensure a productive counseling session. A counselor can use several techniques to enhance the process of learning. These are:
    - Clarify goals at the beginning of the session
    - Start instruction in a positive manner
    - Approach the patient in a competent, quietly enthusiastic manner
    - Keep the session patient-centered
    - Focus on the topic to be covered
    - Adjust counseling approach as the need arises
    - Find out if the client understands what he is being told
    - Give honest, sincere praise for successes
    - Use teaching techniques that impart on more than one of the client's senses and actively involve him.
- *Group Counseling:* Group counseling is a technique where a group of person is counseled by employing group interaction method for arriving at a solution to the problem common to the group. All the group members are given an opportunity to discuss their problems together, in a free atmosphere. The group counseling process is highlighted in Figure 1.5.

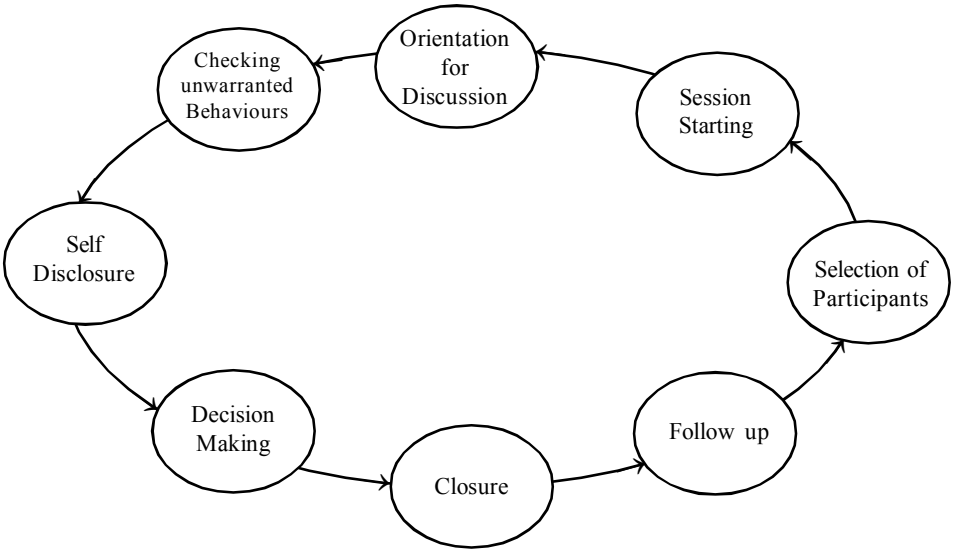


Figure 1.5: The group counseling process

Group counseling can be provided via formal classroom sessions or small group sessions. An active participation of group members facilitates the process of learning. Specific techniques are used for the purpose of instruction and these could be a lecture either with or without additional teaching aids or a role-play, demonstration and practical sessions.

An important strategy could be to conduct small group meetings for behavioural change encouraging full participation. The group atmosphere provides support and motivation to members to help them achieve their individual goals. Recommended actions often seem more acceptable when group members tell how they were helped by those actions. Also, learning in groups is sometimes more interesting and 'fun' than in a one-to-one setting. However, a person benefits from a group only if he can identify with it. In cases, such as these, individualized nutrition counseling sessions are preferred.

So you would have realized how much important it is to motivate the patients and to maintain their interest during counseling sessions and ensure behaviour modifications. Let us next have a look at a few factors which play a major role in contributing towards motivation.

- *Psychological factors:* Depression, anxiety or phobia induced by illness, life-style changes or medication effects, may hinder the ability to comply with the desired health behaviour changes.
- *Psychosocial factors:* These may prevent patients from expressing concern for their health. They may lack confidence in the health professional or simply be unable to cope with dietary changes at that particular point of time because of the degree of illness or personal problems.
- *Physical factors:* The drugs or illness may induce pain, fatigue or depression which might block desire or ability to follow health care instructions.
- *Personal factors:* There may be a language barrier or a lack of transportation or money for clinic visits.
- *Counselor-related factors:* A personality conflict may exist between the patient and counselor.

Next, let us review a few tips for counseling children and elderly.

Children:

- Assess the child's stage of development.
- Adjust counseling for a child's dependency needs, lack of experience and the development tasks faced by him.

- Have a cheerful and enthusiastic approach for better adaptation of nutrition and dietary practices.
- Provide them with opportunities to learn by playing games, painting, reading stories, using puppets, handling and tasting food.
- Since they have not developed many ingrained habits, they learn more quickly and so teaching must be made more interesting.

Elderly:

- Emphasize and build on established dietary practices and attitudes.
- Focus on the positive influence of a good diet so as to motivate them on making changes in the dietary habits. The focus, in most cases must be on good health.
- Encourage their full participation in counseling programme.
- Establish rapport with them so as to ensure their interaction and discussion on various issues.
- Utilize the benefits of group discussions to bring more reluctant persons into the group and reduce anxiety related to educational programme.
- Concerning an appropriate mode of feeding and the training and education needs for the patient, staff and family to carry it out.

In this section we learnt about the significance and methods of patient counseling. We end our discussions on this chapter here about the nutrition care process. However, before proceeding to read the next unit attempt the questions given in check your progress exercise 4. It will help you in gaining an in-depth understanding.

Check Your Progress Exercise 4

1. Discuss the role of nutrition in patient care.

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2. What do you understand by the term diet counseling? List a few counseling strategies.

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3. Suppose you were to counsel a group of 8-10 years old anaemic girls. What are the points you would keep in mind while counseling the group?

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4. Enumerate the five phases involved in the nutritional care process.

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1.6 LET US SUM UP

In this unit you have learnt how to render effective nutritional care in therapeutic nutrition. The primary goal of diet therapy is to achieve or maintain optimal nutrition status. The nutrition care process is a systematic and logical approach to ensure effective and successful nutrition intervention. The basic steps in the process include assessing nutrition status, interpreting assessment data to determine nutrient requirements, developing a plan of action for nutritional needs, implementing and evaluating the plan along with documentation of the entire process.

Further, the unit focused on the scope, process, approaches and strategies common to dietetic counseling.

1.7 GLOSSARY

Android obesity : the centric fat distribution patens with an increased disposition towards the abdominal and waist area.

Anticonvulsants : drugs that prevent, reduce or stop convulsions or seizures.

Cerebral Palsy : a group of chronic foundations affecting body movements and muscle coordination.

Clinical dietetics : the application of dietetics in a hospital or health care institutional setting.

Diet history : a review of an individual's usual pattern of food intake and the food selection variables that dictate the food intake.

Diet therapy : the role of food and nutrition in the treatment of various diseases and disorders also known as therapeutic nutrition.

Dietetics : a science and art of feeding individuals based on the principles of nutrition.

Gynoid obesity : the fat distribution as the hips and thighs.

Leukoplakia : a precancerous lesion that develops on the tongue to the inside of the cheek as a response to chronic irritation.

Medical Nutrition Therapy : the assessment of the nutritional status of a client followed by nutrition therapy ranging from diet modification to the administration of eternal and parenteral nutrition.

Muscular therapy : a group of diseases involving muscle deterioration.

Nutritional index : the extent to which an actual intake of a specific nutrient meets the recommended desirable intake for a particular patient.

Oncology : the branch of medicine concerned with the study and treatment of tumors.

Over-the-counter drugs : drugs those are available without a prescription.

1.8 ANSWERS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress Exercise 1

1. a) Dietetics is the science and art of feeding individuals based on the principles of nutrition.

   b) Medical Nutrition therapy is defined as the assessment of the nutritional status of a patient followed by nutrition therapy ranging from diet modification to the administration of enteral and parenteral nutrition.

   c) Therapeutic nutrition is the study of the role of food and nutrition in the treatment of various diseases and disorders.

2. A good and balanced diet improves the quality of life to a great extent. Poor eating habits and inadequate food intake are the major causes of a disease. A well balanced diet, which is adequate nutritionally, goes a long way in protecting the human body from diseases, i.e. increases immunocompetance, strengthens mental functions and supports good physical strength.

3. The major areas of specialization for a dietitian include administration, education, clinical, research, community, consultations, teaching and academics. *Clinical dietitians,* sometimes called therapeutic dietitians, are associated with health care institutes, hospitals and nursing homes. Depending on the nutritional needs of the patients, they prepare their diet charts and monitor the results of diet therapy. They confer with doctors and other members of the health care team about patients' nutritional care, instruct patients and their families on the requirements and importance of their diets, and suggest ways to maintain these diets at home.

Check Your Progress Exercise 2

1. Nutritional care process is a systematic and logical approach to ensure effective and successful nutrition intervention. The five steps in the nutritional care process include: assessing nutritional status, interpreting assessment data to determine nutrient requirements, developing a plan of action for meeting nutrition needs, implementing and evaluating the plan along with proper documentation.

2. Nutrition assessment involves a series of processes referred to as the 'ABCD' analysis, where:
   - A stands for Anthropometric measures.
   - B for Biochemical investigations.
   - C for clinical analysis.
   - D for diet history and nutrient intake.

3. The relevance of implementing and evaluating nutritional care plan include provision of proper care to the patient followed by intervention at specific period to establish programme in order to meet objectives. It also makes the process effective and responsive to the patient's needs.

4. Entries into medical record can be done in many styles. One of the most common being 'SOAP' note. (Subjective, Objective, Assessment and Plan). Refer to sub-section 1.3.5 for details on SOAP.

Check Your Progress Exercise 3

1. The role of nutrition in patient care is that of providing effective nutritional support to improve nutritional status. Nutrition also has a role in providing quality standards in dispensing of nutrition services and educating patients.

2. Diet counseling is a primary educational activity of the dietician, which involves working with a patient, encouraging him to incorporate changes in diet and lifestyle for the better. The two counseling strategies include individual counseling and group counseling.

3. The points to be kept in mind before counseling children between the age group of 8-10 years are:

   - assess the child's stage of development,
   - adjust counseling for a child's dependency needs,
   - have a cheerful and enthusiastic approach for better adaptation of nutrition and dietary practices, and
   - provide opportunity to learn by playing games, puppetry etc., and make teaching more interesting.

4. The five distinct phases in the focus of care of patients include:

   assessment, analysis, planning, implementing, evaluating and recording care.