



Uttar Pradesh Rajarshi Tandon
Open University, Prayagraj

UGHN -118

Nutrition And Health Communications

Block-1

Concepts and Theories of Communications in Nutrition and Processes of NHC

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UTTAR PRADESH RAJARSHI TANDON OPEN UNIVERSITY
UGHN 118- Nutrition and Health Communication

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UGHN 118- Nutrition and Health Communication

First Edition: October 2024

ISBN: 978-93-48987-66-2

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Printed By- K.C.Printing & Allied Works, Panchwati, Mathura -281003.

COURSE INTRODUCTION

The objective of this course is to provide basic introduction about concepts and different theories of communication in nutrition processes. Nutrition education is the process of informing people about nutrition information, while nutrition communication is the process of using that information to change dietary habits. Nutrition education can include activities like teaching people about healthy eating habits and lifestyles, and can take place in schools, community centers, or public health campaigns. Nutrition communication can include nutrition education, but also other actions that recognize that people's nutrition-related behaviors are influenced by their environment. For example, nutrition communication might advocate for sustainable lifestyle changes like balanced diets and moderate exercise to help people lose weight.

While nutrition education activities usually focus on informing the individuals about healthy eating habits and lifestyles, communication recognizes that nutrition-related behaviour of an individual is the product of his/her continuous interaction with the environment. The primary objective of a nutrition intervention programme is the nutritional improvement of the target group as measured by the indicators of nutritional status. Nutritional status is a complex phenomenon which is influenced by many factors external to an educational intervention. The time frame within which different indicators are affected. The nutritional objectives would therefore be defined with short term and long term objectives. If we design an educational programme aimed to change behaviour in the short term (for example, improving complementary feeding practices of 6-9 months old infants) within the long term objective of improving nutritional status (for example improving weight-for-age), then we will have to see that the external factors which affect the nutritional status are favourable.

These external factors, for example , are, improved food production, availability of food and improved health facilities. You know that all these are conditions which are outside the control of communication intervention. Thus, short term objectives can be achieved based on the interventions which are independent of external factors. For example, improving awareness in mothers about nutrition. You may realize that it is important to set nutritional objectives in measurable terms but understand that the long term objectives will be achieved only when factors external to communication interventions are conducive to their achievement. The course is organized into following two blocks as under:

Block: 1

It covers the concepts and theories of communication in nutrition

Block: 2

It deals about different programs and experience of NHC and Nutrition-Health-Communication



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Nutrition And Health
Communications*

BLOCK

1

Block-1

Concepts and Theories of Communications in Nutrition and Processes of NHC

Unit 1: Concepts and Theories of Communication in Nutrition 27

Unit 2: The Components and Processes of NHC 49

Block Introduction

This is the first block (Concepts and Theories of Communications in Nutrition and Processes of NHC) of Nutrition And Health Communications. It consists of two units as under:

Unit 1: Concepts and Theories of Communication in Nutrition

Unit 2: The Various Components and Processes of NHC

The introduction of first block is as under:

Communication has an essential role in any action that aims to improve health. It is difficult to imagine how a message could be delivered to promote healthy choices if we could not communicate. The communication process is a multi-dimensional transaction influenced by a variety of factors. In health promotion work the successful exchange of information between the practitioner and target audience is an area that has received mixed attention. Most commonly the emphasis on theory is clear, but the application of theory to practice is limited. This unit introduces five theoretical models that can be applied to health promotion work. This unit will seek to bridge the theory-practice gap using a range of examples enabling the practitioner to link theoretical models to practice

Nutrition communication' can be defined as the process by which nutrition knowledge is converted into dietary change. Nutrition communication then includes nutrition education--the process by which people are informed, and sometimes empowered by, nutrition information--but also other actions taken to improve peoples' diets such as restricting misinformation about nutrition or manipulating the composition, availability or price of foods. Dietary goals for populations and food-based dietary guidelines for individuals constitute the starting point for nutrition communication, and if these could be more evidence-based we would be in a much stronger position to develop more effective nutrition communication. A population-based approach to nutrition communication is complementary to an individualistic approach in theory, but in practice they compete for attention in food policy making circles.

Unit- 1: Concepts and Theories of Communication in Nutrition

Structure

Objectives

- 1.1 Introduction
 - 1.2 Nutrition Education
 - 1.3 Health communication
 - 1.4 Importance of Nutrition Education
 - 1.5 Definition of Health
 - 1.6 Role of medicine and medical science
 - 1.7 Formal vs. Informal Communication
 - 1.8 Theories of Nutrition Education
 - 1.8.1 Cognitive – Gestaltist Theory
 - 1.8.2 Behaviourist Theory
 - 1.8.3 The Communication Approach Theory
 - 1.8.4 Diffusion – The Special Type of Communication
 - 1.8.5 The Social Marketing Approach Theory
 - 1.9 History of Nutrition –Health and Communication
 - 1.9.1 History of Human Nutrition
 - 1.10 Scope of Health Communication
 - 1.11 Summary
 - 1.12 Terminal questions
- Further readings

1.1 Introduction

We will start this unit by learning about the history of nutrition education and by exploring how the need for nutrition education evolved over time. We will then discuss some definitions of nutrition education and explain the scope. So let us begin our study on the topic by looking at the history of nutrition education. The beginning of modern nutrition education may be traced to the early attempts to prevent protein energy malnutrition (PEM) in infants and children, primarily due to faulty weaning. The need for nutrition education evolved about half a century ago, when in 1950, the first report of the Joint Food and

Agriculture Organization/ World Health Organization (FAO/WHO Expert Committee on Nutrition), recognized the need for nutrition education in developing countries.

This report brought this need to international attention and emphasized the importance of nutrition education in the health sector. By 1958, the same committee reported, “Education in nutrition is a necessary part of practical programmes to improve human nutrition...” and recommended the channels for nutrition education such as schools, maternal child health (MCH) centers, community development and related programmes. We can thus see that, nutrition education, as an intervention came into prominence with the realization that malnutrition to a large extent is not only due to inadequate food availability but also due to faulty food habits, some of them based on food prejudices, superstitions or taboos, and importantly, lack of awareness of the right food choices.

In this unit, we will learn about the basic concepts related to nutrition education. We will learn about the potential challenges and constraints of nutrition education and various theories of nutrition education. The process of nutrition education consists of four phases. These are: conceptualization, formulation, implementation and evaluation. In this unit, we will study in detail about concepts and theories of communication, different components and processes of NHC and programs and experiences of NHC global and Indian Perspectives.

Objectives

This is the first unit (Concepts and theories of communication in nutrition) of first block (Concepts and theories of communication in nutrition and processes of NHC). After studying this unit, you will be able to:

- To discuss concepts of nutrition education & its importance
- To discuss formal & non-formal communications
- Describe different theories of nutrition education
- History of nutrition–health and communication & its scopes

Therefore, nutrition education was accepted as an important measure for the promotion of nutrition and well being, and was placed at a level of priority equal to that of other interventions. So then what is nutrition education? Nutrition education has been viewed as the process of persuading people to act in their own best interest for attaining nutritional well being. It has long been established in an informal unstructured way, often being embedded in traditional folklore. Let us get to know more about this process by looking at some important definitions of nutrition education, as proposed by some experts. “According to WHO, the focus of health and nutrition education is on people and action. In general, its

aims are to persuade people to adopt and sustain improved/ desirable nutrition and health practices and to take their own decisions, both individually and collectively to improve their nutritional and health status, and environment.

Nutrition education can be defined as any set of learning experiences designed to facilitate the voluntary adoption of eating and other nutrition-related behaviour conducive to health and well being. Nutrition education is the process of applying a knowledge of nutrition related scientific information and social and behavioural sciences in ways designed to influence individuals and groups to eat the kinds and amounts of foods that will make a maximum contribution to health and social satisfaction. Nutrition education may be defined as a group of communication activities aimed to bring about a voluntary change in practices, which have an effect on nutritional status of a population. The ultimate goal of nutrition education is to improve nutritional status.

1.2 Nutrition Education

The term nutrition education applies to any communication system that teaches people to make better use of available food resources with the ultimate goal of improving nutritional status.” So, you can note that there are many definitions of nutrition education. Having gone through these definitions, in your opinion, what is the basic concept highlighted in these definitions. Yes, the concept highlighted is that nutrition education essentially involves communication for behaviour change. As a worker in public nutrition, you will come across terms like Communication for Behaviour Change (CBC) and Information, Education, Communication (IEC) or Nutrition Education (NE). What are these terms? Are these interchangeable? Let us see first how they are defined. “Communication for Behaviour Change (CBC) is a multi-level tool for promoting and sustaining risk-reducing behaviour change in individuals and communities by distributing tailored health messages in a variety of communication channels”.

Information, Education, Communication (IEC) combines strategies, approaches and methods that enable individuals, families, groups, organizations and communities to play active roles in achieving, protecting and sustaining their own health. Objectives of IEC are to identify and promote desirable behaviours”. We can note that CBC, IEC and nutrition education are, in fact, interchangeable, since they all aim at creating awareness, motivating people to change behaviours and result in necessary action. Sometimes it is customary to use the term Nutrition Education communication (NEC) in place of nutrition education. We have read that nutrition is a determinant of health status, therefore, nutrition education communication falls under the broad area of health communication. Let us then try to understand what is health communication?

1.3 Health communication

Health communication can be broadly defined as the systematic attempt to influence positively health practices, using principles, instructional design, social marketing, behaviour analysis, and medical anthropology.” The primary goal of health communication is to facilitate change in health-related practices and, in turn, health status. Conceptualization and the Process of Nutrition Education You should know here that Nutrition Education Communication (NEC) strategy is within the reach of most programmes. It can teach people beneficial facts about nutrition and food, can help them develop necessary skills, and can communicate in a manner that motivates them to make life style changes on a sustained basis. So, we can conclude here that nutrition education involves a set of communication activities and falls under the umbrella of health communication.

Let us study about the role and importance of nutrition education in some more detail in the next section. Nutrition is a key determinant of health of a population, and of growth and development in children. Dietary guidelines are tools that translate the science of nutritional requirements to a practical pattern of food choices for the general population. On a national level, they provide guidance for health promotion and risk reduction, and often form the basis of national food and nutrition policies and education programs. Over time, these guidelines are constantly revised to include up-to-date evidence from experimental studies and large population databases, to which sophisticated dietary analyses have been applied.

1.4 Importance of Nutrition Education

Now, that we know what nutrition education is, can you visualize the importance of this important activity. Yes, nutrition education can play a vital role in improving nutritional status of all the individuals within a family or community, if they adopt positive nutrition behaviours. Nutrition education also has a vital role to play for policy makers as it helps mainstreaming nutrition into various projects and programmes. The following points tell us why nutrition education is important and essential:

1. Nutrition education reinforces knowledge and corrects faulty concepts about nutrition.
2. It allows the individual to evaluate the nutrition information he or she receives.
3. It promotes the best use of an individual’s limited economic resources.
4. It promotes the concept of health as a valued community asset.
5. Nutrition education equips the individuals with the ability to make judicious food choices for health and well being. Nutritionally aware parents can pass on appropriate eating habits to their children. If importance of good nutrition is ignored, undesirable eating patterns may develop from early childhood causing eating problems leading to malnutrition (both under nutrition and

overweight/obesity). Thus, members with different physiological needs in a family can benefit from nutrition education as follows:

- If families learn the importance of child nutrition, they can promote optimal development of their children. Mental development is almost complete by the second year of life and nutrition is crucial for brain development.
- School children and adolescents, who are nutritionally aware of healthy foods, can adopt practices, which will help them in normal growth and development and will enable them to avail of maximum benefits from education.
- Adolescent girls by understanding the importance of nutrition and healthy food choices facilitate their own optimal growth during adolescence and ensure safe motherhood in future.
- Pregnant women, by making the right food choices, increase their chances of a healthy pregnancy and a normal birth weight newborn.

1.5 Definition of Health

According to the World Health Organization (WHO), health is a state of complete physical, mental, and social well-being, and not just the absence of disease or infirmity. It's also defined as the ability to lead a productive life socially and economically. Health is a relative state that allows people to function well in their environment, expressing their unique potential. It's also a resource for everyday life, not an end in itself. Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition.



Fig. 1 Various elements of Good Health

Health has a variety of definitions, which have been used for different purposes over time. In general, it refers to physical and emotional well-being, especially that associated with normal functioning of the human body, absent of disease, pain (including mental pain), or injury. Health can be promoted by encouraging healthful activities, such as regular physical exercise and adequate sleep, and by reducing or avoiding unhealthful activities or situations, such as smoking or excessive stress. Some factors affecting health are due to individual choices, such as whether to engage in a high-risk behavior, while others are due to structural causes, such as whether the society is arranged in a way that makes it easier or harder for people to get necessary healthcare services. Still, other factors are beyond both individual and group choices, such as genetic disorders.



Fig. 2 Different components of Health/body system

The meaning of health has evolved over time. In keeping with the biomedical perspective, early definitions of health focused on the theme of the body's ability to function; health was seen as a state of normal function that could be disrupted from time to time by disease. An example of such a definition of health is: "a state characterized by anatomic, physiologic, and psychological integrity; ability to perform personally valued family, work, and community roles; ability to deal with physical, biological, psychological, and social stress. Then, in 1948, in a radical departure from previous definitions, the World Health Organization (WHO) proposed a definition that aimed higher, linking health to well-being, in terms of "physical, mental, and social well-being, and not merely the absence of disease and infirmity. Although this definition was welcomed by some as being innovative, it was also criticized for being vague and excessively broad and was not construed as measurable. For a

long time, it was set aside as an impractical ideal, with most discussions of health returning to the practicality of the biomedical model.

1.6 Role of medicine and medical science

Contemporary medicine is in general conducted within health care systems. Legal, credentialing and financing frameworks are established by individual governments, augmented on occasion by international organizations, such as churches. The characteristics of any given health care system have significant impact on the way medical care is provided. From ancient times, Christian emphasis on practical charity gave rise to the development of systematic nursing and hospitals and the Catholic Church today remains the largest non-government provider of medical services in the world. Advanced industrial countries (with the exception of the United States) and many developing countries provide medical services through a system of universal health care that aims to guarantee care for all through a single-payer health care system, or compulsory private or co-operative health insurance. This is intended to ensure that the entire population has access to medical care on the basis of need rather than ability to pay. Delivery may be via private medical practices or by state-owned hospitals and clinics, or by charities, most commonly by a combination of all three.



Fig. 3 Differet elements of health checkup

Most tribal societies provide no guarantee of healthcare for the population as a whole. In such societies, healthcare is available to those that can afford to pay for it or have self-insured it (either directly or as part of an employment contract) or who may be covered by care financed by the government or tribe directly. Transparency of information is another factor defining a delivery system. Access to information on conditions, treatments, quality, and pricing greatly affects the choice by patients/consumers and,

therefore, the incentives of medical professionals. While the US healthcare system has come under fire for lack of openness, new legislation may encourage greater openness. There is a perceived tension between the need for transparency on the one hand and such issues as patient confidentiality and the possible exploitation of information for commercial gain on the other.

1.7 Formal vs. Informal Communication

Communication plays a key role in our life, as people interchange their views and thoughts by communicating. It is a core tool that plays an important role even in the growth of the organization. In an organization, there are two channels of communication - formal and informal. The main difference between the two is that formal communication is backed by predefined channels while there is no such rule for informal communication. People often confuse these two. To help you understand, we have come up with an article which will clear all your doubts between formal and informal communication.

What is Formal Communication?

The communication in which information flows through proper and pre-defined solutions is referred to as Formal Communication. It follows a hierarchical chain that is generally established by the organization itself. This type of communication is a must in the workplace because employees are expected to follow formal communication while performing their duties. Some general examples of formal communication are reports, commands, orders, etc.

Types of Formal Communication

1. Vertical

In this type of formal communication, information exchange takes place at different organizational levels. Either the communication takes place from superior authority to subordinate or vice-versa. It is also classified into two types:

- **Bottom-up:** Communication flow is from subordinate to superior authority.
- **Top-down:** Communication flow is from superior authority to subordinate.

2. Lateral or Horizontal

This type of communication takes place between two employees of the same level but working in different departments. For example, communication that takes place between the Sales Manager and Human Resource Manager.

3. Diagonal or Crosswise

This type of communication takes place between employees of different departments working at different levels. For example, communication between Salesman and Manufacturing manager.

What is Informal Communication?

Informal communication is multidimensional, it flows freely in the organization without any restraint of predefined channels or routes. It is comparatively very quick and relational. In organizations it is often called the 'grapevine'. It is also important for the growth of a company because employees can discuss work-related issues more openly which ultimately saves the company's time and money. Some general examples are - chats between team members, a private journal or diary, etc.

Types of Informal Communication

1. Single Strand Chain

The communication in which one person tells something to another who again says something to another person and the process continues.

2. Cluster Chain

In this type of informal communication, one person tells something to some of his friends then they circulate that among their close friends and the process goes on.

3. Probability Chain

In this type, one person randomly chooses some persons and transfers information to them and they also do the same later on.

4. Gossip Chain

This type of communication is very common in an organization, where a person tells something to a group of people then they also spread it further to another group of people till it gets passed to everyone.

Key Differences Between Formal and Informal Communication

1. A set of commands is followed for formal communication whereas informal communication can move freely in all directions.
2. Formal communication is time-consuming, whereas it costs less time for informal communication.
3. Formal communication has its scope restricted within the organization whereas informal communication has no boundary.
4. A high level of secrecy is maintained for formal communication, whereas it's not guaranteed for informal communication.
5. Formal communication is designed at the organizational level whereas informal communication occurs naturally.

6. Documentary evidence is always available for formal communication whereas there are no supporting documents available for informal communication.
7. Slang words are never used in formal communication while they can be used in informal communication.
8. Formal communication is also known as official communication and informal communication is also known as grapevine communication.
9. Examples of formal communication are - business letters, reports, orders, etc. while examples of informal communication are face-to-face communication, telephonic conversations, etc.
10. Generally, documentation happens for formal communication whereas no documentation happens for informal communication.
11. Formal communication has a long chain of command whereas informal communication is very simple due to its short chain of command.
12. The main motive of formal communication is to fulfill organizational objectives whereas informal communication is intended to meet personal interests and needs.

Participatory Communication

How can participatory communication be applied in development projects? This World Bank publication outlines the four key phases of the participatory communication programme cycle. Genuine participatory communication is rare, but it can facilitate the empowerment of marginalised groups and have wider social and political effects. It requires continual dialogue with stakeholders. However, proper application of participatory communication methods are not enough to ensure a project's success. Broader contextual requirements are important, including a flexible project framework (especially in terms of timelines), a politically conducive environment, and an enabling attitude among key stakeholders.

Participatory communication is an approach based on dialogue, which allows the sharing of information, perceptions and opinions among the various stakeholders and thereby facilitates their empowerment. It is not just the exchange of information and experiences: it is also the exploration and generation of new knowledge aimed at addressing situations that need to be improved. Participatory communication tends to be associated with community-driven development, but it could be used at any level of decision making (local, national, international) regardless of the diversity of groups involved.

By actively engaging stakeholders from the start and by seeking a broader consensus around development initiatives, participatory communication has begun to be considered a crucial tool. This

is partly because many conflicts and obstacles can be prevented if addressed quickly. Genuine participation also increases the sense of ownership by local stakeholders, enhancing sustainability.

To be genuinely participatory and truly effective, communication should occur among all parties affected, ensuring all have similar opportunities to influence the outcome of the initiative. Ideally, participatory communication should be part of the whole project process:

- Two-way communication should be adopted from the beginning and be applied consistently.
- Full participation by all stakeholders in any step of the process is not possible and, in some cases probably not desirable. Broad consensus may be sufficient.
- Inclusiveness must be balanced with consideration of stakeholders' time, resources, interests and knowledge. After their input is taken into account, stakeholders may not need to be involved in detailed decisions beyond the scope of their interests.

The communication programme cycle can run parallel to the project cycle when they both start at the same time. The basic phases of a communication programme are:

- **Phase One** – Participatory Communication Assessment (PCA): Issues are researched and analysed through exploratory two-way communication. For these tasks to be successful, it is necessary to establish an open or common space where key stakeholders can interact freely with each other.
- **Phase Two** – (Participatory) Communication Strategy Design: Successful strategy design begins with the definition of the objectives. Instances where strategies are designed on broad, poorly understood objectives are surprisingly frequent.
- **Phase Three** – Implementation of Communication Activities: An action plan is needed to guide implementation and facilitate the management and monitoring of all relevant activities.
- **Phase Four** – Monitoring and Evaluation: Evaluation should be planned from the beginning of an initiative. Furthermore, if participation means that stakeholders are partners in the decision-making process, they must also be partners in impact evaluation.

Participatory communication is a strategic process that involves individuals in the communication process and decision-making, allowing them to have a voice and contribute. It can be used in various contexts, including government communication, social movements, and development projects. Here are some reasons why participatory communication is important:

- **Involves people in decision-making**

Participatory communication can help people participate in the decision-making process, which can increase project sustainability and ensure that people feel like they own the project.

- **Promotes access to information**

Participatory communication can help bridge information gaps and promote access to relevant and timely information for immediate action.

- **Integrates communication**

Integrates communication into each stage of research or practice Participatory communication recognizes the importance of iterative processes, which can help create more nuanced products that represent more viewpoints.

- **Helps to emancipate people and communities**

Participatory development communication can be a tool for emancipating people and communities by allowing for participation in development.

1.8 Theories of Nutrition Education

Nutrition educators have become increasingly aware of the importance of understanding the audience they want to influence. The field of communication offers nutrition educators practical theories for understanding people, their knowledge, attitudes and behaviour regarding nutrition. We will discuss here five main theories of NEC. These theories are: cognitive – gestaltist theory, behaviourist theory, the communication approach theory, diffusion and the social marketing approach theory. We will discuss each of these theories in this unit in detail. Let us start with cognitive – gestaltist theory.

1.8.1 Cognitive – Gestaltist Theory

According to the cognitive-gestaltist theory, education is seen as a process of selfdevelopment, whereby, the individual takes control of his/her environment. When this theory is used as a basis for nutrition education, it assumes that individuals are basically rational, they are able to make free choices and when provided with relevant information, they will adopt behaviours that are healthy and self-actualizing. Therefore, the goal is to disseminate relevant information. Let us go over to the next theory i.e. behaviourist theory

1.8.2 Behaviourist Theory

Behaviourist theory is based on the premise that the inner cognitive experience is not the only determinant of behaviour. Behaviour is considered determined by the environment, which may consist of competing forces to provoke and reinforce unhealthy behaviours. It is argued that people are not free to

make decisions as long as these environmental stimuli continue to be there. It is assumed that sufficiently strong stimuli and reinforcement will have to be set up for the learners. In all practical interventions, elements from both theories are used. Let us next go to the communication approach theory.

1.8.3 The Communication Approach Theory

The communication approach theory states that the receiver is selective in his response to the communication, the factors responsible for this selectivity being the individual's psychological orientation. This is known as the "communication effects" perspective. According to this theory, different people react differently to the same message. In addition, each individual also has a stored experience of beliefs and values. These beliefs and values influence the way the receiver interprets the message. This 'individual differences' perspective postulates that people with similar beliefs and values will respond similarly to a given message and in a predictable manner. Further it is also seen that people of the same age and sex and who have same level of education and wealth tend to select communication content of a similar nature and respond to it in a similar fashion. This is called the 'social categories' perspective. Both the individual differences perspective and the social categories perspective are considered important in their ability to predict response of the audience to communication.

These theoretical perspectives have led to some conclusions:

- ✓ Communication through the interpersonal channel is considered more influential than mass media in effecting behaviour change.
- ✓ Individual factors such as educational level and social categories influence responses.
- ✓ If change occurs, it is likely to be in small increments and in the direction of previous inclinations.
- ✓ Changes occur only after a lot of effort.

It is very important that while formulating communication material and in interpreting the response to communication, both individual differences and social factors are considered.

Let us learn about diffusion theory next.

1.8.4 Diffusion – The Special Type of Communication

Diffusion is described as a special type of communication, whereby, innovations spread to the members of a social system. While the term communication encompasses all messages, the term diffusion is concerned with messages that are new to the audience that receives it. In a free choice situation, diffusion of innovations occurs more effectively when the sender and the receiver are alike in personal and social characteristics.

The key elements of diffusion process are: --

- Full diffusion of most major innovations requires considerable time.
- Innovations are more rapidly accepted if they offer advantage over existing practices, are compatible with other current practices, are easy to understand and use, and if their benefits are quickly and clearly demonstrable.

You would have experienced that it is not easy to accept new ideas. It is true with most individuals. How do people go through a series of steps in accepting a new idea? What are these steps? Let us review them one by one.

Awareness – this is the first stage in the adoption process, when people will know about an idea or product and become aware or conscious of it.

Interest – once they know, it may arouse their interest or curiosity: what is it? How does it work? How could it work for me?

Evaluation – with more information about the idea, the person compares the new idea with the existing one and might ask: how can I use it? Is it more effective than what I am doing now?

Trial – people by nature are active and want to get involved and try something new. Hence they try the new concept.

Adoption – the final stage is complete acceptance and use of the idea or product. Adoption-diffusion research shows that although individuals may be persuaded to change, they are usually resistant to change and change occurs only slowly.

Lastly, let us learn about social marketing approach theory.

1.8.5 The Social Marketing Approach Theory

Social marketing of nutrition health concepts and practices has developed over the past few decades. It is defined as a process or strategy to make people aware of the goods and services available to them and how to make use of these. It is believed that social marketing, like consumer marketing, should be responsive to consumer needs, preferences and priorities. The similarities between social marketing and consumer marketing should not however distract us from some of the important dissimilarities between the two. Thus, dissimilarities between consumer marketing and social marketing are:

- Consumer marketing (CM) promotes the sale of goods or services for a profit while social marketing (SM) has the objective to promote welfare of the people.
- CM tries to sell brands or products while SM tries to sell concepts and practices.
- The major concern of SM is with the poorer segments of the population, although this might not always be so.

- While CM is concerned mostly about user, SM has to worry about the influences of providers as well.

The major contribution of the SM perspective appears to be the development of the resistance resolution model for designing the message. This model postulates that a message is divided into a number of elements. The audience receives successive elements and reacts to them. If each element of the message is understood and accepted by the audience, then each successive element reinforces the foregoing element so that at the end of the message, the audience is persuaded to accept the message and practice it. Frequency of exposure is an important factor and it is admitted that several exposures are needed before the message leads to the adoption of the desired behaviour.

You should, however, remember that, if any of the elements in a message is not understood or accepted due to reasons of traditional beliefs or customs, it triggers off conflict and distracts the audience. Such a distraction is referred to as internal dialogue/dissonance. Successive elements may produce more internal dialogue until eventually the audience may cease to listen at all and reject the whole idea. The message design strategy of SM attempts to eliminate the internal dialogue by uncovering resistance points and designing strategies to overcome them.

It is important to note that the process of interaction between the communicator and the receiver (audience) can deal with dissonance in the course of interpersonal communication. However, in the case of mass media, this is not possible and therefore message design to overcome resistance is a very important consideration while using the mass media

1.9 History of Nutrition –Health and Communication

The history of human nutrition dates back to the dawn of civilization. Human diet was largely and basically determined by the availability and palatability of foods. A famous quote attributed to Socrates, the ancient Greek philosopher is “Thou shouldst eat to live, not live to eat”. Hippocrates, the Greek physician and the Father of Medicine, was amongst the first to establish the role of diet in human wellbeing, through his sayings “let food be your medicine”. He proposed routine daily modifications in lifestyle such as diet and exercise to treat diseases. Jerome Groopman (USA) stated that “Aside from relatively common dietary deficiencies - lack of vitamin B12 causing pernicious anaemia or insufficient vitamin C giving rise to scurvy - little is known about the effects of nutrition on many bodily functions”.

During the “Chemical Revolution” in France at the end of the 18th century, various methods were developed for the chemical analysis of substances in a quantitative and scientific way. After the breakthrough discovery by James Lind (British Navy) and Kanehiro Takaki (Japanese Navy) on the importance of lime/oranges on the health of sailors, the causative agents were later identified to be vitamin C and B1. Moreover, nearly all vitamins were discovered between 1913 and 1948, ushering in a new era of scientific research focusing on single nutrient deficiency diseases. Hence, the field of nutritional science established the role of diet and nutrition in complex chronic diseases.

1.9.1 History of Human Nutrition

The history of human nutrition spans several millennia and records a variety of sources of food and diet. Archeological and fossil records date the emergence of modern human beings (*Homo sapiens*) between the years 50,000 - 40,000 BC. The progression of humans in the Upper Paleolithic period of the Pleistocene epoch or the Cro-Magnon period, during the period 40,000 - 10,000 BC, the populations hunted large mammals such as mammoths, horses, bison and caribou and the game meat contributed about 50% to the human diet and nourishment. Additionally, they also gathered and stored wild fruits and nuts for consumption during the harsh winter period. During the Mesolithic period, also known as the Middle Stone Age (10,000 - 8,000 BC), the bow and arrow was invented by the early humans, enabling them to successfully kill fast running animals such as gazelle, antelope and deer. The archeological evidence suggests that around 17,000 BC, the human population were scavenging wild grains, wheat and barley, which had become a common food source by 13,000 BC.

Furthermore, with the advancement of grinding edible grains into flour, they became an important source of food. During the Neolithic period (New Stone Age), around 10,000 BC, with the increasing human population, it became necessary to efficiently acquire more food. The increase in population resulted in the changes in agriculture i.e. domestication of plants and animals for food. With the dawn of the ice age and the beginning of the New Stone Age (Neolithic period), many large animal species became extinct and agriculture became more prominent source of food which resulted in the transition of human life from foraging, scavenging and hunting to agriculture and domestication of animals. Around the year 9,000 BC, the sheep and goat were domesticated; after 7,000 BC, grains and legumes were being extensively cultivated; and by 5,000 BC agriculture had become common throughout the inhabited world (Underwood and Galal, 2011). Agriculture has been one of the prominent and predominant occupations since 10,000 BC. However, the domestication

of animals earlier and later the development of the horse collar in the 12th century became one of the most important advancements during the Middle Ages.

It was originally invented in China during the 5th century which allowed the use of horses in place of oxen. Therefore, the production of food increased and fewer humans were required for farming and agriculture. Once the food supply became plentiful, the people now had more choice of diet and food items. Thus, the science of nutrition was born and became an academic endeavor and an important field of health sciences. Ancient people had devised ways of managing their health concerns, many of which were related to nutrition e.g., earlier physicians advised patients to drink the juice from liver of a black oxen or cock to relieve the symptoms of poor vision. The symptoms of anemia were reduced by placing iron filings in a glass of wine before drinking and goitre was thought to be treatable after chewing seaweed or burnt sponge. It was only later that the science behind the controversial and traditional practices was understood and was therefore, forbidden and withdrawn. Only during the last century, it has been scientifically found that liver concentrates vitamin A necessary for the visual process, the acidity of wine makes iron filings soluble and readily absorbed and seaweeds and sponges concentrate iodine required for thyroid functions.

1.10 Scope of Health Communication

The Individual

The individual is the most fundamental target for health-related change, since it is individual behaviours that affect health status. Communication can affect the individual's awareness, knowledge, attitudes, self-efficacy, and skills for behaviour change. Activity at all other levels ultimately aims to affect and support individual change.

The Social Network

An individual's relationships and the groups to which an individual belongs can have a significant impact on his or her health. Health communication programs can work to shape the information a group receives and may attempt to change communication patterns or content. Opinion leaders within a network are often a point of entry for health programs.

The Organization

Organizations include formal groups with a defined structure, such as associations, clubs, and civic groups; worksites; schools; primary healthcare settings; and retailers. Organizations can carry health messages to their membership, provide support for individual efforts, and make policy changes that enable individual change.

The Community

The collective well-being of communities can be fostered by creating structures and policies that support healthy lifestyles and by reducing or eliminating hazards in social and physical environments. Community-level initiatives are planned and led by organizations and institutions that can influence health such as schools, worksites, healthcare settings, community groups, and government agencies.

The Society

Society as a whole has many influences on individual behavior, including norms and values, attitudes and opinions, laws and policies, and the physical, economic, cultural, and information environments. Clearly, the more levels a communication program can influence, the greater the likelihood of creating and sustaining the desired change. Health communication alone, however, cannot change systemic problems related to health, such as poverty, environmental degradation, or lack of access to health care, but comprehensive health communication programs should include a systematic exploration of all the factors that contribute to health and the strategies that could be used to influence these factors.

1.11 Summary

Under this unit we have summarized the concepts of nutrition education with its importance, formal & non-formal communications, different theories of nutrition education as well as history of nutrition–health and communication etc. Nutrition education has been defined as the process by which beliefs, attitudes, environmental influences, and understanding about food lead to practices that are scientifically sound, practical, and consistent with individual needs and available food resources; nutrition education should be available to all. Modern nutritional science is less than a century old since the first vitamin was isolated in 1926.

Nutritional problems broadly fall into two categories, i.e. those resulting from insufficient intake relative to nutritional needs and those resulting from excessive and unbalanced intake of food or a particular dietary component. One of the principal aims of nutrition education must therefore be to provide people in rural and urban areas with adequate information, skills and motivation to procure and to consume appropriate diets. Such education should cover improvement of family food supplies and more efficient utilization of available food and economic resources to provide nutritious diets and better care for the most vulnerable groups.

The ancient theory of nutrition dates back to the time of Aristotle and Galen. They considered nutrition as a vital part of health, disease, performance, and healing. The power in each part of the body is believed to be dependent on the blood flowing to that part. These theories include the Social Cognitive Theory, the

Theory of Planned Behavior, the Health Belief Model, and the Empowerment model. These theories help identify factors that influence dietary behaviors, such as self-efficacy and attitude.

1.12 Terminal questions

Q. 1 What do you mean by health? Explain it.

Answer:-----

Q. 2 Describe importance of nutrition education.

Answer:-----

Q. 3 Describe Formal vs. Informal communication.

Answer:-----

Q.4 Write short notes on the following.

(a) Behaviourist theory

(b) Gestaltist theory

Answer:-----

Q. 5 Write a short notes on history of human nutrition.

Answer:-----

Q. 6 Write a short notes on scope of health communication.

Answer:-----

Q. 7 Describe role of medicine and medical science.

Answer:-----

Further readings

- Biochemistry- Lehninger A.L.
- Textbook of Nutrition and Dietetics Ranjana Mahna
- Biochemistry fourth edition-David Hames and Nigel Hooper.
- Textbook of Biochemistry for Undergraduates - Rafi, M.D.
- Textbook of Nutrition and Dietetics- Monika Sharma

Unit 2: The Components and Processes of NHC

Structure

Objectives

- 2.1 Introduction
 - 2.2 Nutritional Components of Food
 - 2.3 Micronutrients
 - 2.4 What is Communication?
 - 2.4.1 Communication Process
 - 2.5 Mode Of Communication
 - 2.6 Importance of Communication
 - 2.7 Barriers in Communication
 - 2.8 Flow of Communication
 - 2.9 Market research
 - 2.10 History
 - 2.11 Market research for business/planning
 - 2.12 Social marketing
 - 2.13 Applications
 - 2.14 Summary
 - 2.15 Terminal questions
- Further readings

2.1 Introduction

In our culture, everyone seems to want to find out the secrets of nutrition and the best diet out there. Year after year there is a new fad diet claiming to be the best and get you the results you want even faster. In a world where everyone seems to be an expert on nutrition, it can be confusing to know who to listen to or what to believe. So let me try to be a resounding voice of reason and bring clarity to a topic which seems very muddy. In reality, nutrition isn't very complex and in fact, is pretty simple to understand. Here are the essentials of nutrition. I hope this brings clarity to you and helps give you a better overall understanding of nutrition.

What is nutrition and why is nutrition important? At the most basic level, nutrition is about eating a regular, balanced diet. Good nutrition helps fuel your body. The foods you eat supply the nutrients your

body needs to maintain your brain, muscle, bone, nerves, skin, blood circulation, and immune system. Nutrition is a biochemical and physiological process that allows organisms to use food to sustain their lives. It provides organisms with nutrients that can be metabolized to create energy and chemical structures. If an organism doesn't get the nutrients it needs, it can develop malnutrition.

Objectives

This is the second unit (The components and Processes of NHC) of block I (Concepts and Theories of communication in Nutrition and Processes of NHC). Under second unit, we have following objectives. These are as under:

- To know about different nutritional components of food
- To discuss different communication process and its mode
- To discuss social marketing and market research for business/planning
- To discuss verbal and non-verbal communication

Communication is a process of exchanging verbal and non verbal messages. It is a continuous process. Pre-requisite of communication is a message. This message must be conveyed through some medium to the recipient. It is essential that this message must be understood by the recipient in same terms as intended by the sender. He must respond within a time frame. Thus, communication is a two way process and is incomplete without a feedback from the recipient to the sender on how well the message is understood by him. Oral communication is generally recommended when the communication matter is of temporary kind or where a direct interaction is required. Face to face communication (meetings, lectures, conferences, interviews, etc.) is significant so as to build a rapport and trust.

Before we going to discuss the process of nutrition and health education communication, let us first understand what we mean by Communication. Communication simply defined, is the act of transmitting information, ideas and attitudes from one person to another such that intended goals are met. There are four basic components of the communication process. These are sender or communicator, message, receiver and the feedback.

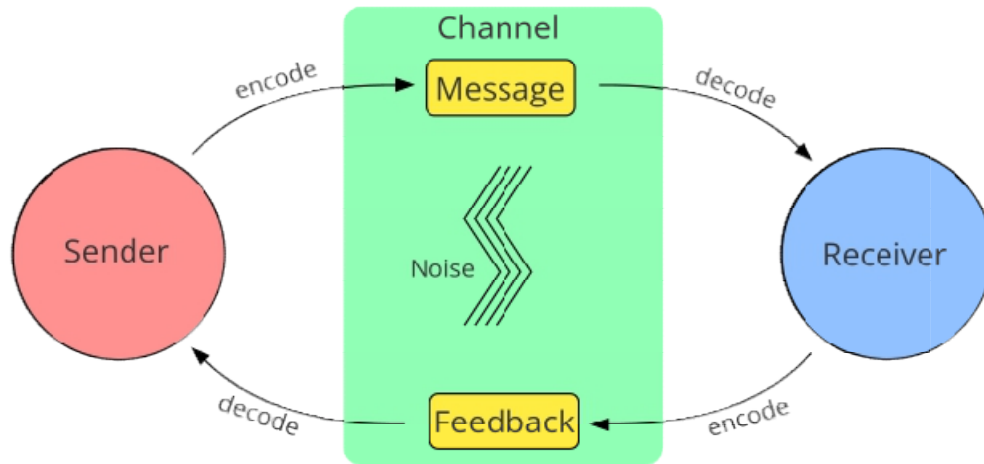


Fig.1 Components of communication process

The communication process is simple.

- The sender or the communicator wants to communicate something and decides to speak, write, and send non-verbal or visual signals known as message.
- The receiver wants to understand the sender's meaning and therefore listens, reads or observes non-verbal information or visual information and sends verbal or non-verbal feedback to the sender

The main components of communication process are as follows:

1. Context

Communication is affected by the context in which it takes place. This context may be physical, social, chronological or cultural. Every communication proceeds with context. The sender chooses the message to communicate within a context.

2. Sender/Encoder

Sender/Encoder is a person who sends the message. A sender makes use of symbols (words or graphic or visual aids) to convey the message and produce the required response. For instance - a training manager conducting training for new batch of employees. Sender may be an individual or a group or an organization. The views, background, approach, skills, competencies, and knowledge of the sender have a great impact on the message. The verbal and non verbal symbols chosen are essential in ascertaining interpretation of the message by the recipient in the same terms as intended by the sender.

3. Message

Message is a key idea that the sender wants to communicate. It is a sign that elicits the response of recipient. Communication process begins with deciding about the message to be conveyed. It must be ensured that the main objective of the message is clear.

4. Medium

Medium is a means used to exchange/transmit the message. The sender must choose an appropriate medium for transmitting the message else the message might not be conveyed to the desired recipients. The choice of appropriate medium of communication is essential for making the message effective and correctly interpreted by the recipient. This choice of communication medium varies depending upon the features of communication. For instance - Written medium is chosen when a message has to be conveyed to a small group of people, while an oral medium is chosen when spontaneous feedback is required from the recipient as misunderstandings are cleared then and there.

5. Recipient/Decoder

Recipient/Decoder is a person for whom the message is intended/aimed/targeted. The degree to which the decoder understands the message is dependent upon various factors such as knowledge of recipient, their responsiveness to the message, and the reliance of encoder on decoder.

6. Feedback

Feedback is the main component of communication process as it permits the sender to analyze the efficacy of the message. It helps the sender in confirming the correct interpretation of message by the decoder. Feedback may be verbal (through words) or non-verbal (in form of smiles, sighs, etc.). It may take written form also in form of memos, reports, etc.

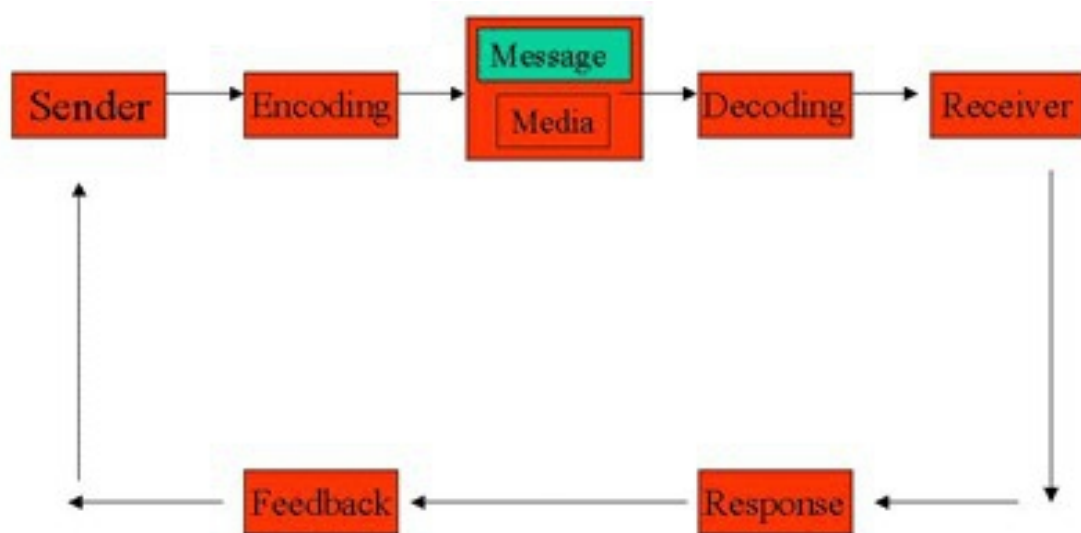


Fig. 2 Difference Step of Communication process

2.2 Nutritional Components of Food

There are 6 main nutritional components of food which are: carbohydrates, proteins, fats, vitamins, minerals, and water. Carbohydrates, proteins, and fats are considered macronutrients and are what provide you with calories, or what I refer to as energy. Vitamins, minerals, and water are considered

micronutrients and don't provide you with any energy. Both macronutrients and micronutrients are important to your body and provide different functions for your body. Macronutrients provide fuel for the body to give you energy as well as play crucial roles in maintaining overall health. Micronutrients don't provide you with energy but play critical roles to ensure the body operates as it should. Let's dive more in-depth with each of these categories.

Macronutrients

Carbohydrates

The main role of carbohydrates is to provide energy and fuel for your body much like gas provides fuel for a car. Carbohydrates are made up of sugars or starches that are bound together. Carbohydrates get stored in your muscles and also your liver as glycogen. Your body stores carbohydrates to always make sure you have enough energy for your daily activities, even if you were to skip a meal or two. Your body breaks down those carbohydrates mainly into glucose which is the main form your cells use for energy. Carbohydrates are found in fruits, grains, rice, beans, and numerous vegetables. Some carbohydrate-rich vegetables are potatoes, yams, and corn.

Protein

The main role of protein is to provide your body with the building blocks to build cells and other tissues. Protein gets broken down into amino acids which mainly get used for growth, development, repair, and maintenance of body tissues. Protein provides structure to muscle and bones. Protein also helps to repair tissue when it gets damaged. For example, your skin has a protein in it called keratin and when your skin gets damaged then the keratin protein helps to harden the new skin cells to repair the damaged layer. Protein has a lot of functions in the human body and too many to explain in this brief summary. Good sources of protein can be found in beef, pork, chicken, fish, beans, eggs, and dairy products. There are other sources of protein as well but this is a general list of the main sources. Lastly, not all proteins are created equal. Animal proteins have been shown to have better bioavailability, or absorption, in the body. This just means that your body can absorb animal proteins better than plant proteins.

Fats

The main role of fat is to provide structure and cushion to cells and membranes. Fats help to prevent damage to the human body by providing cushion. Fats are also crucial in helping to absorb certain vitamins. The vitamins A, D, E, and K are the only fat-soluble vitamins. The rest of the vitamins are water-soluble. Dietary sources of fat are animal fats, avocados, oils, nuts, dairy, fish, and coconut. Not all fats were created equal either. Try to consume more polyunsaturated and monounsaturated fats than saturated fats. Saturated fats have been shown to increase the risk of heart disease and increase cholesterol levels. Unsaturated fats help to lower LDL cholesterol and decrease the risk of heart disease. Saturated

fats are animal fats, dairy, coconut oil, and palm oil. Unsaturated fats are avocados, olive oil, fatty fish such as salmon, and nuts and seeds.

2.3 Micronutrients

Vitamins and Minerals

The main roles of vitamins and minerals is to support overall health and play an important role in cell metabolism and neurological functions. Vitamins help to aid in energy production, wound healing, bone formation, immunity, and eye and skin health. Minerals also perform a vast array of functions in the body such as providing structure to the skeleton, helping to maintain cardiovascular health, and also to act as cofactors in enzymatic reactions. Consuming a balanced diet of fresh fruits, vegetables, whole grains, dairy, and lean meats can help to ensure that your body has enough nutrients to perform all of its functions. A few examples are:

- **Vitamin A** – helps to maintain good eyesight
- **Calcium and Phosphorus** – helps to maintain strong bones and teeth
- **Iron** – helps blood to transport oxygen throughout the body
- **Vitamin E** – acts as an antioxidant and helps to maintain healthy skin

Water

The of few of the many roles of water in the body are to regulate body temperature, dissolve and aid absorption of vitamins and minerals, flush out waste products, and protect and moisturize joints. Your body is in fact about 60% water so it is a very large and important part of our health. Your body naturally loses water through breathing, sweating, and digestion so it is important to rehydrate by drinking enough water. There is no exact amount of water you need since it depends on various factors like the climate you live in, how physically active you are and other health factors. The main rule of thumb is to listen to your body. If your body tells you that you are thirsty then drink water, and if you're not thirsty then you probably have a sufficient amount of water in your system.

Diet Selection

When planning or preparing meals try to think about the 5 major food groups. Grains, protein, vegetables, fruit, and dairy. Try to make half of your plate fruits and veggies. Try to get a little more vegetables on your plate than fruit. Then fill the other half of your plate with grains and protein. Once again try to get a little more grains than protein on your plate. Then top it all off with a glass of milk to get your dairy intake. The picture below shows a representation of what your plate should look like. If your plate doesn't look like this every meal don't sweat it; this is just an ideal to shoot for. Once you get in the habit of

making your plates like this it will become natural and you won't even have to think about it. Also, get creative when making meals and try new foods because you might try something that you really like!

Energy Balance and Weight Control

A lot of people want to know what the secret to weight and fat loss are and the truth is, is that there is no secret. What primarily determines a person's weight gain is calories eaten minus the calories burned off which can equal either a positive, negative, or neutral energy balance. Take a look at the picture below if you need a visual understanding of the concept. Many people will tell you that this is a simplified version of what determines a person's weight and that is true. However, this is the most significant factor in what determines a person's weight and the other factors are negligible. So if you want to lose weight then you need to burn off more calories than you consume.

Behavior change communication (BCC)

Behavior change communication (BCC) is a strategic use of communication to promote positive health outcomes. It's an interactive process that involves developing communication strategies to help individuals, groups, or communities solve health problems. BCC is based on proven theories and models of behavior change, and uses a systematic process that includes: formative research and behavior analysis, communication planning, implementation, and monitoring and evaluation. Behaviour Change Communication (BCC) refers to the strategic use of communications to encourage individuals and communities to adopt healthier and more sustainable practices. BCC has been successfully deployed to change behavioural practices especially in the WASH space. This Tool, provides a basic definition of BCC, discusses the behaviour change model and steps, provides guidance on the process of designing and implementing a BCC programme, and reflects on key principles to make BCC campaigns more successful.



Fig. 3 360 Degree approach for behavior change communication (BCC)

BCC involves carefully segmenting audiences, pre-testing messages and materials, and using both mass media and interpersonal channels to achieve behavioral objectives. For example, a mass media campaign that promotes condom use to prevent HIV and other STIs might use public service announcements or serial dramas on radio or TV. Behaviour Change Communication is an interactive process of any intervention with individuals, group or community to develop communication strategies to promote positive health behaviours which are appropriate to the current social conditions and thereby help the society to solve their pressing health problems. This is achieved through the effective communication strategies and systematic information dissemination through interpersonal communication as well as with the help of print-visual-audio and new age media. Different Campaigns are planned and executed under the programme to spread adequate awareness about communicable, non-communicable diseases and for the health care of mothers, children, adolescent age group, palliative care patients etc.

As the rate of non-communicable diseases is alarmingly increasing, Behaviour change communication becomes a vital pillar of health care. Proper behaviour communication strategies help the people to get adequate knowledge on proper health care and initiate ample actions to lead a healthy life. Moreover, BCC activities make aware the people to understand the risk of current living styles and help them to shift to a healthy living style. Hence an organized and effective behaviour change communication system will decrease the rate various disease among people

For this, print materials like brochures, notices, pamphlets, booklets, and training modules are printed, advertisement commercials and other awareness videos are prepared and telecasted through all forms of media and also field level activities are conducted. Art and folk forms are also used for communication dissemination at grass-root level. Social media is another area where we can execute relatively cost effective mass awareness campaign. Various awareness programs are planned and implemented through our digital spaces. Through all these behaviour change communication strategies which provide adequate health care information, we can decrease the rate of various communicable and non-communicable diseases along with notable decreases in the indicators such as infant mortality, maternal mortality rate etc.

Benefits of BCC

Behaviour change communication (BCC) is the strategic use of communication to promote positive health outcomes, based on proven theories and models of behaviour change. It aims at influencing human behaviour taking into consideration the social and cultural context, in which the individual is living. BCC employs a systematic process beginning with formative research and behaviour analysis, followed by communication planning, implementation, monitoring, evaluation, and follow up activities. Audiences are carefully segmented; messages and materials are pre-tested; and, both mass media and interpersonal channels are used to achieve defined behavioural objectives. BCC aims to foster positive behaviour; promote and sustain individual, community and societal behaviour change, and maintain appropriate behaviour.

Some important benefits of BCC are that it

- Enhances knowledge, attitude, and skill
- Stimulates community dialogue
- Promotes essential attitude change
- Creates demand for information and services
- Advocates for appropriate family health care education policies
- Enhances use of promotive, preventive and curative health care services
- It is more relevant to the illiterate and less literate audiences

2.4 What is Communication?

The English word ‘communication’ is derived from the Latin communis, which means common sense. The word communication means sharing the same ideas. In other words, the transmission and interaction of facts, ideas, opinions, feelings or attitudes. Communication is the essence of management. The basic function of management (planning, planning, staffing, supervision and management) cannot be done

effectively without effective communication. Communication is a two-way process which involves transferring of information or messages from one person or group to another. This process goes on and includes a minimum of one sender and receiver to pass on the messages. These messages can either be any ideas, imagination, emotions, or thoughts. Communication is a Latin word which means “to share”. There are different modes of communication available today. These include emails, chats, WhatsApp, skype (conference calls), etc. Effective communication makes people’s work easier and smooth.

2.4.1 Communication Process

Communication is an ongoing process that mainly involves three components namely. sender, message, and recipient. The components involved in the communication process are described below in detail:

1. Sender:

The sender or contact generates the message and transmits it to the recipient. He is the source and the first contact

2. Message:

It is an idea, knowledge, opinion, truth, feeling, etc. produced by the sender and intended for reference.

3. Encoding:

The message produced by the sender is encrypted in a symbolic way such as words, pictures, touches, etc. before transfer.

4. The media:

This is how the coded message is conveyed. The message can be conveyed orally or in writing.

5. Recording:

It is a process of modifying the signals sent by the sender. After recording the message is received by the recipient.

6. Recipient:

You are the last person in the chain and the message you sent was sent. If the recipient receives the message and understands it correctly and acts on the message, only then the purpose of the communication is achieved.

7. Answer:

Once the recipient confirms to the sender that you received the message and understood it, the communication process is complete.

8. Noise:

Refers to any restrictions caused by the sender, message or recipient during the communication process. For example, incorrect telephone connection, incorrect coding, incorrect recording, careless recipient, incorrect understanding of message due to discrimination or inappropriate touch, etc.

2.5 Mode Of Communication

- **Formal Communication:**

Formal Communication refers to communication that takes place through legal channels in an organization. That kind of communication takes place between managers or employees of the same class or between high and low and vice versa. It may be oral or written but a complete record of that communication is kept in the organization.

- **Informal Communication:**

Informal communication is defined as any communication that occurs outside of the official channels of communication. Informal communication is often referred to as the ‘grapevine’ as it spreads throughout the organization and on all sides regardless of the level of authority.

Few Communication Barriers

One sometimes wants to connect with one thing, but he is actually saying something else that he did not intend. This type of event in communication behaviour is known as the “Arc of Distortion”. The distortion may be the result of some error in any of the communication channels. These barriers to communication are also known as “barriers”.

Some of the barriers to communication:

- Lack of proper style, feedback.
- Content is not related to customer requirements.
- Failure to maintain dual communication.
- Bad weather.
- Lack of horizontal flow of ideas.
- Availability of technical coordinators.
- Semantic Problems.
- Lack of leadership.
- Lack of enthusiasm.
- Lack of support from heads of institutions.

2.6 Importance of Communication

1. Communication Foundation:

The manager explains to the employees the goals of the organization, the methods of their success and the interpersonal relationships between them. This provides communication between the various staff and departments. Therefore, communication serves as the basis for collaboration in the organization.

2. Functional:

The manager coordinates the individual and physical aspects of the organization in order to run it efficiently and effectively. This integration is not possible without proper communication.

3. The Basis for Making Decisions:

Good communication provides information to the manager that helps them make decisions. No decisions could have been made without knowledge. Thus, communication is the basis for making the right decisions.

4. Improves Management Ability:

The manager transfers targets and issues instructions and assigns tasks to subordinates. All of these factors are involved.

Here The Importance of Communication Can Be Briefed As Follows

- Good communication encourages motivational skills.
- It is a mode of information in the decision-making process.
- Communication emphasises socialising within or outside the organisational structure.
- It helps in controlling the process. Employees have to follow the organisation rule, code of conduct and other company policies.

2.7 Barriers in Communication

There are certain barriers which create hindrance in building up communication over the time period.

- **Personal Barriers:**

Communication takes place between receiver and sender. It's a two-way process which should be clear. In case message formation went wrong, it gives a wrong and unclear message to the recipient. The receiver might get the wrong perspective while receiving a message. Therefore the message should be written effortlessly.

- **Systematic Barrier:**

If any machine or electronic errors occur by any means or in any unforeseen situation, it may affect the importance of communication.

2.8 Flow of Communication

An organisation follows the five flow of communications:

- **Downward Flow:**

In this, communication flows from the higher level to lower level, i.e. communication carried out by the head of the organisation to the subordinates like providing feedback, giving job instructions etc.

- **Upward Flow:**

Communication which flows to the higher level of the organisation is upward communication. Subordinates use upward flow to transfer their grievances and performances to their seniors.

- **Lateral/Horizontal Communication:**

It takes place where communication happens between the same level of the hierarchy that is communication between colleagues, managers or between any horizontally equivalent members of the organisation. It benefits employees to perform coordination among the tasks, time-saving, solving problems of employees of other departments or conflicts within the department.

- **Diagonal Communication:**

Communication which takes place between the manager and employee of other work departments is known as diagonal communication.

- **External Communication:**

Communication which takes place between the manager and external group likes vendors, suppliers, banks, financial institutions and many more. For example, the Managing Director would be meeting with the bank manager to get the bank loan or some other financial work.

2.9 Market research

Market research is an organized effort to gather information about target markets and customers. It involves understanding who they are and what they need. It is an important component of business strategy and a major factor in maintaining competitiveness. Market research helps to identify and analyze the needs of the market, the market size and the competition. Its techniques encompass both qualitative techniques such as focus groups, in-depth interviews, and ethnography, as well as quantitative techniques such as customer surveys, and analysis of secondary data.

It includes social and opinion research, and is the systematic gathering and interpretation of information about individuals or organizations using statistical and analytical methods and techniques of the applied social sciences to gain insight or support decision making. Market research, marketing research, and marketing are a sequence of business activities; sometimes these are handled informally.

The field of marketing research is much older than that of market research. Although both involve consumers, Marketing research is concerned specifically about marketing processes, such as advertising effectiveness and salesforce effectiveness, while market research is concerned specifically with markets

and distribution. Two explanations given for confusing Market research with Marketing research are the similarity of the terms and also that Market Research is a subset of Marketing Research. Further confusion exists because of major companies with expertise and practices in both areas.

2.10 History

Although market research started to be conceptualized and put into formal practice during the 1930s as an offshoot of the advertising boom of the Golden Age of radio in the United States, this was based on 1920s work by Daniel Starch. Starch "developed a theory that advertising had to be seen, read, believed, remembered, and most importantly, acted upon, in order to be considered effective. Advertisers realized the significance of demographics by the patterns in which they sponsored different radio programs.

2.11 Market research for business/planning

Market research is a way of getting an overview of consumers' wants, needs and beliefs. It can also involve discovering how they act. The research can be used to determine how a product could be marketed. Peter Drucker believed market research to be the quintessence of marketing. Market research is a way that producers and the marketplace study the consumer and gather information about the consumers' needs. There are two major types of market research: primary research, which is sub-divided into quantitative and qualitative research, and secondary research.

Factors that can be investigated through market research include:

- **Market information:** Through market information one can know the prices of different commodities in the market, as well as the supply and demand situation. Market researchers have a wider role than previously recognized by helping their clients to understand social, technical, and even legal aspects of markets.
- **Market segmentation:** Market segmentation is the division of the market or population into subgroups with similar motivations. It is widely used for segmenting on geographic differences, demographic differences (age, gender, ethnicity, etc.), technographic differences , psychographic differences, and differences in product use. For B2B segmentation firmographics is commonly used.
- **Market trends:** Market trends are the upward or downward movement of a market, during a period of time. Determining the market size may be more difficult if one is starting with a new innovation. In this case, you will have to derive the figures from the number of potential customers, or customer segments.

- **SWOT analysis:** SWOT is a written analysis of the Strengths, Weaknesses, Opportunities and Threats to a business entity. A SWOT may also be written up for the competition to understand how to develop the marketing and product mixes. The SWOT method helps to determine and also reassess strategies and analyze a business's processes.
- **PEST analysis:** PEST is an analysis about external environment . It includes a complete examine of a firm's Political, Economical, Social and Technological external factors, which may impact firms' objectives or profitability. They may become a benefit for the firm or harm its productivity.
- **Brand health tracker:** Brand tracking is way of continuously measuring the health of a brand, both in terms of consumers' usage of it (i.e. Brand Funnel) and what they think about it. Brand health can be measured in a number of ways, such as brand awareness, brand equity, brand usage and brand loyalty.

2.12 Social marketing

Social marketing is a professional craft, which seeks to create programmes designed to influence human behaviour. Commercial marketing targets choice and purchase behaviours. People are asked to buy products, switch brands, and recommend products and services to others. Social marketers are given the responsibility of targeting complex social behaviours and to work with an audience that doesn't always recognise it has a problem. Social marketers are often faced with marketing the least desired option, and for this reason, social marketing is different from commercial marketing, where the options marketed are cheaper, bigger, faster, new and/or improved. Social marketing, when employed to its full extent, offers a credible approach to behaviour change. This chapter has outlined 12 competencies that a practising social marketer should have; it has presented social marketing using Andreasen's six social marketing benchmark criteria and offered a range of best practice examples of social marketing from Singapore, Thailand and the USA. The chapter has outlined how a programme is planned, tested and implemented to provide a value offering that leads to behaviour change, and this is what differentiates good social marketing efforts from bad social marketing efforts.

Social marketing is a marketing approach which focuses on influencing behavior with the primary goal of achieving the "common good". It utilizes the elements of commercial marketing and applies them to social concepts. However, to see social marketing as only the use of standard commercial marketing practices to achieve non-commercial goals is an oversimplified view. Social marketing has existed for some time but has only started becoming a common term in recent decades. It was originally done using newspapers and billboards and has adapted to the modern world in many of the same ways commercial marketing has. The most common use of social marketing in today's society is through social media.

Traditional commercial marketing aims are primarily financial, though they can have positive social effects as well. In the context of public health, social marketing would promote general health, raise awareness and induce changes in behavior.

Social marketing is described as having two parents. The "social parent" uses social science and social policy approaches. The "marketing parent" uses commercial and public sector marketing approaches. Social marketing has started to encompass a broader range of focus in recent years and now goes beyond influencing individual behavior. It promotes socio-cultural and structural change relevant to social issues. Consequently, social marketing scholars are beginning to advocate for a broader definition of social marketing: "Social marketing is the application of marketing principles to enable individual and collective ideas and actions in the pursuit of effective, efficient, equitable, fair and sustained social transformation". The new emphasis gives equal weight to the effects (efficiency and effectiveness) and the process (equity, fairness and sustainability) of social marketing programs. Together with a new social marketing definition that focuses on social transformation, there is also an argument that a systems approach is needed if social marketing is to address the increasingly complex and dynamic social issues facing contemporary societies.

2.13 Applications

The first documented evidence of the deliberate use of marketing to address a social issue comes from a 1963 reproductive health program led by K. T. Chandy at the Indian Institute of Management in Calcutta, India. K.T. Chandy and colleagues proposed, and subsequently implemented, a national family planning program with high quality, government brand condoms distributed and sold throughout the country at a low cost. The program included an integrated consumer marketing campaign run with active point of sale promotion. Retailers were trained to sell the product aggressively, and a new organization was created to implement the program. In developing countries, the use of social marketing expanded to include HIV prevention, control of childhood diarrhea (through the use of oral re-hydration therapies), malaria control and treatment, point-of-use water treatment, on-site sanitation methods and the provision of basic health services.

Health promotion campaigns began applying social marketing in practice in the 1980s. In the United States, The National High Blood Pressure Education Program and the community heart disease prevention studies in Pawtucket, Rhode Island and at Stanford University demonstrated the effectiveness of the approach to address population-based risk factor behaviour change. Notable early developments also took place in Australia. These included the Victoria Cancer Council developing its anti-

tobacco campaigns "Quit" and "SunSmart", and its campaign against skin cancer, which had the slogan "Slip! Slop! Slap!".

Since the 1980s, the field has rapidly expanded around the world to include active living communities, disaster preparedness and response, ecosystem and species conservation, environmental issues, development of volunteer or Indigenous workforces, financial literacy, global threats of antibiotic resistance, government corruption, improving the quality of health care, injury prevention, landowner education, marine conservation and ocean sustainability, patient-centered health care, reducing health disparities, sustainable consumption, transportation demand management, water treatment and sanitation systems and youth gambling problems, among other social needs .

The impact of such social marketing campaigns are not always well documented.^[15] One study found that health awareness days can potentially raise knowledge about the causes of public health problems and promote an environment that supports policy changes, but noted that the accuracy of information shared is critical. On the other hand, there is some evidence to show that species awareness days meant to increase biodiversity and conservation awareness can lead to an increase in awareness through internet search for information, and an increase in conservation fund-raising by charities and advocacy groups.

On a wider front, by 2007, the government in the United Kingdom announced the development of its first social marketing strategy for all aspects of health. In 2010, the US national health objectives included increasing the number of state health departments that report using social marketing in health promotion and disease prevention programs and increasing the number of schools of public health that offer courses and workforce development activities in social marketing.

Social marketing theory and practice have progressed in several countries such as the US, Canada, Australia, New Zealand and the UK, and in the latter a number of key government policy papers have adopted a strategic social marketing approach. Publications such as "Choosing Health" in 2004, "It's our health!" in 2006 and "Health Challenge England" in 2006, represent steps to achieve a strategic and operational use of social marketing. In India, AIDS controlling programs are largely using social marketing and social workers are largely working for it. Most of the social workers are professionally trained for this task.

A variation of social marketing has emerged as a systematic way to foster more sustainable behavior. Referred to as community-based social marketing (CBSM) by Canadian environmental psychologist Doug McKenzie-Mohr, CBSM strives to change the behavior of communities to reduce their impact on

the environment. Realizing that simply providing information is usually not sufficient to initiate behavior change, CBSM uses tools and findings from social psychology to discover the perceived barriers to behavior change and ways of overcoming these barriers. Among the tools and techniques used by CBSM are focus groups and surveys (to discover barriers) and commitments, prompts, social norms, social diffusion, feedback and incentives (to change behavior). The tools of CBSM have been used to foster sustainable behavior in many areas, including energy conservation, environmental regulation, recycling and litter cleanup

In recent years, the concept of strategic social marketing has emerged, which identifies that social change requires action at the individual, community, socio-cultural, political and environmental level, and that social marketing can and should influence policy, strategy and operational tactics to achieve pro-social outcomes.

Other social marketing can be aimed at products deemed, at least by proponents, as socially unacceptable. One of the most notable is People for the Ethical Treatment of Animals (PETA) which for many years has waged social marketing campaigns against the use of natural fur products. The campaigns' efficacy has been subject to dispute.

2.14 Summary

Under this unit we have summarized the components of nutrition-health-communication, different types of communications, behaviour change communication, market research and social marketing etc. The ultimate goal of nutrition education is to produce nutritionally literate decision makers who are motivated, knowledgeable, skilled, and willing to choose proper nutrition alternatives. To be effective, nutrition education must communicate clear messages with a specific behavior-change goal for target groups.

Nutrition education and communication programs have evolved from a one-way flow of communication, that is, a mere dissemination of information to persuade target groups to change food beliefs, attitudes, and habits. A two-way process of sharing is preferred, where participants in a nutrition program can freely exchange knowledge, values, and practices on nutrition, food, and related areas. This view of nutrition education as a mechanism for interaction, ensures the active involvement of those who could and should take part in decision making, and in motivating and providing users with easy access to nutrition-related information, resources, and services.

Market research is the process of gathering and analyzing information about a market, product, or service. Social market research is a strategic process that uses social media platforms to gather data about

consumer behavior, preferences, and attitudes towards products or services. Businesses use social market research to gain insight into consumer behaviours, preferences, and attitudes towards products or services. It's a strategic process that uses surveys, data analysis, and other methods to collect information on market trends and consumer needs.

In essence, target market research provides a vast understanding of your desired audience, allowing your business to identify potential opportunities and threats in the market. Through social market research, you can gain an understanding of your target audience's interests, which you can leverage to establish your brand and improve customer satisfaction. In an ever-evolving market, social market research is necessary to stay in tune with the dynamic needs of consumers. It's an iterative process that ultimately results in higher customer acquisition and retention rates, translating into a more profitable business. Below, we untangle what types of market research for business exist, the advantages of it, and how to use it to help garner greater success and brand recognition.

2.15 Terminal questions

Q. 1 What do you mean by nutritional components of food? Explain it.

Answer:-----

Q. 2 Describe different mode of communications.

Answer:-----

Q. 3 Describe concept of behaviour change communication (BCC).

Answer:-----

Q.4 Write short notes on the following.

- (a) Verbal communication
- (b) Non-verbal communication

Answer:-----

Q. 5 Write a short notes on various types communications.

Answer:-----

Q. 6 Write short notes on market research and social marketing.

Answer:-----

Q. 7 Describe barriers in communication with its importance.

Answer:-----

Further readings

- Biochemistry- Lehninger A.L.
- Textbook of Nutrition and Dietetics Ranjana Mahna
- Biochemistry fourth edition-David Hames and Nigel Hooper.
- Textbook of Biochemistry for Undergraduates - Rafi, M.D.
- Textbook of Nutrition and Dietetics- Monika Sharma



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Nutrition And Health
Communications*

BLOCK

2

Programs and Experiences of NHC and Nutrition-Health-Communication

Unit 3: Programs and Experiences of NHC Global and Indian Perspective. 49

**Unit 4: Nutrition-Health-Communication in Govern-ment Programs 75
and NGOs**

Block Introduction

The introduction of second block is as under: This is the second block (Programs and Expressions of NHC and Nutrition-Health-Communication) of Nutrition and Health Communication. The second block is organized into remaining two units as under:

In recent decades interest in food and health issues has not ceased to increase globally. Consumers typically obtain information on issues related to food, nutrition, and health via a wide variety of media channels, including TV, radio, newspapers, internet, and social media. Unfortunately, the messages that reach consumers through these different channels can be conflicting, inaccurate, or confusing. The "For Accurate Science Platform" of the Sabri Ülker Food Research Foundation aims to disseminate current and reliable information to the public about health and nutrition. Health communication in nutrition plays a crucial role in promoting public health and well-being. It involves the strategic dissemination of information and education about nutrition-related topics to individuals and communities. The latest research findings highlight the significant impact of effective health communication in nutrition on various aspects of health, including disease prevention, management, and overall well-being. Recent studies have shown that targeted health communication strategies can positively influence dietary behaviors, leading to a reduction in the risk factors associated with chronic diseases such as obesity, diabetes, cardiovascular diseases, and certain types of cancer. By delivering clear and evidence-based nutritional information, health communication interventions empower individuals to make informed choices about their diets, thereby contributing to better health outcomes.

Unit 3: Programs and Experiences of NHC Global and Indian Perspective

Structure

Objectives

- 3.1 Introduction
- 3.2 Nutrition
- 3.3 Food literacy
- 3.4 Nutrition, health and communication in developing countries
- 3.5 Nutrition and development: a global challenge
- 3.6 Factors influencing nutritional status
- 3.7 Policies and programmes to improve nutrition
- 3.8 Promoting appropriate diets and healthy lifestyles
- 3.9 Caring for the socio-economically deprived and nutritionally vulnerable
- 3.10 Folk media and influences of NHC
- 3.11 Importance of “Folk Media” in rural communication
- 3.12 Importance of traditional media
- 3.13 Summary
- 3.14 Terminal questions

Further readings

3.1 Introduction

Furthermore, effective health communication in nutrition is instrumental in addressing malnutrition and nutritional deficiencies, especially in vulnerable populations. By raising awareness about the importance of balanced diets and micronutrient-rich foods, these initiatives have the potential to combat malnutrition and improve overall nutritional status. In addition to individual-level impacts, health communication in nutrition also extends to shaping public policies and food environments. By advocating for healthy eating habits and facilitating access to nutritious foods, these efforts contribute to creating supportive environments that promote population-wide health and well-being. Overall, the latest research underscores the critical role of health communication in nutrition as a powerful tool for improving dietary behaviors, preventing diseases, managing nutritional deficiencies, and fostering overall health. As we continue to advance our understanding of this field, leveraging effective strategies for health

communication in nutrition will be essential for promoting healthier lifestyles and reducing the burden of nutrition-related diseases.

Nutrition and food literacy are two important concepts that are often used interchangeably, but they are not synonymous. Nutrition refers to the study of how food affects the body, while food literacy refers to the knowledge, skills, and attitudes necessary to make informed decisions about food and its impact on health. Despite the growing awareness of the importance of food literacy, food illiteracy remains a global issue, affecting people of all ages, backgrounds, and socioeconomic status. Food illiteracy has serious health implications as it contributes to health inequities, particularly among vulnerable populations. In addition, food literacy is a complex and multidisciplinary field, and there are numerous challenges to health communication that must be addressed to effectively promote food literacy and improve health outcomes. Addressing food illiteracy and the challenges to health communication is essential to promote health equity and improve health outcomes for all populations.

Objectives

This is the third unit (Programs and Experiences of NHC Global and Indian Perspective) of block II (Programs and Experiences of NHC Global and Indian Perspectives). Under third unit, we have following objectives. These are as under:

- To discuss nutrition, health and food literacy
- To know the NHC in developed and developing countries
- To know about Folk media and influences of NHC
- To discuss importance of “Folk Media” in rural communication

3.2 Nutrition

The program in Nutrition & Health Communication aims to train young women in the field of media with special focus on reporting and writing in the area of nutrition and health. Growing public demand for health information has created a need for communicators with a thorough understanding of health and nutrition issues. Students in this program will have an advantage over traditional journalists and broadcasters by receiving training in nutrition assessment and evidence-based nutrition practices. The nutrition and health communication program includes a broad range of course topics, such as nutrition, understanding health and disease, and writing, video production and research methodology.

Nutrition & Health Communication is the study and use of communication strategies to inform and influence a variety of stakeholders about existing and emerging health/ nutrition topics. It includes instruction in identifying, understanding and expressing the goals of health care promotion to create effective strategies, messages, campaigns and advocacy programs. It also explores the relationships, roles,

situations and social structures of key stakeholders in health care and outcomes. Disease prevention, health advocacy, and communications concerning treatments are all important topics that require strong health communication. Nutrition & Health communicators are professionals skilled at informing, influencing, and motivating diverse audiences to address important health issues.

Nutrition literacy is the level to which people can acquire, process, and comprehend the fundamental nutritional data and services that they need to make correct dietary decisions. This implies having the knowledge of nutritional principles and the ability to understand, analyze, and use nutritional information; that is, to know the nutrients and their health effects. It involves an individual's capacity to acquire, understand, and use nutritional information from several sources. This includes knowing how foods are digested, their relationship with health, and how to use this information to make healthy choices.

Having nutrition literacy may not be sufficient to achieve the desired well-being and health. It is necessary to have food literacy; that is, to have knowledge, skills, and behaviors that are interrelated and that are necessary to decide, handle, choose, cook, and eat food. Food literacy is an individual's ability to make decisions that lead to better individual health status and lead to a sustainable food system considering all social, environmental, cultural, economic, and political factors. Krause et al. (2016) defined nutrition literacy as a subfield of food, with both being specific dimensions of health literacy.

According to the authors, nutrition and food literacy are different but complementary concepts. The main difference lies in the skills needed to be literate in nutrition, food, or health. Thus, nutrition literacy consists of the ability to understand basic nutritional information, which is a requirement for a broader array of skills defined for food literacy. The authors suggest the use of food literacy instead of nutrition literacy as it is broader and includes the skills necessary for healthy and responsible eating behavior. Vidgen (2016) identified eight domains of food literacy:

- (1) access;
- (2) management and planning;
- (3) selection;
- (4) knowledge of food origin;
- (5) preparation;
- (6) eating;
- (7) nutrition; and
- (8) language.

Truman et al. (2017) expanded the components of the definition of food literacy by considering six core themes:

- (1) capabilities and behaviors;
- (2) healthy food and choices;
- (3) culture;
- (4) knowledge;
- (5) emotions; and
- (6) food systems.

3.3 Food literacy

Food literacy measurement involves evaluating the following skills: reading, understanding, and analyzing information; gathering and sharing nutrition and food knowledge; shopping and preparing food; and evaluating the factors that impact their individual food choices and their influence on society. Vettori et al. (2019) highlight the importance of evaluating the skills needed to access and adhere to a healthy diet when measuring nutrition and food literacy. A nutrition and food-literate community includes people who eat to ensure their health and well-being while ensuring a sustainable food system. Nutrition and food literacy reflect the individual's inspiration to adopt suitable behaviors and healthy food choices for oneself, others, and the environment.

Health, food, and nutrition literacy are critical factors that impact every level of prevention in health and disease in fig. 1. Primary prevention refers to actions taken to prevent the disease onset. Health literacy is essential in promoting healthy lifestyles and behaviors that can prevent chronic diseases. Eating a healthy diet rich in fruits, vegetables, whole grains, and lean proteins can reduce the risk of developing conditions like heart disease, diabetes, and certain types of cancer. Education about the importance of a balanced diet and how to read nutrition labels can also help people make healthier food choices. Secondary prevention refers to actions taken to detect and treat a disease early before it causes significant harm.

Food and nutrition literacy is critical in secondary prevention because it enables individuals to make informed decisions about their diet and lifestyle to manage chronic conditions such as high blood pressure, high cholesterol, and diabetes. For example, individuals with food and nutrition literacy may be able to modify their diet to reduce their risk of developing complications from these conditions. Finally, tertiary prevention focuses on managing the complications and symptoms of chronic diseases. Health literacy is essential in tertiary prevention because it enables individuals to understand their condition and

adhere to their treatment plan. Education about how to read food labels, plan meals, and cook healthy foods can help these individuals better manage their condition and prevent complications.

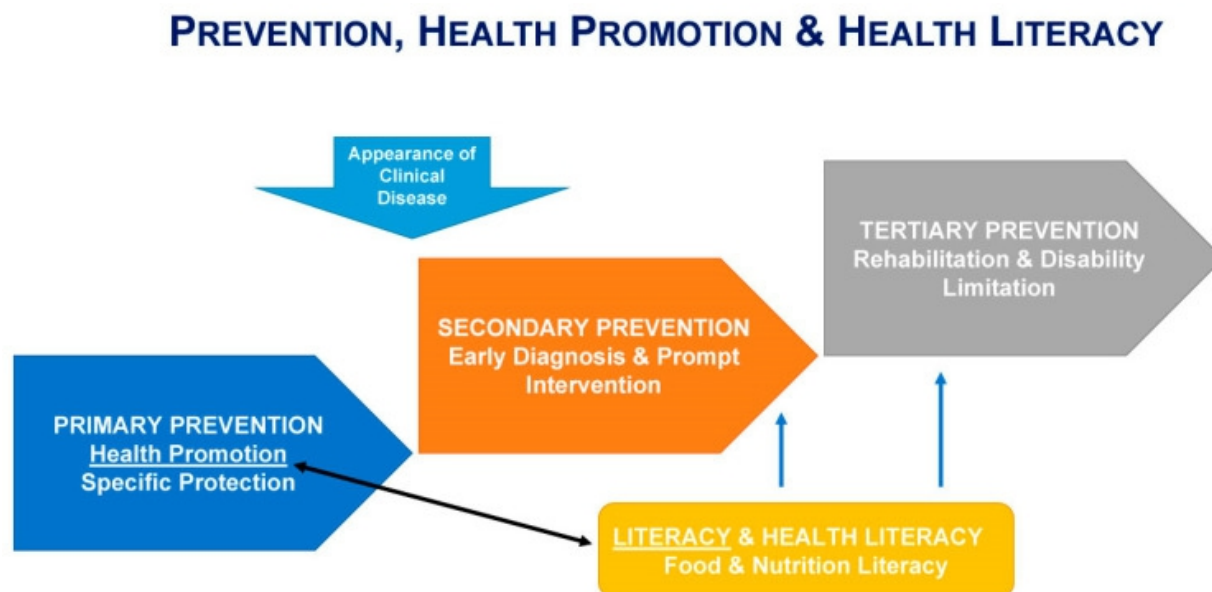


Fig. 1 Health, nutrition, and food literacy play a critical role in the prevention and management of diseases across all stages of prevention.

Food illiteracy is a growing problem in many countries worldwide as people are exposed to misinformation about the food they consume and its effects on their health. When people have a low level of food literacy, they may be unaware of how much salt or sugar is in their food or how many calories are in a serving. They may not know which ingredients are good or bad for them. They might not realize what types of foods they should eat more often or less often, based on their age or health status. There are two types of food illiteracy: the first is when people do not know what certain foods are or how to prepare them, and the second is when people have a poor understanding of the nutritional value of different foods and do not know how to properly balance meals.

This lack of knowledge about what we eat has led to unprecedented rates of obesity and diabetes, which often lead to other health problems such as cardiovascular disease and kidney disease. Although many people know that diet plays a role in weight gain and obesity, they may not realize that diet also has an impact on diabetes. Research has suggested that certain dietary habits can help reverse diabetes by enhancing insulin sensitivity and reducing blood sugar levels. If the prevalence of obesity continues to increase, almost half of the world's adult population will become overweight or obese by 2030. The

government and health authorities have highlighted the health and social complications related to inappropriate dietary patterns.

Children's food literacy rates are low. Many schools or day-cares do not provide students with healthy meals during school hours; instead, they rely on parents to pack lunches from home or provide snacks from vending machines that only offer sugary snacks such as chips or candy bars instead of healthier options such as fruits or yoghurt bars. Early life stages represent an important period since lifelong habits are developed and life circumstances influence health outcomes in adulthood. The important social, emotional, and cognitive changes that occur during youth mean that there is a greater tendency to engage in risky behaviors during this life phase. Irresponsible eating habits can have negative health effects with individual, familial, and social consequences.

Therefore, improving healthy eating habits and lifestyles in the early stages of life is of major concern worldwide. Eating is a socially constructed practice that is important for understanding and pursuing health. However, food and eating practices occupy a relatively minor place in the scholarship. Communication with the public is the initial stage of the behavior-change process and is a crucial piece of effective public policy. To combat this problem, governments should invest more money in educating children about healthy eating habits at school so that they can make good choices throughout their lives.

Food illiteracy has also been shown to be a major contributor to food waste. Approximately one-third of all food produced worldwide is wasted, and this number continues to increase annually. This is a problem because of wasted resources and can have serious health, social, economic, and environmental effects. Food waste begins at home, where consumers often buy more than they need or want and then waste what is left over when they do so. The health effects of food waste are numerous. For example, the loss of nutrients from discarded fruits and vegetables means that people who eat this food have a lower nutritional intake than those who do not.

Additionally, when food is discarded instead of eaten, it causes greenhouse gas emissions by rotting in landfills. Food waste also has economic and environmental effects. If more fruits and vegetables are eaten rather than thrown away after reaching their expiration dates, more money would be saved by consumers who would not need to buy new produce. Moreover, people consume more processed foods than ever before, causing them to throw away more packaging. However, there are other factors at play here too: climate change is causing droughts around the world, which means that crops are failing due to a lack of rain and heat stress on plants during ripening periods. The result is less food available for everyone, from

farmers down to consumers, which means higher prices on produce at grocery stores which causes consumers to buy less healthy foods overall because they are too expensive for their budgets.

3.4 Nutrition, health and communication in developing countries

Nutrition and health in developing countries, can be underlying conviction that global health and nutrition problems can only be solved through a firm understanding of the different levels of causality and the interactions between the various determinants. This volume provides policy makers, nutritionists, students, scientists, and professionals with the most recent and up-to-date knowledge regarding major health and nutritional problems in developing countries. This greatly expanded second edition has new chapters relevant to humanitarian emergencies, including a case study of the Indian Ocean tsunami in 2004, food in humanitarian relief, food policy, the emerging role of supermarkets in developing countries, homestead food production, aging, ethics, and the adverse impact of parental tobacco use on child health in poor families.

This unit reflect the increasing complexity and changes that are occurring in developing countries. Nutrition and health in developing countries, It concludes from diverse backgrounds of clinical nutrition, medicine, immunology, infectious disease, epidemiology, public health nutrition, anthropology, health policy, economics, and disaster planning. This unit will stimulate further thought, comprehensive and effective policies and programs, and research across disciplines in the goal of improving health and nutrition in developing countries in order to reach the Millennium Goals by the year 2015.

Over the last couple of years, a nutrition-sensitive approach has gained more traction than a nutrition-specific one in practice. That means the corresponding communication needs to be in sync, too, and not just about this shift. Merely increasing the knowledge base and awareness of good nutrition practices rarely lead to sustained behaviour change. Sustained change in nutrition behaviour is unlikely to be achieved through a single event or an activity such as a health talk or an exhibition. This is where social and behaviour change (SBC) strategy—a collection of approaches and tools used to design public health interventions, including nutrition programmes-and its effective communication comes in.

When it comes to children, it has been observed that several behaviours or practices impact their nutritional status during the critical initial 1,000 days—pregnancy to age two—but some complex contextual determinants influence individual decisions to consider, test, adopt and sustain a given behaviour or practice. One of the specific areas of focus needs to be on how a single, or a set of combined SBC interventions, can change certain types of behaviours among varied groups in the given context.

What also needs to be looked at is how they can be designed and implemented to ensure cost-effectiveness, scalability and sustainability, and how investments in the SBC programme can be targeted to help proven interventions scale and foster continual innovations under the nutrition programme, including breastfeeding by lactating mothers. In the case of breastfeeding, it is known that early and exclusive breastfeeding practices are the fulcrum of the nutrition programme. It is widely established that breastfeeding is one of the most cost-effective investments to improve the child survival rate, cognitive and motor development and also academic performance. Breastfeeding also imparts critical benefits like natural postnatal infertility to the mother. Despite the prevalence of breastfeeding practices, the rates, as per the World Health Organization standards, remain significantly low.



Fig. 2 Communication is key in making nutrition reach the vulnerable

Leading researchers in nutrition have undertaken extensive literature review of SBC and breastfeeding practices to study what brings about a sustained positive behaviour change in lactating mothers as far as early and exclusive breastfeeding practices are concerned. They have observed that the effectiveness of the SBC approaches in improving breastfeeding practices supports the claim that a well-designed SBC can and does succeed in improving uptake of the nutrition behaviours. Hence, the momentum of well-

designed SBC interventions needs to be maintained in order to sustain the process of positive health practices of caregivers.

There is a critical need to enhance the SBC skills of the managers addressing communication and nutrition, especially in deciphering the local community needs, designing interventions and developing locally contextual monitoring indicators. Interpersonal communication drives change for intervention in most nutrition projects, interpersonal communication is the widely used SBC approach and in some cases, the only one. Media interventions and community and social mobilisation are also frequently employed and are invariably used in conjunction with at least one other communication approach.

Therefore, for a significant impact of SBC interventions, a holistic and comprehensive strategy is recommended-a full-fledged, multipronged campaign approach that includes a strong component of interpersonal communication. There exist umpteen cases wherein, in addition to regular exposure to nutrition messages beamed through multiple modes, sustained and effective interpersonal communication has brought about tangible results.

Case Study

Take Sanju's (name changed) case. Sanju, a child hailing from Pratappur village in the Majhgawan block of Uttar Pradesh's Bareilly district, was extremely feeble. For varied reasons, the Anganwadi workers did not have substantial information about his overall nutritional status. It was only after the block coordinator, under the Maternal, Infant and Young Child Nutrition and C-SAM initiative of the United Nations Children's Fund and World Vision, learnt about Sanju that the Anganwadi centre monitored his growth thoroughly. While the child was not demonstrating any medical complications, he was found to be a case of severe acute malnutrition. With the help of the Anganwadi centre and the block coordinator, Sanju's caregivers were regularly counselled on the nutritious food already available in their house and the parameters of quantity, special care and hygiene in the context of the child's health and growth. Additionally, the Anganwadi centre, through the hospital of the block, handed over appropriate medication for the child to the caregivers.

Subsequently, Sanju's diet, the cleanliness of his surroundings and medication were monitored regularly. A change in the behaviour of his caregivers, who were previously not aware about childcare and growth parameters, brought around remarkable results in Sanju's overall health and nutritional status. Within the next two months, Sanju's nutritional level improved to that observed in a moderate acute malnutrition case. His mother testified that without relentless counselling on nutritional levels, daily food intake,

cleanliness and care of the child, her son would have remained very sick with bleak future years of growth.

3.5 Nutrition and development: a global challenge

In Asia and the Pacific striking improvements have occurred in the last 20 years, the proportion of the population affected by undernutrition declined from 40 percent to 19 percent. Nevertheless, the highest number of chronically undernourished people, 528 million, live in this region. The region with the largest proportion of the population affected by undernutrition, 33 percent, is Africa. The actual number of Africans affected by undernutrition has increased dramatically, rising from 101 million people in 1969-71 to 128 million in 1979-81 and reaching 168 million in 1988-90.

Undernutrition

The consequences of malnutrition are varied and far-reaching. Undernutrition can retard growth and development, reduce physical activity, impair resistance to infection, increase morbidity and lead to disabilities and death. Approximately 192 million children under five years of age suffer from acute or chronic protein-energy malnutrition. During seasonal food shortages and in times of famine and social unrest, this average number increases. The percentage of underweight children under five years of age has declined in the last 15 years, but the absolute numbers have remained fairly stable because of population increases.

Micronutrient deficiencies

Lack of specific nutrients within the diet causes serious health problems in many countries (Table 2). Over 1000 million people are at risk of iodine deficiency, often because little iodine is present in local soils. Severe or moderate iodine deficiency during pregnancy or early childhood can lead to neurological or hyperthyroid cretinism, resulting in deaf-mutism, impaired motor coordination, growth failure, severe mental defects and increased rates of abortion and stillbirths.

An estimated 40 million people are affected by insufficient intake of vitamin A. Vitamin A deficiency occurs when fruit and vegetable consumption and, in some cases, fat intake are low. This deficiency is the most common cause of preventable childhood blindness. It may also lead to night blindness, decreased resistance to infections and increased morbidity and mortality rates from various infections, especially diarrhoeal and respiratory infections and measles.

Poor nutritional status in general is associated with increased prevalence of anemia, pregnancy and delivery problems, and increased rates of intrauterine growth retardation, low birth weight and perinatal mortality. In adults, undernourishment and anemia, can lead to poor health, can impair productivity because of reduced physical and intellectual performance and can constrain community and national

development. Over 2000 million people, primarily women of child-bearing age and young children, are affected by the lack of iron.

Deficiencies of zinc, selenium and other trace elements affect large numbers of people in certain areas. Outbreaks of beriberi, pellagra and scurvy occur in refugee camps and among other deprived populations. Finally, rickets affects significant numbers of children.

3.6 Factors influencing nutritional status

Current understanding of nutritional problems involves awareness of a broad range of complex issues. The various influences on nutritional status can be grouped in the categories of food, health and care.

Food

By the late 1980s roughly 60 percent of the world's population lived in countries that had more than 2 600 kcal available per person per day. At the same time 123 million people resided in countries where dietary energy supplies were grossly insufficient at less than 2 000 kcal per person per day. The average per caput food supplies in the developing countries increased in the 1980s although at a slower rate than in the 1970s. In sub-Saharan Africa food supplies reached critical levels because of severe drought coupled with civil unrest in some countries. By 1990, approximately 18 million people were affected and in urgent need of emergency assistance. Dietary energy supply (DES) is an estimate of the average daily per caput energy available for human consumption in the total food supply during a given period. DES figures do not indicate actual consumption or the distribution patterns of the available supplies.

Stable food availability at the national, regional and household level can bring profound nutritional benefits. Even when the first priority of agricultural development is raising aggregate production of selected food and nonfood commodities, increasing consumption levels of poor households and generating sustainable livelihoods should be explicit goals; otherwise the nutritional benefits may not be attained. Often who produces, what they produce, how they produce and where they produce may be as important as how much is produced.

The mix of staple, secondary and non-food cash crops influences access to food in rural areas. Cash crops can complement food crops and provide income to purchase food. In addition to increasing foreign exchange earnings, cash crops can raise and perhaps stabilize household incomes, either directly or through jobs created on or off the farm. Better production technologies which are often adopted for cash crops may spread to the food crop sector, raising food production as well. Improvements in dietary intake will not occur if the earnings from new crops are spent on items not related to food. Women's participation in new enterprises and control of the income is important if nutritional benefits are to be

realized. When a mother has a controlling hand in household expenditures, children usually receive more benefits.

Health

Good health and sanitation are essential for good nutrition, yet they are beyond the reach of the majority of the world's population. Infectious disease and inadequate diet act synergistically, each aggravating the effects of the other to produce the "malnutrition and infection complex". In malnourished persons, illnesses tend to be more frequent, more severe and prolonged. Nutritional requirements are higher during and following episodes of infection. Chronic infections or frequent acute infections make it almost impossible to maintain adequate nutritional status.

The mechanisms by which infections harm nutritional status include reduced food and water intake resulting from anorexia, diminished absorption and utilization of ingested food, increased nutrient and water losses, increased metabolic demands and therefore higher nutritional requirements, and alteration of metabolic pathways and the intentional withholding of food. Diarrhoeal diseases, measles, acute respiratory infections (ARI), tuberculosis and, more recently, acquired immunodeficiency syndrome (AIDS) have major effects on nutritional status. Among the parasitic infestations, malaria, hookworm, ascariasis, amoebiasis and schistosomiasis are most significant for nutrition.

Antenatal care, immunizations and curative services to shorten disease episodes can improve nutritional status. Health services can influence the initiation and establishment of breast-feeding. Growth monitoring of children and follow-up when faltering occurs are important public health actions to prevent undernutrition. In addition to improved health facilities, intersectoral and community-based approaches need to be promoted. Developing human resources and strengthening managerial capacity at national and local levels are essential to deal with nutritional problems effectively.

Care

Adequate care and feeding practices require time, attention and support and are essential to meet the physical, mental and social needs of individuals. To assist children and others who may be unable to care for themselves because of disability or old age, resources must be used effectively. The knowledge, attitudes and practices of household members largely determine the nutritional status of the household. An incomplete understanding of the body's nutritional needs and lack of knowledge of how to meet those needs with available foods can lead to malnutrition. Food taboos and fads, inappropriate eating habits, poor food preparation techniques, inadequate understanding of health risks, special dietary needs and

physiological states all contribute to poor nutrition. While changes are difficult to make, nutrition education can be an appropriate and effective means of preventing and correcting nutritional problems. Women who are educated are more likely to use health care services and have lower fertility rates and more child-centred care-giving behaviours. With increasing education, women have more influence and skills to manage household resources for their children's health and welfare.

3.7 Policies and programmes to improve nutrition

Strategies and actions to improve nutrition need to be developed according to the particular needs, resources and circumstances of each country. Nonetheless, the following common areas of action for protecting and promoting nutritional well-being have been identified.

Improving household food security

Household food security depends on the ability of the household to produce or procure enough food to ensure an adequate diet for all its members at all times. Farmers living on marginal lands, landless or temporary laborers, pastoralists, small-scale fishermen and forestry workers and the urban poor are most vulnerable to food insecurity. They may experience chronic, seasonal or transitory food shortages. The food supply at both the national and the household level must be sufficient and reasonably stable throughout the year and from one year to another.

Protecting consumers through improved food quality and safety

Food-borne diseases due to pathogenic bacteria, viruses, parasites or intoxication's caused by chemical contaminants are widespread, Food-borne diseases cause loss of income and work output and increased medical care costs. A country's reputation for poor food quality may result in a decrease in trade and export earnings, as well as in tourism if foodstuffs are contaminated. Proper food control measures also help to reduce food losses and assure a healthy diet. To ensure that food is safe and that food quality is maintained during production, handling, processing and packaging, an effective food quality control system is necessary.

Governments can advise consumers and the food industry about good agricultural, manufacturing and food-handling practices, measures to minimize food spoilage and actions to avoid contamination. Education in hygienic handling and processing of food is needed. Simple precautions can do much to keep food safe in the home, small shops and eating places. Education and training, backed up by well enforced codes of practice, can achieve similar results in the food industry.

Preventing specific micronutrient deficiencies

With concerted efforts, the virtual elimination of iodine and vitamin A deficiencies and the substantial reduction of iron deficiency within this decade are attainable goals. Strategies and activities to tackle specific micronutrient deficiencies need to be formulated and implemented within the context of national plans to improve nutrition. Preventing micronutrient deficiencies involves public health measures and legislation to improve water quality, sanitation and food hygiene and promotion of essential services such as immunization programmes, control of endemic diseases, maternal and child health and primary health care programmes as well as health education and information.

Improving dietary diversity by stimulating the production and consumption of micronutrient-rich foods is the fundamental, sustainable approach for overcoming micronutrient deficiencies. In rural and urban areas there is great scope for improving direct household supplies of micronutrient-rich foods. Food and agricultural planning can promote the increased availability of micronutrient-rich foods, and targeted nutrition education programmes can help increase their consumption.

Food fortification can add micronutrient, particularly potassium iodate, vitamin A and iron, to common foods. However, in developing countries the cost of fortification and the enforcement of relevant legislation can be problematic, especially where there are multiple small-scale producers. While supplementation with iodized oil (given orally or by injection), vitamin A (given in high-dose capsules or oral dispensers) and medicinal iron can be effective in some circumstances, this should only be considered as a temporary measure until long-term solutions can be implemented. Supplementation programmes are often expensive and unsystematic, and coverage may be poor. Frequently, the key target groups are different for each micronutrient, and operational constraints are severe.

3.8 Promoting appropriate diets and healthy lifestyles

Excessive or unbalanced diets, often coupled with inadequate physical exercise, stress, excessive alcohol consumption and smoking, contribute to poor health and lead to the increased incidence of diet-related non-communicable diseases including obesity, hypertension, stroke, cardiovascular disease, diabetes mellitus and some cancers.

Promoting healthy diets involves motivating people and creating opportunities for behavioral change while recognizing individual preferences, life-styles and time constraints. Strategies include nutrition education and dietary guidance for the public; training of professionals in health and agriculture; creating guidelines for food services; and involving consumer groups and food industries in the endeavor. These

efforts can reverse the trends of increased diet-related non-communicable diseases. They can also have implications for farming, industrial and social policies and international trade.

Generally, nutrition education has been effective when behaviour modification, rather than information diffusion, has been the goal. Social learning, social marketing and educational entertainment strategies for mass communication have improved nutritional status among low-income groups and others. In terms of cost-effectiveness, nutrition communication compares favorably with other nutrition interventions. Maintaining nutrition communication programmes over a long period is essential to sustain meaningful behavioral changes.

Preventing and managing infectious diseases

Poorly nourished persons are more susceptible to many infectious diseases, and the prevention of infection and management of these diseases involves reducing their incidence, duration and severity. Early and adequate curative treatment at home or in clinics for acute respiratory infections, diarrhoea, malaria and childhood and parasitic diseases helps prevent malnutrition. Environmental health programmes that lead to safe water, safe waste disposal and adequate housing can reduce morbidity from various water- and faeces-borne infectious diseases. Water- and food-borne diseases are important causes of diarrhoea, as are many other infections due to bacteria, viruses, mycotoxins and parasites.

The accessibility, acceptability and adequacy of health services strongly influence whether people will utilize and benefit from them and whether people will alter their behaviour to improve their health. Community-based health care ensures the community members' active participation in the planning and implementation of their own health care, generates health awareness, mobilizes the community and successfully prevents infections through environmental changes and modification of harmful health practices. Community-based growth monitoring and prevention activities coupled with effective immunization programmes can be particularly important in the management and control of infectious diseases.

3.9 Caring for the socio-economically deprived and nutritionally vulnerable

Households and communities must be able to give the time, attention and support required to meet the physical, mental and social needs of children, the elderly and other family members. Each family member's knowledge, motivation and role within the household including his or her time constraints and control of resources, need to be considered in designing and implementing nutrition interventions.

In communities, adequate organization and caring capacity is an important determinant of the nutritional status of vulnerable groups and community efforts to address their own problems need to be encouraged and supported. Increased attention to new community care structures may be needed as urbanization and other social forces alter traditional patterns of family and community care. For instance, care is provided through voluntary and social welfare organizations. Other mechanisms include feeding programmes food subsidies and social security systems.

3.10 Folk media and influences of NHC

Folk media help in convincing and influencing in a very effective way, the opinions and attitudes of a cross-section of rural masses who cannot be reached through the established modern mass media. Over the years, traditional folk artists have proved that folk media is one of the most powerful propaganda that can be effectively used to direct the attention of the masses towards various programmes of development based on the felt-needs of the masses.

Taking into consideration the useful purposes of the traditional folk media, there is an urgent need for reviving and sustaining these media as they focus on important part of our rich cultural heritage. They also provide useful means for the upliftment of the common people and national reconstruction programmes especially in developing countries like India. Folk performing arts have been in existence in India for long and have been used as medium of communication in rural areas. Over the years, rural masses have been using folk media for expressing their socio-ritual, moral and emotional needs. The main aim of folk arts is to provide entertainment as well as to educate the audience in rural areas.

FOLK FORMS

There are several popular folk art forms dominate pan India

Tamasha	Bhavai
Nautanki	Keertana
Yakshagana	Dashavatar
Ramlila&Rasalila	Jatra
Bhavai	Terukothu
Puppetry	Street Theatre

Fig. 3 Different types of folk forms

The folk arts continue to wield a lot of influence on the rural masses. They play a crucial play in the process of socio- economic development . As an effective tool for motivating rural masses towards accepting socio-economic changes, initiated by various developmental agencies, the folk media is important. Traditionally, the rural masses have been using the folk- media for expressing their socio – ritual, moral and emotional needs.

Traditional folk media are categorized in to:

1. Folk dance
2. Folk tales, idioms and story telling
3. Folk music
4. Various occasions
5. Puppet dance
6. Social message songs
7. Street play
8. Drumming
9. Folk lyrics

3.11 Importance of “Folk Media” in rural communication

Communication plays a vital role in everyone’s life. There are different medium of communication, such as – television, radio and other new media. In spite of that folk media plays a important role in community development especially in rural development. From ancient days itself folk media has played a vital role in transforming and communicating various information to the rural masses. There are variety of folk forms in India, which includes Bhavai of Gujarat, Baul and Jatra of Bengal, Burrakatha of Andhra Pradesh, yakshagana of Karnataka, Nautanki of the North india, Villupattu of Kerala, Ankhia nata of Assam, Chhau in Bengal, Orissa and Jharkhand and many more forms are there. Folk media tells real story, it reflects hope, strength, aspiration, perception of the villagers in a simple way. Song, music, drama, street theater, folk dance, yatra are source of the different forms in folk media. ‘Folk’ as a communication medium is only popular in rural areas.



Fig. 4 Folk media

Folk media arouse interest among people and stimulate their interest to get involved in various folk medium which is favorite to all irrespective of all age groups. This medium is very near to the heart and mind of the villagers that can overcome the obstacle of literacy, language, and also the expenditure factor, as it is a very low cost medium.

Folk media is a very acceptable medium for the villagers and through medium people very easily communicate, and share their thoughts and ideas. Folk media is the powerful tool for conveying message to the people on various topics, issues and socio political activities. It creates awareness, sensitize and motivate the villagers towards various issues. But in the modern century and electronic era due to advancement of new media, folk media is loosing it's importance. Street play street theatre, etc are very rare to see nowadays.

Flexibility

Traditional media is favourite to all age groups and available to all and enjoyed by each and every person of different age groups at a very low cost. The main advantage of folk media is flexibility in day to day life and can be introduced into traditional folk forms of art such as wall paintings, puppet show, dances, dramas, folk songs, bioscope, tamasha, nautanki, story telling etc.

Extension

Traditional media plays a vital role in extension education. The great task of extension education is to impart changes and exert desirable influence on others through the use of effective extension teaching methods. It is better to have an inventory of the available local and familiar traditional media for operation in the field of agricultural communication. In this modern era the combination of traditional media with electronic media is welcome for use during, various occasions like kisan mela, exhibition, campaign etc., As a good platform for the agencies to spread the information and innovations through folk media to the rural communities.

3.12 Importance of traditional media

The folk arts forms satisfy the innate desire for self- expression and also satisfy man's need for moral instruction joined with entertainment as well as for dramatic and the lyrical. In combination with the electronic media, it preserves and disseminates in a lively manner the tradition and culture of our breadwinners . Folk in India have a mix of dance, songs and dialogue. It is a very important method for transferring agricultural technologies to the farmers as

- Traditional media change the attitude of the people, and
- arouse interest among the farmers

Puppetry

It is one of the important folk media for transferring agricultural technologies to the farmers puppetry was famous both for its entertainment and as an educational medium. Puppet plays are conducted to teach important lessons on various issues like literacy, health, agriculture, home-making, employment, education, rural youth activities, recreation etc. Puppetry can make a huge difference and make a positive impact, if properly used with active participation of the local people. Puppets are very popular especially for village situations. They can be used to communicate message with entertainment .

Drama

Drama depicts the village life and its problems and solutions based on the need of the community. The Stories based farmers problems and solutions, demonstrations on improved practices, programmes on rural development, role of decentralization through village leaders, how to tackling village problems and issues like child marriage, waste of money through ceremonies, solving problems of education, sanitation, health and hygiene and role of cooperatives and extension wing and how villagers can benefitted them can be n portrayed through dramas .

Tamasha

Tamasha is the best form of folk media theatre going back to over 400 years . A group of people are cluster with six to eight male singers cum performers and two or more female dancer-singers make to troop. The story part is the next component. The most important is the performance. The story is based on tamasha in the form of agriculture related songs and dance is based on stories derived from myth and folklore. For instance, government sponsored tamasha groups educate people an family planning.

Nautanki

Nautanki is a folk drama form. This is very popular in the field of agriculture and rural development. This dramatic form may easily be adopted for social and rural development programmes. This medium helps to bring desirable changes in the behavior .

Keertana and Harikatha

This is a religious folk theatre . It is a kind of drama or monodrama in which a gifted actor enters a whole series of characters. Harikatha is played by both state and central government to educate the rural masses on development activities, democratic values and national integration with the help of keertanakar or kathakars. All India Radio and Doordarshan use the keertana a form for broadcasts aimed at industrial workers and rural audiences.

Street play

Street plays are used for spreading messages on various issues like sanitation and hygiene, adult education etc., and they create awareness against social evils.

Melas and festivals

Melas and festivals are the favourite for the rural areas. It's a good opportunity for social gathering and sharing of information ideas and other aspects among the rural masses. Rural mela in India has a special significance. Now a day's few important melas like kisan diwas and kisan melas are organized through theatre. Farmers are shown field demonstrations/ exposure, visit to a standing crop and also demonstration of agricultural implements and tools. Agriculture related exhibitions arranges various programmes like spinning, tailoring and preparation of nutritious food for women, question and answer session between scientist and farmers, recreation programme (folk dance and songs) film shows etc. are some of the important events of the fairs.

The main objective of the melas is to spread information on various agriculture technology to the rural people for their betterment.

Story telling

Story telling is a informal way of conveying message to the community narrating interesting stories and useful information pass to the people

Riddles

Riddles form a very important tool to communicate knowledge to the people. Puzzles are given to the rural people which help them to understand the different use of practices in agriculture cultivation, home making, etc.

Bioscope

This is the popular folk medium used for education, entertainment and propagating of various social issues etc. This is very useful in conveying educational messages useful for farmers like cultivation of different crops, vegetables preservation, soil testing, mosquito control etc. Bioscope is very popular folk media especially in rural areas. The feasibility of the traditional media in the process of development is possible in the following areas like agriculture, medical and health programmes including family planning, nutrition programmes, and adult education, social legislation, legal and policy issues, cleanliness and rural development programmes.

The role of traditional media in a country like ours is of paramount importance in enriching our tradition and culture as also disseminating information and educating our rural folk. Traditional folk media is not just limited to music and dance , but also includes art and crafts. Traditional folk media originated as a consequence of people's need to express themselves. These performing arts pulsate with life and slowly change through the flux of time. In India folk performance is a merged art.. It absorbs ceremonials, rituals, beliefs and of course the social system. It is a total art created by the fusion of elements from music, dance, pantomime, versification, epic ballad recitation, religion and festival peasantry

Rural folk art forms satisfy our inborn need of the people. The traditional forms preserve and disseminate the culture and practice of our forefathers infusing life into them. Each region has its own folk art from that is enormously trendy and appropriate in the specific area. Very popular traditional folk media of Assam include Ojapali, mobile theatre, Bihu, Bon Geet, Loka Geet etc. Street theatre and puppetry are also relatively popular. There are several types of variation of a single art form. Bhaona for instance is a classical form which is performed within strict norms in the naamghars. On the other hand in parts of lower Assam, there are Dhuliya Bhaona and Khuliya Bhaona which are free from the rigidity of the

classical Bhaona and are very flexible. Similarly the Bihu is performed with slight variations by the Assamese, the Misings, the Bodos, the Karbis etc.

Uniqueness of traditional folk media:

- They have sustained the attack of time
- They have sustained by changing with the changing times
- Any person is always a participant in the performance, never an audience.
- It is flexible
- It is simple.
- It is cost effective
- It has immediate feedback and increased consideration.
- It is performed in a common language promoting simplicity.
- It is direct and personal.

Advantages of folk media

Every group of people has its own folk and traditional media which are close to their hearts. It remains in their blood. Hence, whenever it is performed or enacted by anyone in a society or crowd people feel like enjoying it to the maximum. It is very favorite to the people especially rural masses. Most of the folk performances are performed in the public places where people show more interest. Bihu is one of the famous folk performances with people gathering. Thus its effects on the masses are much greater than that of mass media. Based on the interest of the audience, folk media performed in various places has also the audience take part in it by becoming themselves a part of the performing team. Folk media differs from one place to another from regional to local area based on the scenario and people's interest, need and their cultural practices.

The main advantage of folk media is live performance with gestures, facial expressions, body language, verbal and non-verbal language in the field of communication. Live performance creates more impact among the audience and brings changes in the attitude. Folk media help to create awareness among the public. Folk media has its own importance and valuable medium among the masses. Folk and traditional media is based on local culture and other aspects. Thus the costumes, language used and the settings and background etc. must habitually bear the stamp of that locality and general culture of the area. Otherwise it will not be able to carry the same effect and meaning for the masses.

Folk media is basically performance oriented. Folk media is the combination of music dance, dialogue and facial expressions of the performer. Basically folk media is blended combination of all these aspects. This aspect provides much more effectiveness over its target audiences. Disadvantage of folk and traditional media is reaching very limited at one time.

- Folk Media is usually perform hundreds and thousands of people
- Folk media address the problems of the society
- Language use for folk media preferably in regional and local language

Role of Folk Media in Rural Development

Since the beginning of history, the role of communication has been very important. With the advancement of science and technology, the forms and way of communication have become more important. In recent days, internet, email, news paper, radio, television, video conferencing and other communication channels have emerged. But in rural areas access is limited to such media due to ignorance, less awareness and major problem of poverty and illiteracy.

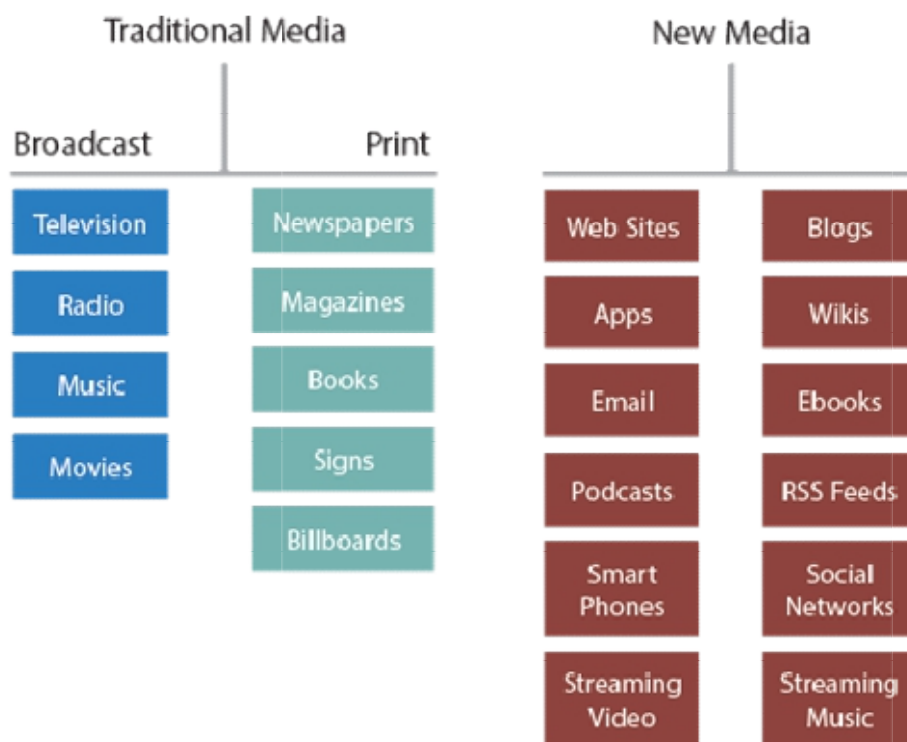


Fig. 5 Medium: What type of media is used to deliver the message

For Majority of the rural population mass media proved to be glamorous and unbelievable. Traditional media brings changes and development of the country. The traditional media can be used to reach these people in the process of change and development of the country. Traditional folk media have a remarkable impact on rural society because of their acceptable idioms, functional significance and entertainment component. Folk media can overcome the difficulty of language, speech, words and other barriers of communication like, interest, understanding, interpretation, attitude and perception. Folk media is a special tool to bring social change. Folk media convey various messages related to social issues, awareness and as well as agriculture messages. Traditional and modern media complement each other.

What can be communicated?

Communication plays an important tool of they are as follows

- Understand the nature of the community
- To use as a tool in making community for participation, group working, community unity, encouragement, enthusiasm.
- To make participation of the community, community harmony and encouragement
- Prepare the folk media based on the need of the people
- To eradicate myths and misconception of the social issues
- To arrange useful programmes for the young generation and motivate them to involve in it.
- To disseminate the information among the public
- To encourage and motivate the rural people
- To inculcate education, entertainment, information and motivation
- To make the community aware of various recent issues
- To empower the rural people
- To initiate new social trends in development.

How should cultural show be organized well?

1. Evening time is preferable to conduct the show
2. Common place in the village is more convenient to conduct the show
3. Time duration favorably 1 to 2 hours not more than that
4. Preplanning and executing the programme in a systematic way is very important
5. Show need to based on theme and serve the purpose of the village people
6. Programme need to be based on fulfilling objective
7. Different character, costumes, role to be involve
8. Involving rural masses can make the event success

3.13 Summary

Under this unit we have summarized the concepts of health, NHC in developed nations, Folk media and influences of NHC and importance of traditional media etc Food is a basic and essential need for human survival and healthy life. Eating behavior depends on several factors, including environmental, economic, political, and social. In recent decades, all over the world, there has been an increase in diseases related to unhealthy diets. Inadequate nutrition practices are associated with an increased risk of noncommunicable diseases. Obesity, for example, is one of the major risks for heart failure, type 2 diabetes, hypertension, and coronary heart disease. In this context, nutrition and food communication is crucial to influence

healthy eating behaviors. Traditional folk performances are popular in all communities. Researchers have established the significance of traditional folk media in development communication.

Healthcare practices and treatments often differ between countries and continents. Learn about an overview of healthcare, and then learn about healthcare infrastructure, providers, education, and products, and how these might differ between developing and developed countries. Developing countries have sometimes been influenced in their approaches to health care problems by the developed countries that have had a role in their history. For example, the countries in Africa and Asia that were once colonies of Britain have educational programs and health care systems that reflect British patterns, though there have been adaptations to local needs. Similar effects may be observed in countries influenced by France, the Netherlands, and Belgium.

Traditionally, folk media were used for entertainment at present there are efforts to involve folk media for transmission development of messages. Traditional folk media have become increasingly familiar as viable tools to impart development messages, both as live performances and also in a form integrated with electronic mass media.

3.14 Terminal questions

Q. 1 What do you mean by nutrition? Explain it.

Answer:-----

Q. 2 Describe different factors which influence nutritional status.

Answer:-----

Q. 3 Describe importance of “Folk Media” in rural communication.

Answer:-----

Q.4 Write short notes on the following.

(a) Food literacy

(b) Folk Media

Answer:-----

Q. 5 Write a short notes on folk media and influences of NHC.

Answer:-----

Q. 6 Describe the NHC in developed and developing countries.

Answer:-----

Further readings

- Biochemistry- Lehninger A.L.
- Textbook of Nutrition and Dietetics Ranjana Mahna
- Biochemistry fourth edition-David Hames and Nigel Hooper.
- Textbook of Biochemistry for Undergraduates - Rafi, M.D.
- Textbook of Nutrition and Dietetics- Monika Sharma

Unit 4: Nutrition-Health-Communication in Government Programs and NGOs

Structure

Objectives

4.1 Introduction

Objectives

4.2 Supplementary Nutrition Programme

4.3 Impact of Malnutrition on National Development:

4.4 National Food Security Act (NFSA) and Its Implementation:

4.5 PM POShan SHAKti Nirman (PM-POSHAN) and Child Nutrition:

4.6 Poshan Abhiyaan (National Nutrition Mission):

4.7 Public Distribution System (PDS) and Nutritional Support:

4.8 What is nutrition counseling?

4.9 What are the benefits of nutrition counseling?

4.10 What are IDD's?

4.11 Adenosine deaminase deficiency

4.12 Summary

4.13 Terminal questions

Further readings

4.1 Introduction

The Government has accorded high priority to the issue of malnutrition and is implementing several schemes/programmes of different Ministries/Departments through States/UTs to address various aspects related to nutrition. Children with Severe Acute Malnutrition are treated at the Nutrition Rehabilitation Centres established by the Ministry of Health and Family Welfare. POSHAN Abhiyaan was launched on 8th March 2018 with an aim to achieve improvement in nutritional status of Children under 6 years,

Adolescent Girls, Pregnant Women and Lactating Mothers in a time bound manner by adopting a synergised and result oriented approach.

In order to address the challenges of malnutrition, Government has taken steps to improve nutritional quality and testing, strengthen delivery and leverage technology under Poshan Tracker to improve governance. Streamlined Guidelines were issued on Quality Assurance, Roles and Responsibilities of Duty Holders, procedure for procurement, integrating AYUSH concepts and Data Management and Monitoring for transparency, efficiency and accountability in delivery of Supplementary Nutrition on 13.01.2021. Government has advised States/UTs to launch a drive for identification of SAM children for referral to hospitals and AYUSH centres in accordance with the detailed action plan approved by the District Nutrition Committee, constituting of converging line Ministries, health experts etc to be finalized in consultation with the Chief Medical Officer.

Objectives

This is the fourth unit (Nutrition-Health-Communication in Government Programs and NGOs) of block II (Programs and experiences of NHC and Nutrition-Health-Communication). Under fourth unit, we have following objectives. These are as under:

- To know about Supplementary Nutrition Programme
- To discuss impact of malnutrition on National development
- To discuss nutrition counseling and Adenosine deaminase deficiency
- To discuss intellectual and developmental disabilities (IDDs)

4.2 Supplementary Nutrition Programme

The efforts under the Supplementary Nutrition Programme under Anganwadi Services and POSHAN Abhiyaan have been rejuvenated and converged as ‘Saksham Anganwadi and POSHAN 2.0’. It seeks to address the challenges of malnutrition in children, adolescent girls, pregnant women and lactating mothers through a strategic shift in nutrition content and delivery and by creation of a convergent ecosystem to develop and promote practices that nurture health, wellness and immunity. Under Poshan 2.0, focus is on diet diversity, food fortification, leveraging traditional systems of knowledge and popularizing use of millets. Nutrition awareness strategies under Poshan 2.0 aim to develop sustainable health and well-being through regional meal plans to bridge dietary gaps. Dietary diversification in the Anganwadi platform encourages the consumption of micronutrient rich foods, viz., dark green leafy vegetables, lentils and vitamin C rich fruits. States/UTs have been advised to use fortified foods ingredients e.g., Fortified Wheat Flour, Fortified Rice, Double Fortified Salt and Fortified Edible Oil, under the Supplementary Nutrition Programme.

Further, greater emphasis is being given on the use of millets for preparation of Hot Cooked Meal and Take Home rations at Anganwadis for Pregnant Women, Lactating mothers and children below 6 years of age, as millets have high nutrient content which includes protein, essential fatty acid, dietary fibre, B-Vitamins, minerals such as calcium, iron, zinc, folic acid and other micro-nutrients thus helping to tackle anemia and other micro-nutrient deficiencies common among women and children. As per the Mission Saksham Anganwadi & Poshan 2.0 guidelines, millets need to be mandatorily supplied at least once a week and suitably integrated in Take Home Ration (not raw ration) and Hot Cooked Meals in a palatable form. One of the major activities undertaken under POSHAN Abhiyaan is Community Mobilization and Awareness Advocacy leading to Jan Andolan to educate the people on nutritional aspects. Under the Abhiyaan, a well-researched, designed and tested communication plan & IEC materials have been developed and intensive Mass Media Campaigns are conducted through various mass media channels like radio, television and social media. An important focus has therefore been on 'Behaviour Change Communication' or BCC to address inadequate and inappropriate infant and young child feeding practices, nutrition and care during pregnancy and adolescence.

Community Based Events or CBEs have served as a significant strategy in changing nutrition practices. CBEs help to celebrate critical milestones in the life of children below two years of age. The gatherings serve as a platform for disseminating essential messages on appropriate nutrition and health behaviour. The events are organised every month at the Anganwadi centres (AWC) and primarily focus on promotion of maternal nutrition (Godh bhara) and/ or initiation of appropriate complementary feeding (Annaprasan). Around 3.70 crore Community Based Events (CBEs) have been organized since the launch of the Abhiyaan in Anganwadi Centres. Also, through the use of Poshan Tracker, videos are disseminated, wherein the beneficiaries are counseled on nutrition related issues like breastfeeding, complementary feeding, infant and young childcare. Poshan Tracker has embedded videos related to Infant and Young Child care and nutrition for educating the beneficiaries residing in rural, urban and tribal regions of the country.

At a national level, the *Rashtriya Poshan Maah* is celebrated in the month of September across the country while *Poshan Pakhwada* is celebrated in the month of March. Themes have included overall nutrition, hygiene, water and sanitation, anaemia prevention, importance of breast-feeding, growth monitoring, role of Poshan Panchayats, AYUSH for Well-being, 'Back to Basics-Yoga for Health', importance of Poshan Vatikas for cultivation of local vegetables, medicinal plants/herbs and fruits at the community level, Poshan ke Paanch Sutra, cycle rallies, defeat diarrhea campaigns, Nukkad Natak/Folk Shows, SHG meetings, etc. More than 50+ crore activities have been carried out under Poshan Maah and Poshan Pakhwada across the country.

According to the National Family Health Survey 2021, 33 lakh children in India are malnourished. Also, India ranks 107 out of 121 countries on the Global Hunger Index 2022 in which it fares worse than all countries in South Asia barring war-torn Afghanistan. India's GHI score of 29.1 places it in the 'serious' category. Owing to such alarming rates, studies are being conducted to analyse and explore the innate factors for such disparities in the socio-economic background of caregivers. These surveys have encouraged the government to take remedial measures to rectify the situation of malnutrition in the country over the years, through the medium of nutritional policies and programs.



Fig. 1 Nutritional policies

According to the National Family Health Survey 2021, 33 lakh children in India are malnourished. Also, India ranks 107 out of 121 countries on the Global Hunger Index 2022 in which it fares worse than all countries in South Asia barring war-torn Afghanistan. India's GHI score of 29.1 places it in the 'serious' category. Owing to such alarming rates, studies are being conducted to analyse and explore the innate factors for such disparities in the socio-economic background of caregivers. These surveys have encouraged the government to take remedial measures to rectify the situation of malnutrition in the country over the years, through the medium of nutritional policies and programs.

4.3 Impact of Malnutrition on National Development:

Malnutrition is a serious problem that affects the health, education, economy, and social welfare of the nation. Some of the effects are the stunted physical and mental growth of children, leading to lower learning, productivity, and income. Malnutrition increases the risk of diseases, resulting in high mortality rates and healthcare costs, strengthening the cycle of poverty and underdevelopment. It reduces human capital, labour force, and economic growth potential.

Malnutrition is a complex problem that requires comprehensive nutritional policies that address its multifaceted impact, targeted towards improving the food security and quality of the population, enhancing nutrition education and awareness to help people make informed and healthy dietary choices, and strengthening the healthcare services to prevent, diagnose, and treat malnutrition and its related diseases and coordinating with different sectors and stakeholders, such as agriculture, education, environment, social protection, and private sector, to create an enabling environment for nutrition.

4.4 National Food Security Act (NFSA) and Its Implementation:

The National Food Security Act (NFSA), 2013 is a law that provides food and nutrition security to the people of India. It covers about two-thirds of the population, who can get subsidised food grains through the Targeted Public Distribution System (TPDS). The NFSA also provides nutritional support to pregnant women, lactating mothers, and children up to 14 years of age. It also has a grievance redressal mechanism and provisions for transparency and accountability.

The challenges during implementation include the high fiscal cost and subsidy burden, the inaccurate identification and targeting of beneficiaries, the poor quality and quantity of food grains, and the inadequate infrastructure and capacity of the agencies. The strategies to overcome these loopholes include using information technology, adopting a decentralized procurement system, strengthening the grievance redressal mechanism and social audits, and diversifying the food basket.

4.5 PM Poshan SHakti Nirman (PM-POSHAN) and Child Nutrition:

The PM Poshan scheme is a program that provides free, nutritious cooked meals to children in government schools and other centres in India. It aims to improve the enrolment, attendance, retention, and health of the children. The PM Poshan scheme has improved completion rates of primary education, especially for girls, enhanced the attendance of children, has improved the nutritional status and micronutrient intake of children. The scheme has also had positive effects on the cognitive development, academic performance, and social behaviour of children. Some ways to better the scheme are to allocate more funds and improve accuracy, quality, and capacity to reach the needy and hungry without mediators. It also needs better technology, inclusivity, and accountability on behalf of the administration. The food should be wholesome so that the dual purposes of education and nutrition are solved.

Anaemia and Micronutrient Deficiency Programs:

Anaemia and micronutrient deficiencies are common health problems in India. They affect the blood, growth, development, and immunity of the body, causing fatigue, weakness, infections, mental retardation, blindness, and birth defects. They can also impair learning, work, and reproductive health.

The programs to eliminate these diseases include the National Iron Plus Initiative, the National Iodine Deficiency Disorders Control Programme, the Integrated Child Development Services, and the National Prophylaxis Programme. These programs have significantly reduced the levels of anaemic conditions in the nations. There are still some challenges which include the low coverage, compliance, and quality of the supplementation programs, the poor dietary diversity and quality of the population, and the high prevalence of infections and parasitic infestations. Some strategies to ensure smooth implementation include using information technology, adopting a decentralized system, promoting nutrition education, and behaviour change communication.

4.6 Poshan Abhiyaan (National Nutrition Mission):

Poshan Abhiyaan is a program of the Government of India (GoI) to improve the nutrition of children, women, and adolescent girls. It converges various nutrition schemes and programs, using information and communication technology, providing incentives to states and districts, and promoting behaviour change communication and community mobilization. It has four key programme pillars: ICDS-CAS (Integrated Child Development Services-Common Application Software), which is a mobile application for data capture and analysis; ILA (Incremental Learning Approach), which is a training program for frontline workers; CAP (Convergence Action Plan), which is a framework for coordination and collaboration among stakeholders; and Jan Andolan, which is a social campaign for nutrition awareness. The challenges to Poshan Abhiyaan are similar to the challenges faced in implementing other programs like the PM Poshan scheme.

Maternal and Child Nutrition Initiatives:

Nutrition prevents malnutrition, supports fetal and infant growth, reduces chronic disease risk, and enhances cognitive and socio-emotional development. Women should eat well, take supplements, exercise, and rest before and during pregnancy and breastfeeding. Infants should be breastfed exclusively for six months and receive complementary foods afterwards. Women and children should have access to nutrition services. The government runs three programs to improve maternal and child nutrition:

1. Integrated Child Development Services (ICDS) Scheme:

Launched on 2nd October 1975, the ICDS scheme is the world's largest community-based programme. The scheme is targeted at children upto the age of 6 years, pregnant and lactating mothers and women 16–44 years of age. The scheme is aimed to improve the health, nutrition and education (KAP) of the target community.

2. The India Newborn Action Plan (INAP):

It was launched in September 2014 with the aim of ending preventable newborn deaths and stillbirths by 2030. INAP has set the goals for neonatal mortality and stillbirths. The goal is to attain Single Digit Neonatal Mortality and Stillbirth Rates by 2030.

3. Reproductive and Child Health (RCH) Programme:

It is a comprehensive sector wide flagship programme, under the umbrella of the GoI's NHM, to deliver the RCH targets for reduction of maternal and infant mortality and total fertility rates. The programme aims to reduce social and geographical disparities in access to and utilisation of quality reproductive, maternal, newborn, child and adolescent health services. Launched in April 2005 in partnership with the State governments, RCH is consistent with GoI's National Population Policy-2000, the National Health Policy-2001 and the Millennium Development Goals. Six key components of the RCH programme are Maternal Health, Child Health, Nutrition, Family Planning, Adolescent Health (AH) and PCPNDT. The programs need more monitoring, evaluation, budget, expenditure, convergence, and coordination to address the challenges of maternal and child nutrition.

Rural vs. Urban Disparities in Nutritional Access:

Rural vs. Urban disparities in nutritional access are major challenges for India, as they strongly affect the health and well-being of millions of people. The results of a popular survey conducted to analyse trends and disparities between rural and urban areas show that the rate of malnutrition and stunted growth is higher in the poorer sections of the society as compared to the wealthier socio-economic backgrounds. The urban residential areas have more accessibility to better healthcare and nutritional resources while the rural and slum areas are still relatively backward in this forte. These results show that there is a need for more research and policies to address the multiple burdens of malnutrition, especially among rural and urban slum households, and to ensure equitable access to healthy food for all.

4.7 Public Distribution System (PDS) and Nutritional Support:

The Public Distribution System (PDS) implemented by the Ministry of Consumer Affairs, Food, and Public Distribution is a program that aims to provide subsidized food grains to needy people. It covers commodities such as wheat, rice, sugar, and kerosene, and some states also distribute pulses, edible oils, iodized salt, spices, etc. through the PDS outlets. The PDS is operated by the central and state governments on decentralized levels.

Some of the challenges in PDS implementation are leakages and diversion of food grains from the supply chain, corruption, and inefficiency in the procurement, storage, transportation, and distribution processes, poor quality and adulteration of food grains and other commodities, inequity in the access to subsidized food, lack of awareness and access among the poor and marginalized sections of the society, regional disparities and variations and inadequate monitoring and evaluation mechanisms to track the performance and impact of PDS on food security and nutrition outcomes. Some of the possible measures for enhancing PDS are strengthening the procurement, storage, transportation, and distribution systems, improving the transparency and accountability of PDS Improving census data community participation and self-declaration, etc.

Promotion of Nutrient-Rich Indigenous Foods:

Indigenous foods provide essential nutrients that may be lacking in conventional foods. They can also offer variety and flavour to the local cuisine and enhance the cultural identity and food sovereignty of the indigenous communities. Furthermore, indigenous foods can support the agroecological farming practices that preserve natural resources and ecosystems. Therefore, indigenous and nutritious foods should be valued and promoted as part of the global efforts to improve human and environmental health. The consumption of nutritious food can be encouraged by creating awareness and improving accessibility at the grassroots level. It can also improve by including cost-effectiveness in such resources so that people from all walks of life can avail the food and maintain health.

Nutrition Education and Behaviour Change:

Nutrition education is a key to unlocking the secrets of health and wellness in India, where confusion and misinformation abound. It teaches us how to eat according to our needs and preferences to avoid diseases and to defeat the myths and misconceptions that interfere with our eating habits and regimes. Nutrition education is not just information but a skill that empowers us to choose rightly. It is a tool that builds a healthy nation. These nutrition programs can be incorporated through educational schemes that promote both the inclination and involvement towards education and improve immunity and cognitive and social abilities of an individual.

Urbanisation and Changing Dietary Patterns:

India is a land of diversity with different foods and cuisines. Urbanisation brings more differences and changes in what people eat, with the amalgamation of Western cuisines. These foods have more sugar, fats, and processed food and relatively less cereals, pulses, and greens These are the signs of the nutrition

transition that affects the health of millions. Gaps like unequal distribution, pollution, and unhealthy lifestyles are the challenges that increase the risk of diseases like obesity, diabetes, and hypertension.

Some possible strategies to address the nutritional implications of shifting dietary patterns in urban areas can be promoting nutrition education and awareness among urban residents and improving the availability, accessibility, and affordability of nutritious and diverse foods in urban food environments, such as supermarkets, food vendors, and restaurants. Reducing food waste and encouraging sustainable consumption patterns are a great way to protect the environment and our own bodies and immunity.

Public-Private Partnerships in Nutrition Programs:

Public-private partnerships (PPPs) are ways of working together between the public and private sectors to improve nutrition and health. PPPs can have benefits, such as increasing funds and awareness for nutrition and health, improving food and delivery systems to make nutritious foods more available, accessible, and affordable, and sharing technology and knowledge to make food products better, safer, and more diverse. PPPs can be associated with risks, like balancing private profits with public health and ensuring accountability and transparency, avoiding conflicts of interest and undue influence, following ethical codes, and respecting human rights and environmental standards. PPPs need careful design, implementation, monitoring, and evaluation to be effective, efficient, equitable, and sustainable. PPPs should also follow national and global nutrition goals and strategies.

Nutrition is a vital part of aging well. For older adults, unhealthy eating habits can increase the risk of acute and chronic conditions like heart disease, type 2 diabetes, obesity, osteoporosis, and certain cancers. Malnutrition—or the lack of nutrients needed to thrive—can lead to a greater risk of falls, a weakened immune system, decreased bone mass, and slow wound healing. While most of us know that eating well can help us live a longer, healthier life, putting it into practice every day isn't always simple or easy. Sometimes it's helpful to have someone guide us in making the right food choices. That's where nutrition counseling comes in.

4.8 What is nutrition counseling?

According to the ACL Nutrition and Aging Resource Center, nutrition counseling “provides personalized guidance to individuals who are at nutritional risk because of their health or nutritional history, dietary intake, chronic illness, or medication use.” Nutrition counseling is typically provided by a registered dietitian (RD) or registered dietitian nutritionist (RDN). Through a supportive, one-on-one counseling process, an RD/RDN can help you understand how diet affects your overall health. They can also help you plan healthy meals that meet your daily nutrition needs and lifestyle. It's important to understand that

nutrition counseling is not a quick fix. The goal is to make gradual, sensible dietary changes you can maintain over the long term.

Nutrition counseling is a two-way interaction through which a client and a trained counselor interpret the results of nutrition assessment, identify individual nutrition needs and goals, discuss ways to meet those goals, and agree on next steps. Nutrition counseling aims to help clients understand important information about their health and focuses on practical actions to address nutrition needs, as well as the benefits of behavior change. Nutrition counselors may be nurses or other facility-based providers or community health workers or volunteers. Nutritional counseling is the first and most commonly utilized intervention for the management of malnourished patients with cancer and a functioning gastrointestinal tract. A dietitian-nutritionist can provide individualized advice to achieve energy and nutrient balance based on the patient's estimated REE, lifestyle, disease state, current intake, and food preferences. Counseling needs to address the presence and severity of symptoms such as anorexia, nausea, dysphagia, abdominal bloating or cramping, diarrhea, and constipation. Critical components of nutrition counseling are to:

- (1) convey to the patient the reasons and goals for nutritional recommendations, and
- (2) motivate the patient to adapt to altered nutritional demand of their disease.

Oral nutrition support includes regular food or fortified foods as meals or snacks and oral nutritional supplements (ONS) to fill nutritional gaps when patients are at nutritional risk. Some studies evaluating nutrition counseling with and without the use of ONS have shown improvements in nutrition outcomes when including ONS: weight gain, BMI increase, and improved scores on a validated nutrition assessment test (Patient-generated subjective global assessment, PG-SGA). Studies have been limited, however, and remain inconclusive with respect to the effectiveness of oral nutrition strategies for the management of weight loss in patients with cancer. The limitations are likely due to the wide range of pathophysiological alterations that occur in cancer, which require complex and individually targeted strategies such as adaptations to gastrointestinal deficiencies and modulations of metabolic components of cachexia in order to allow nutrition interventions to be effective.

Optimal counseling contributes to successful health and nutrition outcomes. Ideally, counseling should be done in a place where the client feels comfortable and has privacy. This may be more challenging in a busy health facility than in a community setting, but adjustments can be made to improve the situation. Counselors should be trained to understand and use support materials such as flipcharts, counseling cards, take-home brochures, data collection forms, and referral forms effectively.

Ethical principles for counseling

Upholding ethical standards is also essential for effective counseling.

1. Provide accurate information. Clients should be able to trust that counselors' words and actions are truthful and reliable.
2. Keep client information confidential. Clients need to know that counselors will keep their information confidential except as needed for their treatment or recovery.
3. Respect clients' autonomy. Clients have the right to make their own decisions without coercion.
4. Keep clients' interests in mind. Advise them based on professional assessment and offer alternatives if you cannot help them.
5. Do no harm. Avoid any interventions that could harm or exploit clients emotionally, financially, or medically.
6. Be fair. Treat all clients fairly and without discrimination. Respect clients' rights, dignity, and individual difference.

A comprehensive nutritional, diet and appetite assessment to identify if nutritional status is too low is mandatory and so is the definition of problems related to self-feeding, access to food, gastrointestinal distress, and eventually, it is necessary to identify active psychic, social, medical, dialytic, or medicinal-related issues that could affect food intake. Dietary counseling to correct reduced or unhealthy nutrient intake, performed by a nutritionist has been shown to be useful. Akpele and Bailey have recently demonstrated in stable HD patients with inadequate dietary intake that the rate of change in serum albumin level was significantly greater among patients randomized to receive intensive nutritional counseling than among those who received oral supplements. On average, the serum albumin level increased 0.06 g/dl per month for patients randomized to the dietary counseling and decreased 0.04 g/dl per month for those randomized to the dietary supplement group.

4.9 What are the benefits of nutrition counseling?

Nutrition counseling can help improve your health and wellness in many ways. Its benefits include:

1. Preventing and managing chronic conditions

Along with other lifestyle changes, improving the way you eat can lower your risk of developing hypertension, type 2 diabetes, insulin resistance, obesity, and other chronic conditions. If you already have a chronic disease, nutrition counseling can help ease some of the physical symptoms you're experiencing or even reverse the condition altogether. For example, if you're diabetic, losing weight through dietary changes could help bring your blood glucose down to normal levels.

2. Achieving a healthy weight

Obesity is a common, serious, and growing health issue in the U.S. Between 2017 and 2020, the rate of obesity was 41.9%—a 37% increase from just a decade before.¹ Carrying too much extra weight can increase your risk for heart disease, stroke, type 2 diabetes, and even COVID-19 complications. It can also affect your mobility and overall quality of life. Although it's not a one-size-fits-all approach, good nutrition is key when it comes to reaching a healthy weight. Nutrition counseling may help you shed pounds by making you aware of how many calories you need for your level of activity. You'll also learn how to get the proper balance of nutrients. There is a full range of treatment options for those living with obesity. Speak with your health care provider to find the path that's right for you.

Likewise, many older adults experience changes in their metabolism and appetite, putting them at risk for unintended weight loss and malnutrition. If you've had unintended weight loss and you're struggling to maintain a healthy body weight, an RD/RDN can help you create a plan to gain weight at a slow, safe pace.

3. Feeling better overall

Improving the quality of what you eat doesn't just reduce your risk for disease. It can also help increase your energy levels, enhance your sleep, improve your digestion and bowel movements, boost your mood, and even sharpen your thinking and concentration. When you combine a nutrient-dense diet with smart lifestyle habits like exercising regularly, staying socially connected, and avoiding smoking, your body can function at its best.

4. Developing long-term healthy habits

Nutrition counseling focuses on helping you gradually improve your eating habits through individualized, practical, and manageable changes. Once you have the tools and knowledge to make better choices, it becomes second nature. One good choice followed by another leads to healthy habits that can last for the rest of your life. Your RD/RDN is an important part of your medical care team. They can help you prevent a decline in your health and keep your immune system working properly.

Micronutrients deficiencies

The World Health Organization (WHO) defines 'Micronutrients' as compounds required in very smaller amounts, <100 mg/d. Micronutrients include vitamins and minerals. They are vital for the production of hormones, enzymes and other substances that manage growth and development. Diseases caused by deficiencies of iron (anaemia), iodine [(iodine deficiency (IDD) disorders such as goitre and hypothyroidism] and vitamin A [vitamin A deficiency (VAD) disorders such as blindness] are considered major public health problems. The untoward outcomes of 'Micronutrient Malnutrition' or 'Hidden

Hunger' are earnest and include early death, impoverished health, vision effects, stunted growth, mental malady, learning impairment and lassitude.

According to the WHO, 45 % of deaths in children aged <5 years are linked to undernutrition. Globally, in low-income countries, iodine, iron and vitamin A are considered vital micronutrients for health as their deficiency affects children and pregnant women, and 42 % of children aged <5 years and 40 % of pregnant women are anaemic. The WHO and UNICEF reckoned it in a worldwide assessment estimated that only 66 % of households had iodised salt access, nearly 190 million children of pre-school age and 19.1 million pregnant women are deficient in vitamin A with more than 2 million people are flawed of other key micronutrients.

India is in a stage of nutrition transition. Being overweight and underweight are two common predicaments, but irrespective of them, micronutrient deficiency is at its peak and the leading reason may be the cereal-based food practices in India. Nutritional deficiencies contributed to 0.5 % [95 % confidence interval (CI) 0.4 %, 0.6 %] of total deaths in India in 2016⁽⁹⁾. In India, the National Family Health Survey-4 (NFHS-4) revealed that India has the highest burden of anaemia worldwide. The prevalence of anaemia was 58.6 % in children, 53.2 % in non-pregnant women and 50.4 % in pregnant women in 2016.

According to the Comprehensive National Nutrition Survey of children (CNNSC) between 0 and 19 years in 2019 in India, zinc deficiency was observed in 19 % of pre-school children and 32 % of adolescents, whereas 23 % of pre-school children and 37 % of adolescents were deficient in folate. Vitamin B₁₂, vitamin A and vitamin D deficiencies (VDDs) range between 14 and 31 % for pre-school children and adolescents. In a community-based cross-sectional study in rural India from eight states, the prevalence of Bitot's spots was 0.8 %, while the prevalence of anaemia was 67 % among pre-school children and 69 % among adolescents, and the prevalence of IDD measured by Goitre prevalence was 3.9 %.

The government of India has launched several schemes and programmes in the wake of micronutrient deficiency, but the problem still exists in a large segment of the population. Food fortification, dietary diversification, nutritional education, micronutrient supplementation, maintenance of environmental sanitation and hygiene are the various available measures taken to tackle the problem of micronutrient malnutrition. But the results have not been satisfactory, and national nutritional programmes have failed to achieve the goals. Although anaemia control programme has been running for around 50 years, NFHS-4 data have revealed that India has the highest burden of anaemia worldwide. The focus is now primarily on the fortification of foods with essential micronutrients in India. Food fortification of essential

micronutrients like iron, folic acid, vitamin B₁₂, iodine, vitamin A and vitamin D is being done in India as per the Food Safety and Standards Authority of India (FSSAI) reports.

Micronutrient malnutrition is a serious public health problem in India in spite of the efforts undertaken by several national health programmes and schemes. Unfortunately, micronutrient supplementation, food fortification and other strategies have been only partially effective. Hence, it is indispensable to determine the type of deficiency and make age-specific recommendations along with the fortification of the foods for the same. The foremost public health concern is the lack of national prevalence data. Although various surveys are being conducted nationwide like NFHS, Annual Health Survey (AHS), National Nutrition Monitoring Bureau (NNMB) and District Level Household Survey (DLHS) to evaluate and estimate nutritional status in various parts of India, they are not recommendable nationwide because of their diversity and limitations in sampling and methodology.

The national nutritional surveys have also mainly focused on anthropometric measurements and dietary intakes rather than on the prevalence of micronutrient deficiencies because of practical constraints. Despite everything, there is a paucity of high-quality evidence regarding preventable micronutrient deficiency in India. Preventable micronutrient deficiency is arising public health precedence in India. Hence, the problem of micronutrient malnutrition needs effective policies and strategies. In order to define the priority areas for future interventions and the evaluation of current strategies, the void of nationally representative data on micronutrient deficiency must be filled.

There is a need to integrate readily available nationwide data to reach any denouement and understand the role of fortification of foods to combat micronutrient deficiency for making stronger and age-specific recommendations. The present systematic review and meta-analysis were carried out with the basic objective to find the overall prevalence and age-wise estimates of deficiency of the six major micronutrients in India: iron, folic acid, vitamin B₁₂, iodine, vitamin A and vitamin D.

4.10 What are Intellectual and Developmental Disabilities (IDDs)?

IDDs are differences that are usually present at birth and that uniquely affect the trajectory of the individual's physical, intellectual, and/or emotional development. Many of these conditions affect multiple body parts or systems. Intellectual disability starts any time before a child turns 18 and is characterized by differences with both:

- Intellectual functioning or intelligence, which include the ability to learn, reason, problem solve, and other skills; and
- Adaptive behavior, which includes everyday social and life skills.

The term developmental disabilities is a broader category of often lifelong challenges that can be intellectual, physical, or both. IDD is the term often used to describe situations in which intellectual disability and other disabilities are present. It might be helpful to think about IDDs in terms of the body parts or systems they affect or how they occur. For example:

Nervous System

These disorders affect how the brain, spinal cord, and nervous system function, which can affect intelligence and learning. These conditions can also cause other issues, such as behavioral disorders, speech or language difficulties, seizures, and trouble with movement. Cerebral palsy, Down syndrome, Fragile X syndrome, and autism spectrum disorders (ASDs) are examples of IDDs related to problems with the nervous system.

Sensory System

These disorders affect the senses (sight, hearing, touch, taste, and smell) or how the brain processes or interprets information from the senses. Preterm infants and infants exposed to infections, such as cytomegalovirus, may have reduced function with their eyesight and/or hearing. In addition, being touched or held can be difficult for people with ASDs.

Metabolism

These disorders affect how the body uses food and other materials for energy and growth. For example, how the body breaks down food during digestion is a metabolic process. Problems with these processes can upset the balance of materials available for the body to function properly. Too much of one thing, or too little of another can disrupt overall body and brain functions. Phenylketonuria (PKU) and congenital hypothyroidism are examples of metabolic conditions that can lead to IDDs.

Degenerative

Individuals with degenerative disorders may seem or be typical at birth and may meet usual developmental milestones for a time, but then they experience disruptions in skills, abilities, and functions because of the condition. In some cases, the disorder may not be detected until the child is an adolescent or adult and starts to show symptoms or lose abilities. Some degenerative disorders result from other conditions, such as untreated problems of metabolism. The exact definition of IDD, as well as the different types or categories of IDD, may vary depending on the source of the information.

For example, within the context of education and the Individuals with Disabilities Education Act (IDEA), a law that aims to ensure educational services to children with disabilities throughout the nation, the definition of IDD and the types of conditions that are considered IDD might be different from the definitions and categories used by the Social Security Administration (SSA) to provide services and

support for those with disabilities. These definitions and categories might also be different from those used by healthcare providers and researchers.

4.11 Adenosine deaminase deficiency

Adenosine deaminase deficiency Description Adenosine deaminase (ADA) deficiency is a disorder that affects the immune system. Specifically, ADA deficiency impairs the development and function of immune cells called lymphocytes. Lymphocytes are white blood cells that help the body fight infections. As a result, people with ADA deficiency often develop pneumonia, chronic diarrhea, and widespread skin rashes. Additional signs and symptoms of ADA deficiency include slow growth and developmental delays. About 80 percent of individuals with ADA deficiency also have severe combined immunodeficiency (SCID). People with SCID lack virtually all immune protection from bacteria, viruses, and fungi. They are prone to repeated and persistent infections that can be serious or life-threatening. These infections are often caused by "opportunistic" organisms that ordinarily do not cause illness in people with a normal immune system. People with ADA deficiency with SCID (ADA-SCID) typically develop health problems within the first 6 months of life. Without treatment, these babies usually do not survive past age 2. About 15 to 20 percent of people with ADA deficiency develop health problems that begin between 1 and 10 years of age (delayed onset) or in adulthood.

In people with this form of ADA deficiency (known as delayed or late-onset combined immunodeficiency or ADA-CID), the immune deficiency tends to be less severe than in people with ADA-SCID. People with ADA-CID typically have recurrent upper respiratory and ear infections. Over time, affected individuals may develop chronic lung damage, malnutrition, and other health problems. In some individuals, ADA deficiency only impacts red blood cells. Since white blood cells are not affected, these individuals have normal immune systems. This form of the condition is known as partial ADA deficiency. Individuals with this form do not have any health problems related to the condition. They often only find out they have ADA deficiency when they undergo testing because of an affected relative or during a normal health screening.

4.12 Summary

Under this unit we have summarized the concepts of supplementary nutrition programme, Poshan abhiyaan, nutrition counselling, Adenosine deaminase deficiency and intellectual and developmental disabilities etc. The Supplementary Nutrition Programme (SNP) is a program that provides nutritional support to children, pregnant women, and lactating mothers in India. The program is part of the Integrated Child Development Services (ICDS) scheme and is implemented through Anganwadi workers in rural

areas and NGOs in urban areas. Poshan Abhiyaan, an overarching scheme for holistic nourishment is Government of India's flagship scheme to improve nutritional outcomes for children, adolescent girls, pregnant women and lactating mothers. The Abhiyaan was launched by Hon'ble Prime Minister on 8th March, 2018.

Poshan Abhiyaan seeks to address the challenges of malnutrition through a strategic shift in nutrition content and delivery by creating a convergent eco-system to develop and promote practices that nurture health, wellness and immunity. Some of the latest developments in the policies and programs for nutrition are initiatives like the IGC (International Grains Council) which analyses the nutrition policy and gives suggestions to fight malnutrition, the FAO (Food & Agriculture Organisation) offering a toolkit, e-learning courses, and nutrition-sensitive agriculture and food systems, and UNICEF which works with many nutrition partners to scale up nutrition policies, strategies and programs that support the Sustainable Development Goals (SDGs). Thus, nutrition policies play an inevitable role in national development.

Nutrition is a vital part of aging well. For older adults, unhealthy eating habits can increase the risk of acute and chronic conditions like heart disease, type 2 diabetes, obesity, osteoporosis, and certain cancers. Malnutrition—or the lack of nutrients needed to thrive—can lead to a greater risk of falls, a weakened immune system, decreased bone mass, and slow wound healing. Intellectual and developmental disabilities (IDDs) are a group of chronic conditions that can affect a person's physical, intellectual, and emotional development. They are usually present at birth, but can begin at any time up to age 22. IDDs can impact many areas of life, including learning, language, mobility, self-help, and independent living.

4.13 Terminal questions

Q. 1 What do you mean by Supplementary Nutrition Programme? Explain it.

Answer:-----

Q. 2 Describe impact of malnutrition on national development:

Answer:-----

Q. 3 Describe Poshan Abhiyaan (National Nutrition Mission).

Answer:-----

Q.4 Write short notes on the following.

(a) National Food Security Act (NFSA)

(b) Adenosine deaminase deficiency

Answer:-----

Q. 5 Write short notes on Adenosine deaminase deficiency.

Answer:-----

Q. 6 Write short notes on nutrition counselling with its benefits.

Answer:-----

Q. 7 Describe intellectual and developmental disabilities (IDDs).

Answer:-----

Further readings

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