Program	**:**	B. Pharmacy
Name of Unit	**:**	Concept of Health and Disease
Subject /Course name	**:**	Social and Preventive Pharmacy
Subject/Course ID	**:**	BP802T
Class: B.Pharm. Semester	**:**	8th
Module	**:**	1
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Learning Outcome of Unit

LO	Learning Outcome (LO)	Course Outcome Code
LO1	To understand the basic concept personnel health and public health.	BP802.1
LO2	To learn about the control of disease spread.	BP802.2
LO3	To know about the role of nutrition and balanced diet.	BP802.1
LO4	To understand the affect of urbanization on health.	BP802.1

Module Content Table

No.	Topic
1	**Concept of Health and Disease** :- Definition, concepts and evaluation of public health. Understanding the concept of prevention and control of disease, social causes of diseases and social problems of the sick.
2	**Social and Health Education:-** Food in relation to nutrition and health, Balanced diet, Nutritional deficiencies, Vitamin deficiencies, Malnutrition and its prevention.
3	**Sociology and Health:-** Socio cultural factors related to health and disease, Impact of urbanization on health and disease, Poverty and health.
4	**Hygiene and Health:-** Personal hygiene and health care; avoidable habits.

CONCEPT OF HEALTH AND DISEASE

Health and disease are cardinal concepts of the biomedical sciences and technologies. Though the models of health and disease may vary these concepts play a defining role, indicating what should and what should not be the objects of medical concern. The concepts are ambiguous, operating both as explanatory and evaluatory notions. They describe states of affairs, factual conditions, while at the same time judging them to be good or bad Health and disease are normative as well as descriptive. This dual role is core to their ambiguity.

1.1 HEALTH

World Health Organization, defines health as a 'state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity'. (WHO 1947) Positive health-it implies the notion of perfect health in body and mind. It cannot become a reality, it always remain a dream because everything in our life is subject to change. Wellness is a multidimensional state of being describing the existence of positive health in an individual as exemplified by quality of life and a sense of well-being.

A combination of **PHYSICAL, MENTAL, SOCIAL** status defines the good health.

1.1.1 DETERMINANTS OF HEALTH

Determinants are defined as those predisposing factor, which influence the health of a particular community.

1. **Host factor (intrinsic)**- Host is 'soil' and disease agent is 'seed'. Host predisposing factors are:

- It includes age, sex, ethnicity, biological factors such as genetic factors, blood groups, etc.
- Socio-economic factors such as status, education, occupation, stress, etc.
- Life style such as personality traits, drugs, alcohol, smoking, behaviour patterns.

2. **Environmental factors (extrinsic)-** It is complex and defined as all that which is external to individual human, host, may be living or non living and with which he is in constant, interaction. Environment of man is divided into three components- physical, biological and psychological.
3. **Risk factors-** Defined as an attribute or exposure that is significantly associated with the developmental of the disease. Risk factors are often suggestive i.e., Presence of a risk

factor does not imply that the disease will occur, and in its absence diseases will not occur. Risk factors may be causative (e.g., Smoking for CA lung), contributory (lack of physical exercise for CHD) or predictive (eg, illiteracy for prenatal mortality).

1.1.2 DIMENSIONS OF GOOD HEALTH

1. Physical: A healthy body maintained by good nutrition, regular exercise, avoiding harmful habits, making informed decisions about health and seeking medical assistance when necessary.

2. Emotional: The ability to understand your own feelings, accepts your limitations, achieve emotional stability and become comfortable with your emotions.

3. Spiritual: The sense that life is meaningful and has a purpose; the ethics, values and morals that guide us and give meaning and direction to life.

4. Intellectual: A state in which your mind is engaged in lively interaction with the world around you. It involves continued learning, problem solving and creativity.

5. Environmental: It reflects the fact that personal health depends on the health of the planet. Environmental wellness also requires learning about and protecting yourself against environmental hazards.

6. Social: The ability to relate well to others, both within and outside the family unit. It encourages contributing to a healthy community by supporting a healthy living environment and initiating better communication with others.

1.1.3 CONCEPT OF HEALTH

An understanding of health is the basis of all the health care. Health is not perceived the same way by all the members of a community including various professional groups (like biomedical scientists, social scientists, health administrators, ecologists) giving rise to confusion about the concept of health. Health has evolved over the centuries from the concept of individual concern to a worldwide social goal. The various changing concepts of health as follows:

1. Biomedical concept
2. Ecological concept
3. Psychosocial concept
4. Holistic concept

1. Biomedical concept

Traditionally health has been considered as an absence of the diseases and if someone was free from disease, then that person was considered healthy. This concept is known as biomedical concept, and it is based on the "germ theory of the disease. "Health means "absence of disease." The medical profession viewed the human body as a machine and disease is an outcome of the breakdown of the machine, and one of the doctor's tasks was to repair the machine. This concept has minimized the role of the environment, social and cultural determinants of the health. Developments in medical and social sciences led to the conclusion that the biomedical concept of health was inadequate.

2. Ecological Concept

Deficiencies in the biomedical concept gave rise to other concepts. The ecologists put forward the concept of ecological concept. Ecologists viewed health as a dynamic equilibrium between man and his environment, and the disease as a maladjustment of the human organism to environment.

3. Psychosocial Concept

Advances in social sciences showed that health is not only a biomedical phenomenon, but one which is influenced by social, psychological, cultural, economic and political factors of the people concerned. These factors must be taken into consideration in defining and measuring health. Thus health is both a biological and social phenomenon.

4. Holistic Concept

The holistic model is a synthesis of all the above concepts. Holistic concept recognizes the strength of social, economic, political and environmental influences on health. It has been variously described as multidimensional process involving the wellbeing of the person as a whole. The emphasis is on the promotion and protection of health. The holistic approach implies that all sectors of the society have an effect on health, in particular, agriculture, animal husbandry, food, industry, education, housing, public works and other sectors.

1.2 PUBLIC HEALTH

"The science and art of preventing disease, prolonging life and promoting health and efficiency through organized community effort." **-CEA Winslow, 1920**

"The process of mobilizing and engaging local, state, national, and international resources to assure the conditions in which people can be healthy" **-The Oxford Textbook of Public Health**

"The science and practice of protecting and improving the health of the community, as by preventive medicine, health education, control of communicable diseases, application of sanitary measures, and monitoring of environmental hazards." **-The American Heritage Dictionary of Public Health.**

"Public health is what we, as a society, do collectively to assure the conditions in which people can be healthy **-Source: Institute of Medicine Report (IOM).**

Public health is an interdisciplinary field. For example, epidemiology, biostatistics, social sciences and management of health services are all relevant. Other important subfields include environmental health, community health, behavioral health, health economics, public policy, mental health, health education, occupational safety, disability, gender issues in health, and sexual and reproductive health.

Public health aims to improve the quality of life through prevention and treatment of disease, including mental health. This is done through the surveillance of cases and health indicators, and through the promotion of healthy behaviors. Common public health initiatives include promotion of hand washing and breastfeeding, delivery of vaccinations, suicide prevention, smoking cessation, obesity education, increasing healthcare accessibility and distribution of condoms to control the spread of sexually transmitted diseases.

Modern public health practice requires multidisciplinary teams of public health workers and professionals. Team might include epidemiologists, biostatisticians, physician assistants, public health nurses, midwives, medical microbiologists, economists, sociologists, geneticists, data managers, environmental health officers (public health inspectors), bioethicists, gender experts, sexual and reproductive health specialists, physicians, and even veterinarians.

1.2.1 THE PUBLIC HEALTH SYSTEM

Public health systems are commonly defined as "all public, private, and voluntary entities that contribute to the delivery of essential public health services within a jurisdiction." This concept ensures that all entities contributions to the health and well-being of the community or state are recognized in assessing the provision of public health services.

The public health system includes

- Public health agencies at state and local levels
- Healthcare providers
- Public safety agencies.
- Human service and charity organizations
- Education and youth development organizations
- Recreation and arts-related organizations
- Economic and philanthropic organizations
- Environmental agencies and organizations
- Environmental agencies and organizations

1.2.2 DIMENSIONS OF PUBLIC HEALTH

It would be useful to explore the concepts contained in the four terms that are commonly used to describe different aspects of public health:-

- Preventive medicine
- Social medicine
- Community health
- Community medicine

1. **PREVENTIVE MEDICINE:** Prevention is better than cure is one of the prime messages of public health. It differentiates public health from the clinical disciplines that are primarily involved with the care of the sick, whilst public health emphasizes the avoidance of illness. Prevention was initially construed narrowly in terms of protective measures like vaccination and improved nutrition that target only healthy people with the aim of preventing the onset of disease. This concept was extended to cover the early diagnosis and treatment of sick persons with the aim of preventing

advanced diseases and in the case of communicable diseases, in preventing the spread within the community. A further extension of the definition covers the treatment of sick individuals aimed at reversing damage and restoring function.

2. **SOCIAL MEDICINE:** The objective of social medicine is to identify the social determinants of health and disease in the community and to devise mechanisms for alleviating suffering and ill health through social policies and actions. Social medicine is based on certain fundamental assumptions:
   - Health as a birth right. Everyone has the right to enjoy the highest possible level of health.
   - The responsibility of the state. It is the duty of governments to ensure that the people have the basic elements that would enable families and individuals to maintain good health and that they have access to good quality health care.
   - Development and health are inter-related. Good health promotes development, and development promotes health.
   - Education promotes health. The strong association between health and level of education is particularly marked with regard to women's education. It affects their health status and behavior as well as that of their children.
   - Social factors have a profound influence on health. Culture, behaviour, social organization, allocation of family resources, healthcare seeking behaviour, etc.
   - Health begins at home. Many of the interventions required for promoting health in developing countries begin at home through changes in individual behaviour and lifestyle, in families and in households.
   - Poverty is a major underlying cause of ill health.
3. **COMMUNITY HEALTH:** Community health deals with the services that aim at protecting the health of the community. The interventions vary from environmental sanitation including vector control to personal health care, immunization, health education and such like. It includes an important diagnostic element - 'community diagnosis' - aimed at surveying and monitoring community health needs and assessing the impact of interventions.
4. **COMMUNITY MEDICINE:** This usually refers to services that are provided at the community level and is now often encompassed in the new term primary care. Community physicians, nurses and other health-care personnel are involved in

providing care at clinics, health centres and in people's homes.

1.2.3 MODERN PUBLIC HEALTH

The modern concept of public health includes all these elements - preventive medicine, social medicine, community medicine, community health. Important features of modern public health include the following characteristic features. It is:

- Multidisciplinary;
- Multisectoral;
- Evidence-based;
- Equity-oriented.

1.MULTIDISCIPLINARY: Although medical practitioners constitute a vital segment of the public health practitioners, the contributions from other health-related disciplines are absolutely essential for achieving the goals of public health. Thus, the public health team would include, as required, doctors, nurses, midwives, dentists and pharmacists; anthropologists, economists and other social scientists; philosophers, ethicists and other experts on moral sciences, as well as educationists, communications experts and managers.

2.MULTISECTORAL: The health sector has two distinct roles. It is primarily responsible for planning and delivering health services. It also has an important leadership function in mobilizing intersectoral action. It should work with other ministries, with public works on water and sanitation, with education on the health of school children and health promotion, with transport on the control of road traffic accidents and with agriculture on food security, nutrition, use of pesticides and the control of zoonotic infections.

3. EVIDENCE-BASED: Modern public health demands that decisions should be science-based and knowledge-based. As far as possible, policy-making should be made only after objective analysis of relevant information. Where information is lacking, there is a clear indication for gathering data and carrying out research to inform decision-making.

4. EQUITY-ORIENTED: Public health programmes must be designed to promote equity as the ultimate goal of all health action. The aim is to ensure for each member of society the highest possible level of health. Public health programmes

should actively monitor equity and make necessary corrections. Public health practitioners must adopt a strong advocacy role in persuading decision-makers and influential members of society that, in the long run, equity in health is to everyone's advantage as a means of securing sustainable development and strengthening the social contract among citizens from a wide variety of backgrounds and between them and their governments.

1.2.4 PUBLIC HEALTH FUNCTIONS

Public health services perform a wide range of functions, which can be classified as four key elements

1. Assessing and monitoring of the health of the population
2. Planning, implementing and evaluating public health programmes
3. Identifying and dealing with environmental hazards
4. Communicating with people and organizations to promote public health.

1. ASSESSING AND MONITORING OF THE HEALTH OF THE POPULATION:-

The objective is to identify and deal with health problems of the population. The activities range from the investigation of an acute epidemic outbreak to longer-term definition of the priority health problems and their determinants. The public health approach also includes a ranking of problems in terms of their contribution to the burden of disease and their amenability to control through cost-effective interventions. The information gathered provides a sound basis for making decisions about the best approach for dealing with an acute emergency such as an outbreak of an epidemic disease like cholera; it also provides the basis for broader and longer-term decisions about policy, priorities and programmes.

2. PLANNING, IMPLEMENTING AND EVALUATING PUBLIC HEALTH PROGRAMMES

Public health practitioners are also concerned with the design and management of public health programmes at district, regional and national levels. Their role is dominant at the primary health- care level but they are also involved in decisions that affect services for the referral and specialist services.

3. IDENTIFYING AND DEALING WITH ENVIRONMENTAL HAZARDS

Protection of the population against environmental hazards including accidents is a prime function of public health. This is a well-recognized traditional role of public health with regard to the provision of safe water, the disposal of wastes, control of vectors and modern hazards from toxic wastes and radioactive chemicals.

4. COMMUNICATING WITH PEOPLE AND ORGANIZATIONS TO PROMOTE PUBLIC HEALTH

Effective communication is an important tool that public health workers use to bring about change in the behaviour of individuals and communities as well as in advising organizations within and outside the public sector.

1.2.5 THE 10 ESSENTIAL PUBLIC HEALTH SERVICES

The 10 Essential Public Health Services describe the public health activities that all communities should undertake and serve as the framework for the NPHPS instruments. Public health systems should:

1. Monitor health status to identify and solve community health problems.
2. Diagnose and investigate health problems and health hazards in the community.
3. Inform, educate, and empower people about health issues.
4. Mobilize community partnerships and action to identify and solve health problems.
5. Develop policies and plans that support individual and community health efforts.
6. Enforce laws and regulations that protect health and ensure safety.
7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable.
8. Assure competent public and personal health care workforce.
9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
10. Research for new insights and innovative solutions to health problems.

1.2.6 THE PUBLIC HEALTH APPROACH

The principles of public health provide a useful framework for both continuing to

investigate and understand the causes and consequences of violence and for preventing violence from occurring through primary prevention programmes, policy interventions and advocacy. The activities of VPA are guided by the scientifically-tested and proven principles and recommendations described in the World report on violence and health. This public health approach to violence prevention seeks to improve the health and safety of all individuals by addressing underlying risk factors that increase the likelihood that an individual will become a victim or a perpetrator of violence.

The approach consists of four steps:

1. To define the problem through the systematic collection of information about the magnitude, scope, characteristics and consequences of violence.
2. To establish why violence occurs using research to determine the causes and correlates of violence, the factors that increase or decrease the risk for violence, and the factors that could be modified through interventions.
3. To find out what works to prevent violence by designing, implementing and evaluating interventions.
4. To implement effective and promising interventions in a wide range of settings. The effects of these interventions on risk factors and the target outcome should be monitored, and their impact and cost-effectiveness should be evaluated.

2.7 EVALUATION OF PUBLIC HEALTH

Program evaluation is an essential organizational practice in public health; however, it is not practiced consistently across program areas, nor is it sufficiently well-integrated into the day-to- day management of most programs. Program evaluation is also necessary for fulfilling CDC's operating principles for guiding public health activities, which include

a) Using science as a basis for decision-making and public health action;

b) Expanding the quest for social equity through public health action;

c) Performing effectively as a service agency;

d) Making efforts outcome oriented; and

e) Being accountable.

These operating principles imply several ways to improve how public health

activities are planned and managed. They underscore the need for programs to develop clear plans, inclusive partnerships, and feedback systems that allow learning and ongoing improvement to occur. One way to ensure that new and existing programs honor these principles is for each program to conduct routine, practical evaluations that provide information for management and improve program effectiveness.

This report presents a framework for understanding program evaluation and facilitating integration of evaluation throughout the public health system. The purposes of this report are to

- Summarize the essential elements of program evaluation;
- Provide a framework for conducting effective program evaluations;
- Clarify the steps in program evaluation;
- Review standards for effective program evaluation; and
- Address misconceptions regarding the purposes and methods of program evaluation.

1.2.7.1. PROCEDURES FOR DEVELOPING THE FRAMEWORK

The Evaluation Working Group, with representatives from throughout CDC and in collaboration with state and local health officials, sought input from eight reference groups during its year-long information-gathering phase. Contributors included:

- Evaluation experts,
- Public health program managers and staff,
- State and local public health officials,
- Nonfederal public health program directors,
- Public health organization representatives and teachers,
- Community-based researchers,
- U.S. Public Health Service (PHS) agency representatives, and
- CDC staff.

1.2.7.2. KEY CONCEPTS

Throughout this report, the term program is used to describe the object of evaluation, which

could be any organized public health action. This definition is deliberately broad because the framework can be applied to almost any organized public health activity, including direct service interventions, community mobilization efforts, research initiatives, surveillance systems, policy development activities, outbreak investigations, laboratory diagnostics, communication campaigns, infrastructure building projects, training and educational services, and administrative systems. The additional terms defined in this report were chosen to establish a common evaluation vocabulary for public health professionals.

1.2.7.3. ASSIGNING VALUE TO PROGRAM ACTIVITIES

Questions regarding values, in contrast with those regarding facts, generally involve three interrelated issues: merit (i.e., quality), worth (i.e., cost-effectiveness), and significance (i.e., importance). If a program is judged to be of merit, other questions might arise regarding whether the program is worth its cost. Also, questions can arise regarding whether even valuable programs contribute important differences. Assigning value and making judgments regarding a program on the basis of evidence requires answering the following questions:

- What will be evaluated? (That is, what is the program and in what context does it exist?)
- What aspects of the program will be considered when judging program performance?
- What standards (i.e., type or level of performance) must be reached for the program to be considered successful?
- What evidence will be used to indicate how the program has performed?
- What conclusions regarding program performance are justified by comparing the available evidence to the selected standards?
- How will the lessons learned from the inquiry be used to improve public health effectiveness?

These questions should be addressed at the beginning of a program and revisited throughout its implementation. The framework described in this report provides a systematic approach for answering these questions.

1.2.7.4. FRAMEWORK FOR PROGRAM EVALUATION IN PUBLIC HEALTH

Effective program evaluation is a systematic way to improve and account for public health actions by involving procedures that are useful, feasible, ethical, and accurate. The recommended framework was developed to guide public health professionals in using program evaluation. It is a practical, non prescriptive tool, designed to summarize and organize the

essential elements of program evaluation. The framework comprises steps in evaluation practice and standards for effective evaluation.

The framework is composed of six steps that must be taken in any evaluation. They are starting points for tailoring an evaluation to a particular public health effort at a particular time. Because the steps are all interdependent, they might be encountered in a nonlinear sequence; however, an order exists for fulfilling each earlier steps provide the foundation for subsequent progress. Thus, decisions regarding how to execute a step are iterative and should not be finalized until previous steps have been thoroughly addressed. The steps are as follows:

Step 1: Engage stakeholders:

Those persons involved in or affected by the program and primary Users of the evaluation.

Step 2: Describe the program:

Need, expected effects, activities, resources, stage, context, logic model.

Step 3: Focus the evaluation design:

Purpose, users, uses, questions, methods, agreements.

Step 4: Gather credible evidence:

Indicators, sources, quality, quantity, logistics.

Step 5: Justify conclusions:

Standards, analysis/synthesis, interpretation, judgment, recommendations

Step 6: Ensure use and share lessons learned:

Design, preparation, feedback, follow-up, Dissemination.

Adhering to these six steps will facilitate an understanding of a program's context (e.g., the program's history, setting, and organization) and will improve how most evaluations are conceived and conducted.

The second element of the framework is a set of 30 standards for assessing the quality of evaluation activities, organized into the following four groups:

Standard 1: utility: Serve the information needs of intended users

Standard 2: feasibility: Be realistic, prudent, diplomatic, and frugal.

Standard 3: propriety: Behave legally, ethically, and with regard for the welfare of those involved and those affected.

Standard 4: accuracy: Reveal and convey technically accurate information.

1.2.7.5. STEPS IN PROGRAM EVALUATION

STEP 1: ENGAGING STAKEHOLDERS

Definition Fostering input, participation, and power-sharing among those persons who have an investment in the conduct of the evaluation and the findings; it is especially important to engage primary users of the evaluation.

Role Helps increase chances that the evaluation will be useful; can improve the evaluation's credibility, clarify roles and responsibilities, enhance cultural competence, help protect human subjects, and avoid real or perceived conflicts of interest.

Example Activities

a. Consulting insiders (e.g., leaders, staff, clients, and program funding sources) and outsiders (e.g., skeptics).

b. Taking special effort to promote the inclusion of less powerful groups or individuals.

c. Coordinating stakeholder input throughout the process of evaluation design, operation, and use.

d. Avoiding excessive stakeholder identification, which might prevent progress of the evaluation.

STEP 2: DESCRIBING THE PROGRAM DEFINITION

Scrutinizing the features of the program being evaluated, including its purpose and place in a function and the way that it actually was implemented. Also includes features of the program's larger context. Description includes information regarding the way the program was intended to context that are likely to influence conclusions regarding the program.

Role Improves evaluation's fairness and accuracy; permits a balanced assessment of strengths and weaknesses and helps stakeholders understand how program features fit together and relate to a larger context.

Example Activities

a. Characterizing the need (or set of needs) addressed by the program

b. Listing specific expectations as goals, objectives, and criteria for success

c. Clarifying why program activities are believed to lead to expected changes

d. Drawing an explicit logic model to illustrate relationships between program elements and expected changes;

e. Assessing the program's maturity or stage of development;

f. Analyzing the context within which the program operates;

g. Considering how the program is linked to other ongoing efforts; and
h. Avoiding creation of an overly precise description for a program that is under development.

STEP 3: FOCUSING THE EVALUATION DESIGN

Definition Planning in advance where the evaluation is headed and what steps will be taken; process is iterative (i.e., it continues until a focused approach is found to answer evaluation questions with methods that stakeholders agree will be useful, feasible, ethical, and accurate); evaluation questions and methods might be adjusted to achieve an optimal match that facilitates use by primary users.

Role Provides investment in quality; increases the chances that the evaluation will succeed by identifying procedures that are practical, politically viable, and cost-effective; failure to plan thoroughly can be self-defeating, leading to an evaluation that might become impractical or useless; when stakeholders agree on a design focus, it is used throughout the evaluation process to keep the project on track.

Example Activities

a. Meeting with stakeholders to clarify the intent or purpose of the evaluation;
b. Learning which persons are in a position to actually use the findings, then orienting the plan to meet their needs;
c. Understanding how the evaluation results are to be used;
d. Writing explicit evaluation questions to be answered;
e. Describing practical methods for sampling, data collection, data analysis, interpretation, and judgment;
f. Preparing a written protocol or agreement that summarizes the evaluation procedures, with clear roles and responsibilities for all stakeholders; and
g. Revising parts or all of the evaluation plan when critical circumstances change.

STEP 4: GATHERING CREDIBLE EVIDENCE

Definition Compiling information that stakeholders perceive as trustworthy and 'relevant for answering their questions. Such evidence can be experimental or observational, qualitative or quantitative, or it can include a mixture of methods. Adequate data might be available and easily accessed, or it might need to be defined and new data collected. Whether a body of evidence is credible to stakeholders depends on such factors as how the questions were posed, sources of

information, conditions of data collection, reliability of measurement, validity of interpretations, and quality control procedures.

Role Enhances the evaluation's utility and accuracy; guides the scope and selection of information and gives priority to the most defensible information sources; promotes the collection of valid, reliable, and Systematic information that is the foundation of any effective evaluation.

Example Activities

a. Choosing indicators that meaningfully address evaluation questions;

b. Describing fully the attributes of information sources and the rationale for their selection;

c. Establishing clear procedures and training staff to collect high-quality information;

d. Monitoring periodically the quality of information obtained and taking practical steps to improve quality;

e. Estimating in advance the amount of information required or establishing criteria for deciding when to stop collecting data in situations where an iterative or evolving process is used.

f. Safeguarding the confidentiality of information and information sources.

STEP 5: JUSTIFYING CONCLUSIONS

Definition Making claims regarding the program that are warranted on the basis of data that have been compared against pertinent and defensible ideas of merit, worth, or significance (i.e., against standards of values); conclusions are justified when they are linked to the evidence gathered and consistent with the agreed on values or standards of stakeholders.

Role Reinforces conclusions central to the evaluation's utility and accuracy; involves values clarification, qualitative and quantitative data analysis and synthesis, systematic interpretation, and appropriate comparison against relevant standards for judgment.

Example Activities

a. Using appropriate methods of analysis and synthesis to summarize findings.

b. Interpreting the significance of results for deciding what the findings mean.

c. Making judgments according to clearly stated values that classify a result (e.g., as positive or negative and high or low).

d. Considering alternative ways to compare results (e.g., compared with program objectives, a comparison group, national norms, past performance, or needs).

e. Generating alternative explanations for findings and indicating why these explanations

should or should not be discounted.

f. Recommending actions or decisions that are consistent with the conclusions.

g. Limiting conclusions to situations, time periods, persons, contexts, and purposes for which the findings are applicable.

STEP 6: ENSURING USE AND SHARING LESSONS LEARNED

Definition Ensuring that

a) Stakeholders are aware of the evaluation procedures and findings;

b) The findings are considered in decisions or actions that affect the program (i.e., findings use);

c) Those who participated in the evaluation have had a beneficial experience (i.e., process use).

Role Ensures that evaluation achieves its primary purpose being useful; however, several factors might influence the degree of use, including evaluator credibility, report clarity, report timeliness and dissemination, disclosure of findings, impartial reporting, and changes in the program or organization context.

Example Activities

a. Designing the evaluation to achieve intended use by intended users;

b. Preparing stakeholders for eventual use by rehearsing throughout the project how different kinds of conclusions would affect program operations;

c. Providing continuous feedback to stakeholders regarding interim findings, provisional interpretations, and decisions to be made that might affect likelihood of use;

d. Scheduling follow-up meetings with intended users to facilitate the transfer of evaluation conclusions into appropriate actions or decisions; and

e. Disseminating both the procedures used and the lessons learned from the evaluation to stakeholders, using tailored communications strategies that meet their particular needs.

1.2.7.6. STANDARDS

1. UTILITY STANDARDS

The following utility standards ensure that an evaluation will serve the information needs of intended users:

A. Stakeholder identification. Persons involved in or affected by the evaluation should be identified so that their needs can be addressed.

B. Evaluator credibility. The persons conducting the evaluation should be trustworthy and competent in performing the evaluation for findings to achieve maximum credibility and acceptance.

C. Information scope and selection. Information collected should address pertinent questions regarding the program and be responsive to the needs and interests of clients and other specified stakeholders.

D. Values identification. The perspectives, procedures, and rationale used to interpret the findings should be carefully described so that the bases for value judgments are clear.

E. Report clarity. Evaluation reports should clearly describe the program being evaluated, including its context and the purposes, procedures, and findings of the evaluation so that essential information is provided and easily understood.

F. Report timeliness and dissemination. Substantial interim findings and evaluation reports should be disseminated to intended users so that they can be used in a timely fashion.

G. Evaluation impact. Evaluations should be planned, conducted, and reported in ways that encourage follow-through by stakeholders to increase the likelihood of the evaluation being used.

2. FEASIBILITY STANDARDS

The following feasibility standards ensure that an evaluation will be realistic, prudent, diplomatic, and frugal:

A. Practical procedures. Evaluation procedures should be practical while needed information is being obtained to keep disruption to a minimum.

B. Political viability. During planning and conduct of the evaluation, consideration should be given to the varied positions of interest groups so that their cooperation can be obtained and possible attempts by any group to curtail evaluation operations or to bias or misapply the results can be averted or counteracted.

C. Cost-effectiveness. The evaluation should be efficient and produce valuable information to justify expended resources.

3.PROPRIETY STANDARDS

The following propriety standards ensure that an evaluation will be conducted legally, ethically, and with regard for the welfare of those involved in the evaluation as well as those affected by its

results:

A. Service orientation. The evaluation should be designed to assist organizations in addressing and serving effectively the needs of the targeted participants.

B. Formal agreements. All principal parties involved in an evaluation should agree in writing to their obligations (i.e., what is to be done, how, by whom, and when) so that each must adhere to the conditions of the agreement or renegotiate it.

C. Rights of human subjects. The evaluation should be designed and conducted in a manner that
respects and protects the rights and welfare of human subjects.

D. Human interactions. Evaluators should interact respectfully with other persons associated with an evaluation, so that participants are not threatened or harmed.

E. Complete and fair assessment. The evaluation should be complete and fair in its examination
and recording of strengths and weaknesses of the program so that strengths can be enhanced and problem areas addressed.

F. Disclosure of findings. The principal parties to an evaluation should ensure that the full evaluation findings with pertinent limitations are made accessible to the persons affected by the evaluation and any others with expressed legal rights to receive the results.

G. Conflict of interest. Conflict of interest should be handled openly and honestly so that the evaluation processes and results are not compromised.

H. Fiscal responsibility. The evaluator's allocation and expenditure of resources should reflect sound accountability procedures by being prudent and ethically responsible, so that expenditures are accountable and appropriate.

4. ACCURACY STANDARDS

The following accuracy standards ensure that an evaluation will convey technically adequate information regarding the determining features of merit of the program:

A. Program documentation. The program being evaluated should be documented clearly and accurately.

B. Context analysis. The context in which the program exists should be examined in enough detail to identify probable influences on the program.

C. Described purposes and procedures. The purposes and procedures of the evaluation should

be monitored and described in enough detail to identify and assess them.

D. Defensible information sources. Sources of information used in a program evaluation should be described in enough detail to assess the adequacy of the information.

E. Valid information. Information-gathering procedures should be developed and implemented to ensure a valid interpretation for the intended use.

F. Reliable information. Information-gathering procedures should be developed and implemented to ensure sufficiently reliable information for the intended use.

G. Systematic information. Information collected, processed, and reported in an evaluation should be systematically reviewed and any errors corrected.

H. Analysis of quantitative information. Quantitative information should be analyzed appropriately and systematically so that evaluation questions are answered effectively.

I. Analysis of qualitative information. Qualitative information should be analyzed appropriately and systematically to answer evaluation questions effectively.

J. Justified conclusions. Conclusions reached should be explicitly justified for stakeholders' assessment.

K. Impartial reporting. Reporting procedures should guard against the distortion caused by personal feelings and biases of any party involved in the evaluation to reflect the findings fairly.

L. Meta evaluation. The evaluation should be formatively and summative evaluated against these and other pertinent standards to guide its conduct appropriately and, on completion, to enable close examination of its strengths and weaknesses by stakeholders.

1.3 THE CONCEPT OF DISEASE

The concept of disease is used in accounting for physiological and psychological (or behavioral) disorders, offering generalizations concerning patterns of phenomena which we find disturbing and unpleasant. The concept of disease is a general scheme for explaining, predicting, and controlling dimensions of the human condition. It grades into other concepts which are political, social, educational, and moral. The difference between the concept of disease and these other concepts, and the similarity of the various models of disease is complex and problematic. It is not even clear that all the models of disease fall within a single genus.

A disease is a particular abnormal condition that negatively affects the structure or function of all or part of an organism, and that is not due to any immediate external injury. Diseases are often known to be medical conditions that are associated with specific symptoms and signs. A disease may be caused by external factors such as pathogens or by internal dysfunctions. For example, internal dysfunctions of the immune system can produce a variety of different diseases including various forms of immunodeficiency, hypersensitivity, allergies and autoimmune disorders.

In humans, disease is often used more broadly to refer to any condition that causes pain, dysfunction, distress, social problems, or death to the person afflicted, or similar problems for hose in contact with the person. In this broader sense, it sometimes includes injuries, disabilities, disorders, syndromes, infections, isolated symptoms, deviant behaviors, and atypical variations of structure and function, while in other contexts and for other purposes these may be considered distinguishable categories. Diseases can affect people not only physically, but also mentally, as contracting and living with a disease can alter the affected person's perspective on life. Death due to disease is called death by natural causes.

There are four main types of disease:

a. Infectious diseases
b. Deficiency diseases
c. Hereditary diseases
d. Physiological diseases

Diseases can also be classified in other ways, such as communicable versus non-communicable

diseases. The deadliest diseases in humans are coronary artery disease (blood flow obstruction), followed by cerebrovascular disease and lower respiratory infections. In developed countries, the diseases that cause the most sickness overall are neuropsychiatric conditions, such as depression and anxiety. The study of disease is called Pathology, which includes the study of etiology, or cause.

1.3.1 CONCEPT OF PREVENTION AND CONTROL OF DISEASE

1.3.1.1. DISEASE PREVENTION: DEFINITION

Disease prevention covers measures not only to prevent the occurrence of disease, such as risk factor reduction, but also to arrest its progress and reduce its consequences once established.

Adapted from Glossary of Terms used in Health for All series. WHO, Geneva, 1984

Activities designed to protect patients and other members of the public from actual or potential health threats and their harmful consequences.

Mosby's Medical Dictionary, 8th edtition. 2009

Successful prevention depends upon:

a. Knowledge of causation
b. Dynamics of transmission
c. Identification of risk factors and risk groups
d. Evaluation and development of these procedures
e. Facilities for these treatment procedures
f. Availability of prophylactic or early detection and treatment measures

1.3.1.2. LEVELS OF PREVENTION

1. Primordial Prevention: Prevention of emergence or development of risk factors in countries or population groups in which they have not yet appeared.

INTERVENTION: Individual and mass education.

EXAMPLES: National programmes and policies on:

- Food and nutrition
- Against smoking and drugs

- To promote regular physical exercise.

2. Primary Prevention: Action taken prior to onset of disease, which removes the possibility that a disease will ever occur.

INTERVENTION: Pre pathogenesis stage of disease.

MODES OF INTERVENTION: Health promotion and Specific protection.

3. Secondary Prevention: Action which halts the progress of the disease at its incipient stage and prevents complication.

INTERVENTION: Early pathogenesis stage.

MODES OF INTERVENTION: Early diagnosis and Adequate/prompt treatment.

4. Tertiary Prevention: All measures available to reduce or limit impairments and disabilities and minimize suffering caused by existing departures from good health and to promote the patients adjustment to irremediable conditions.

INTERVENTION: Late pathogenesis stage.

MODES OF INTERVENTION: Disability limitations and Rehabilitation.

5. Quaternary Prevention: The action taken to identify patient at risk of over-medication, to protect him from new medical invasion, and to suggest to him interventions, which are ethically acceptable. Quaternary prevention is the set of health activities to mitigate or avoid the consequences of unnecessary or excessive intervention of the health system.

INTERVENTION: Healthcare professionals must be aware of the consequences of their decisions, and include quaternary prevention interventions in their daily clinical practice with each patient.

1.3.2 CONTROL OF DISEASE

- Control of communicable diseases, which implies reducing their occurrence, has always been a major public health priority.
- In the past, control measures were based on incomplete knowledge of the epidemiology of the disease to be controlled and were directed at perceived factors of disease causation.
- As knowledge of the epidemiology of diseases improved, and with the development of

scientifically sound intervention techniques, it has been possible to direct specific control measures at factors related to the occurrence of particular diseases.

- With recent developments in disease control technologies, new and more optimistic targets for the reduction in the occurrence of a disease have been put forward, and the concept of eradication, which implies that the disease will no longer occur in a population, has been widely adopted.
- As applied to many communicable and some non-communicable diseases, the control means ongoing operations or programs aimed at reducing the incidence and/or prevalence of such diseases.
- Control may be looked upon as a process with different levels of reduction in frequency, reduction to a point where a disease ceases to become a major public health problem or reduction to a point of great rarity and extermination.
- In this sense elimination and eradication are the highest levels of control.
- Control of diseases thus refers to the actions and programs directed towards reducing disease incidence (new infections), reducing disease prevalence (infections in the community at any given point in time), or completely eradicating the disease.

1.3.2.1. DISEASE CONTROL METHODS

The term "disease control" describes (ongoing) operations aimed at reducing:

1. The incidence of disease
2. The duration of disease, and consequently the risk of transmission
3. The effects of infection, including both the physical and psychosocial complications; and
4. The financial burden to the community.

The Following methods are used as disease control methods:

1. Health Promotion

- Health promotion is "the process of enabling people to increase control over, and to improve health".
- It is not directed against any particular disease but is intended to strengthen the host through a variety of approaches (interventions).
- The well-known interventions in this area are:

  1. Health education

2. Environmental modifications
3. Nutritional interventions
4. Lifestyle and behavioral changes

2. Specific Protection

To avoid disease altogether is the ideal but this is possible only in a limited number of cases.

1. The following are some of the currently available interventions aimed at specific protection:

1. Immunization
2. Use of specific nutrients
3. Chemoprophylaxis
4. Protection against occupational hazards
5. Protection against accidents
6. Protection from carcinogens
7. Avoidance of allergens
8. The control of specific hazards in the general environment, e.g., air pollution, noise control
9. Control of consumer product quality and safety of foods, drugs, cosmetics, etc.

3. Early Detection and Treatment

1. They are the main interventions of disease control.
2. The earlier a disease is diagnosed and treated the better it is from the point of view of prognosis and preventing the occurrence of further cases or any long term disability.
3. It is like stamping out the "spark" rather than calling the fire brigade to put out the fire.

4. Quarantine and Isolation

1. Isolation and quarantine help protect the public by preventing exposure to people who have or may have a contagious disease.
2. Isolation separates sick people with a contagious disease from people who are not sick.
3. Quarantine separates and restricts the movement of people who were exposed to a contagious disease to see if they become sick.

1.3.3. SOCIAL CAUSES OF DISEASE

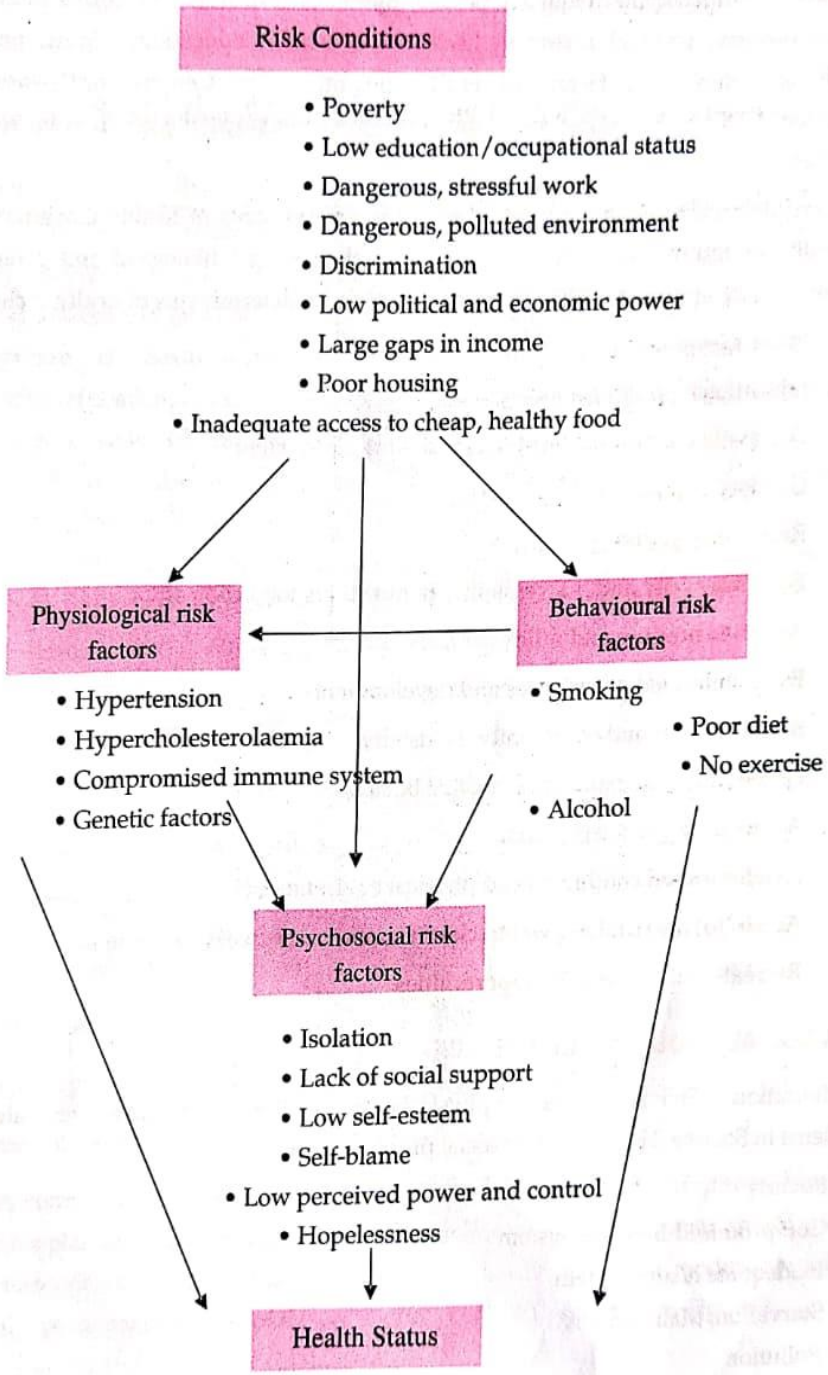

Figure 8: Social Causes of Diseases

Any of a group of variables, such as specific disease agents and environmental factors that directly or indirectly influence the frequency or distribution of a disease. Social determinants of health such as poverty, unequal access to health care, lack of education, stigma, and racism are

underlying, contributing factors of health inequities. The Centers for Disease Control and Prevention (CDC) is committed to achieving improvements in people's lives by reducing health inequities.

The social determinants of health are a subset of determinants of health. Governmental policies, availability of healthcare, individual behavioral choices, and biological and genetic factors are other notable determinants of health. Examples of social determinants of health include:

- Income level
- Educational opportunities
- Occupation, employment status, and workplace safety
- Gender inequity
- Racial segregation
- Food insecurity and inaccessibility of nutritious food choices
- Access to housing and utility services
- Early childhood experiences and development
- Social support and community inclusivity
- Crime rates and exposure to violent behavior
- Availability of transportation
- Neighborhood conditions and physical environment
- Access to safe drinking water, clean air, and toxin-free environments
- Recreational and leisure opportunities

1.3.4 SOCIAL PROBLEMS OF THE SICK

The definition of Sick is "affected by physical or mental illness" so sickness generates so many Problems in Society. Here are some social problems of sick.

- Poverty
- Compromised Immune system
- Inadequate health system
- Starvation, Malnutrition
- Pollution
- Lack of Funding
- Disrupted Social System

- Excess Incorrect use of Antibiotics and Antivirals
- Pathogen Evolution

1.4 SOCIAL AND HEALTH EDUCATION

- Social and Health education forms an important part of the health promotion activities currently occurring in the countries that make up the WHO Eastern Mediterranean Region. These activities occur in schools, workplaces, clinics and communities and include topics such as healthy eating, physical activity, tobacco use prevention, mental health, HIV/AIDS prevention and safety. Staffs who are recognized as "health educators" are hard-working, enthusiastic and dedicated. However, a number of challenges exist, including having access to appropriate up-to-date tools on how to engage in effective health education practice and confusion as to how health education can meaningfully contribute to the goals of health promotion. In response to these challenges, a number of ministry of health staff within the Region have expressed a need for more clearly defined roles and updated skills in health education practice. The purpose of this foundation document is to fill those gaps. It reviews health education theories and definitions, identifies the components of evidence-based health education and outlines the abilities necessary to engage in effective practice.

  The major responsibilities for health educators are:

- Assessing individual and community needs for health education
- Planning effective health education programmes
- Implementing health education programmes
- Evaluating the effectiveness of health education programmes
- Communicating health and health education needs, concerns and resources
- Coordinating the provision of health education services
- Acting as resource people in health education.

  Health educators commonly use planning models when developing their programmes. Planning models are used for planning, implementing and evaluating health education programmes and for providing a framework on which to build a plan.

1.4.1. HEALTH AND NUTRITION

An Overview Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Health is multidimensional, continuous

interaction among the various dimensions such as physical, mental, social, spiritual, emotional, vocational and political is important for ensuring good health.

Nutrition is the intake of food, considered in relation to the body's dietary needs. Good nutrition is one with an adequate, well balanced diet combined with regular physical activity and is a cornerstone of good health. Health and nutritional status of a population is a crucial indicator of the progress of a nation. National level data on health and nutrition indicators provide clear evidence of the poor state of health and nutrition in India.

1.4.2. BALANCED DIET

A balanced diet is a diet that contains differing kinds of foods in certain quantities and proportions so that the requirement for calories, proteins, minerals, vitamins and alternative nutrients is adequate and a small provision is reserved for additional nutrients to endure the short length of leanness.

Calorie composition of a balanced diet: there are seven essential factors for a balanced diet: carbs, proteins, fat, fibre, vitamins, minerals, and water. The rough percentage of daily calories that should come from each factor is shown in Table 1.

Table 1: Essential nutrients for a healthy balanced diet

Nutrients	% of daily calories	Function	Source
Carbohydrates	45–55%	Energy	Grains (refined & unrefined): wheat, maize, corn, millet, oats, rice, flour, pasta, noodles; potatoes; sweet potatoes, yam. Fruit (sugar).
Protein	10–35%	Tissue growth and maintenance	Meat, fish, nuts, eggs, soya, beans and pulses.
Fat	20–35% from fat	Energy, energy storage, hormone production	Nuts, seeds, plant oils, dairy products (milk, cheese).
Fibre	Included in carbs.	Regulates blood sugar levels, bowel function and bowel health.	Peas, beans, vegetables, fruit, oats, whole grains, brown rice, nuts, seeds.
Vitamins & minerals	Trace	Metabolism regulation, aiding cell growth, other biochemical functions	Specific to each vitamin/mineral. A range of vegetables, lean meat, nuts and seeds will cover most people's needs.
Water	0	Maintaining hydration	Drinking water, other beverages. About 20% of water intake comes from food.

1.4.2.1 BENEFITS OF BALANCED DIET

Consumption of balanced diet is essential for sustaining good health as it:

1. reduces the risk of nutritional deficiency.
2. protects against certain non- communicable diseases such as obesity, diabetes, cardiovascular diseases, some types of cancer and skeletal conditions.
3. provides essential vitamins and minerals that boost immunity.
4. helps maintaining healthy weight.

1.4.3 NUTRITIONAL DEFICIENCY

The body requires many different vitamins and minerals that are crucial for both body development and preventing disease. These vitamins and minerals are often referred to as micronutrients. They aren't produced naturally in the body, so you have to get them from your diet.

A nutritional deficiency occurs when the body doesn't absorb or get from food the necessary amount of a nutrient. Deficiencies can lead to a variety of health problems. These can include digestion problems, skin disorders, stunted or defective bone growth, and even dementia. The amount of each nutrient you should consume depends on your age. In the United States, many foods that you buy in the grocery store such as cereals, bread, and milk are fortified with nutrients that are needed to prevent nutritional deficiency. But sometimes your body is unable to absorb certain nutrients even if you're consuming them. It's possible to be deficient in any of the nutrients your body needs.

1.4.3.1. SYMPTOMS OF NUTRITIONAL DEFICIENCIES

The symptoms of a nutritional deficiency depend on which nutrient the body lacks. However, there are some general symptoms you might experience. These can include:

Pallor, or pale skin

Fatigue

Weakness

Trouble breathing

Unusual food cravings

Hair loss

Periods of lightheadedness

Constipation

Sleepiness

Heart palpitations

Feeling faint or fainting

Depression

Tingling and numbness of the joints

Menstrual issues, such as missed periods or very heavy cycles

Poor concentration

1.4.3.2. CAUSES OF NUTRITIONAL DEFICIENCY

1. Inadequate up take of diet or a specific nutrient or vitamin.

2. Access of a specific nutrient.

3. Malabsorption

4. disease.

1.4.3.3 TYPES OF DEFICIENCY

1. Mineral deficiency

2. vitamin deficiency

3. proteins deficiency

4. lipids deficiency

1.4.3.4 MAJOR MINERALS DEFICIENCES DISORDER & TREATMENT

Table 2: Major minerals deficiencies disorder & treatment

S.No.	Minerals	Deficiency Disorder	Treatment
1	Calcium	Rickets though caused due to vit. D deficiency, Osteomalcia in adults ,Osteoporosis ,Muscular disorders like tetany ,Skin disorders like tanning of skin Symptoms(bone diseases) Abnormal bone shape, bone pain, pigeon breast, board legs,ets Muscle Muscle cramps, spasms or tremors	Use of Ca rich diet ,Ca supplementation,Vit. D supplementation,Sun bath
2	Phosphorus	Rickets, Osteoporosis, Osteomalacia Symptoms Board legs ,soft bons,bone pain etc post like Ca deficiency Treatment	Use of milk products, egg yolk, legumes, nuts, and whole grains, P supplementation etc.
3	Iron	Anemia , Colon cancer, Fatigue , Over menstruation in female etc.	Use of Iron rich food ,Iron supplementation etc
4	Iodine	Goiter, Hypothyroid, hair loss etc	Thyroid gland Treatment, Sea food, iodized salt, milk products
5	Vitamins Deficiency	Anemia, Scurvy, rickets, Less Fertility etc.	Salmon, Cod liver oil, Egg yolks, Mushrooms, Fortified foods, green leafy vegetables
6	Fats deficiency	Dermatitis, alopecia, thrombocytopenia, and, in children intellectual disability.	butter, cream, ice cream, milk and cheese. Meat – red meat, processed meats and chicken. Some plant-derived products – coconut oil and cream, palm oil and cooking margarine

1.4.4 VITAMINS DEFICIENCY

Vitamins are organic compounds that are required in small amounts in our diet but their deficiency causes specific diseases. Most of the vitamins cannot be synthesized in our body but plants can synthesize almost all of them, so they are considered as essential food factors. However, the bacteria of the gut can produce some of the vitamins required by us. All the vitamins are generally available in our diet. Different vitamins belong to various chemical classes and it is difficult to define them on the basis of structure. They are generally regarded as organic compounds required in the diet in small amounts to perform specific biological functions for normal maintenance of optimum growth and health of the organism. Vitamins are designated by alphabets A, B, C, D, etc. Some of them are further named as sub-groups e.g. B1, B2, B6, B12, etc. Vitamin A keeps our

skin and eyes healthy. Vitamin C helps body to fight against many diseases. Vitamin C gets easily destroyed by heat during cooking. Vitamin D helps our body to use calcium for bones and teeth. Excess of vitamins is also harmful and vitamin pills should not be taken without the advice of doctor.

The term "Vitamine" was coined from the word vital + amine since the earlier identified compounds had amino groups.

Later work showed that most of them did not contain amino groups, so the letter 'e' was dropped and the term vitamin is used these days. Vitamins are classified into two groups depending upon their solubility in water or fat.

Fat soluble vitamins

Vitamins which are soluble in fat and oils but insoluble in water are kept in this group. These are vitamins A, D, E and K. They are stored in liver and adipose (fat storing) tissues.

Water soluble vitamins

B group vitamins and vitamin C are soluble in water so they are grouped together. Water soluble. vitamins must be supplied regularly in diet because they are readily excreted in urine and cannot be stored (except vitamin B12) in our body.

Deficiency Diseases

A person may be getting enough food to eat, but sometimes the food may not contain a particular nutrient. If this continues over a long period of time, the person may suffer from its deficiency.

Deficiency of one or more nutrients can cause diseases or disorders in our body. Diseases that occur due to lack of nutrients over a long period are called deficiency diseases.

1. Vitamin A- Night blindness
2. Vitamin B1- -Beriberi
3. Vitamin B2-Ariboflavinosis
4. Vitamin B3--Pellagra
5. Vitamin B5- -Paresthesia
6. Vitamin B6--Anemia
7. Vitamin B7-Dermatitis, enteritis
8. Vitamin B9 & Vitamin B12-Megaloblastic anemia

9. Vitamin C-Scurvy, Swelling of Gums
10. Vitamin D-Rickets & Osteomalacia
11. Vitamin E-Less Fertility
12. Vitamin K-Non-Clotting of Blood.

1.4.5 MALNUTRITION AND ITS PREVENTION

Malnutrition refers to when a person's diet does not provide enough nutrients or the right balance of nutrients for optimal health. Malnutrition is a condition that results from nutrient deficiency or overconsumption.

1.4.5.1. TYPES OF MALNUTRITION

Under nutrition: This type of malnutrition results from not getting enough protein, calories or micronutrients. It leads to low weight-for-height (wasting), height-for-age (stunting) and weight-for-age (underweight).

Over nutrition: Over consumption of certain nutrients, such as protein, calories or fat, can also lead to malnutrition. This usually results in overweight or obesity. People who are undernourished often have deficiencies in vitamins and minerals, especially iron, zinc, vitamin A and iodine.

However, micronutrient deficiencies can also occur with over nutrition. It's possible to be overweight or obese from excessive calorie consumption but not get enough vitamins and minerals at the same time. That's because foods that contribute to over nutrition, such as fried and sugary foods, tend to be high in calories and fat but low in other nutrients.

1.4.5.2. SIGNS AND SYMPTOMS

The signs and symptoms of malnutrition depend on the type. Being able to recognize the effects of malnutrition can help people and healthcare providers identify and treat issues related to under or over nutrition.

Under nutrition

Under nutrition typically results from not getting enough nutrients in your diet. This can cause:

- Weight loss
- Loss of fat and muscle mass
- Hollow cheeks and sunken eyes

- A swollen stomach.
- Dry hair and skin
- Delayed wound healing
- Fatigue
- Difficulty concentrating
- Irritability
- Depression and anxiety

Over nutrition

The main signs of over nutrition are overweight and obesity, but it can also lead to nutrient deficiencies.

Research shows that people who are overweight or obese are more likely to have inadequate intakes and low blood levels of certain vitamins and minerals compared to those who are at a normal weight. This is likely because overweight and obesity can result from an overconsumption of fast and processed foods that are high in calories and fat but low in other nutrients.

1.4.5.3. COMMON CAUSES OF MALNUTRITION

Malnutrition is a worldwide problem that can result from environmental, economic and medical conditions. The WHO estimates that over 460 million adults and 150 million children are undernourished, while more than two billion adults and children are overweight or obese. Common causes of malnutrition include:

Food insecurity or a lack of access to sufficient and affordable food: Studies link food insecurity in both developing and developed nations to malnutrition

Digestive problems and issues with nutrient absorption: Conditions that cause malabsorption, such as Crohn's disease, celiac disease and bacterial overgrowth in the intestines, can cause malnutrition.

Excessive alcohol consumption: Heavy alcohol use can lead to inadequate intake of protein, calories and micronutrients.

Mental health disorders: Depression and other mental health conditions can increase malnutrition risk. One study found that the prevalence of malnutrition was 4% higher in people with depression compared to healthy individuals.

Inability to obtain and prepare foods: Studies have identified being frail, having poor mobility and lacking muscle strength as risk factors for malnutrition. These issues impair food preparation skills.

1.4.5.4. PREVENTION AND TREATMENT

Preventing and treating malnutrition involves addressing the underlying causes. Government agencies, independent organizations and schools can play a role in preventing malnutrition. some of the most effective ways to prevent malnutrition include providing iron, zinc and iodine pills, food supplements and nutrition education to populations at risk of undernutrition. In addition, interventions that encourage healthy food choices and physical activity for children and adults at risk of overnutrition may help prevent overweight and obesity. You can also help prevent malnutrition by eating a diet with a variety of foods that include enough carbohydrates, proteins, fats, vitamins, minerals and water. Treating malnutrition, on the other hand, often involves more individualized approaches. If you suspect that you or someone you know is undernourished, talk to a doctor as soon as possible. A healthcare provider can assess the signs and symptoms of undernutrition and recommend interventions, such as working with a dietitian to develop a feeding schedule that may include supplements.

Prevention of malnutrition

- Use of modern agricultural techniques to increase the agricultural production.
- Proper education to peoples regarding importance of food
- Enrichment of food
- Fortification of food
- Genetic engineering for the development of new varieties eg- golden rice
- Government projects to provide healthy food to infants and pregnant woman
- Staple food should available at very cheap rate
- Common people should adopt rotation in food
- Use of probiotic microorganism in food
- Global public health and disease control measures.

1.5 SOCIOLOGY AND HEALTH

1.5.1 SOCIO CULTURAL FACTORS RELATED TO HEALTH AND DISEASE

Social and cultural factors are strongly associated with various life processes of the human being. They exist in political and managing contexts and even in the perspective of health and disease. The disparity of factors leads to the development of different strategies to allow greater equity in health care. Sociocultural characteristics have found fertile ground in terms of the applications and adaptations necessary in the field of collective health. They are forms of knowledge that aid in the interpretation and questions concerning political anthropology and directed to the area of health.

Social subjects undergo constant changes and interactions that must be considered in order to understand how complex relationships occur. These sociocultural aspects are embedded in several health areas, especially those most stigmatized by society, such as Human Immunodeficiency Virus (HIV) infection and mental illness. Understanding these factors may lead to better outcomes in relation to health directives and even treatment. In this context, some social determinants of health (DSS) are included that are related to each other in a very important way in public health Relation, behaviour, culture and which socially vulnerable populations have a deficit. Some of these factors, such as living conditions, work environment, housing conditions and hygiene should be considered. Population- wide policies are needed to promote behaviour change through educational programmes, the media, and access to healthy food as well as social cohesion.

Path to improved health

Social determinants of health are the conditions that we live, learn, work, and play in. These conditions can influence the health and well-being of you and your community. They can include things like your education level, your exposure to violence, the way your community is designed, and if you have access to health care. These factors affect your ability to take part in healthy behaviors, and this affects your health.

Here are some examples of major social factors that can influence your health.

1. Education

Your education level can have an effect on how healthy you are. Education gives you the tools you need to make good decisions about your health. People with more education are more likely to live longer. They are more likely to participate in healthy activities like exercising and seeing their doctor regularly. They are less likely to participate in unhealthy activities, such as smoking Education also tends to lead to higher-paying jobs. These often come with benefits, such as health insurance, healthier working conditions, and the opportunity to make connections with other people. All of these things add up to better health.

2. Income

The amount of money you make has an effect on your health. People with higher incomes tend to be healthier and live longer than people with low incomes. They are more likely to live in safe neighborhoods. They have more access to grocery stores and healthy foods. They usually have more access to safe spaces for exercise or other activities. People with low incomes are more likely to live in a community of poverty. They are more likely to face situations that can lead to poor health. These can include unsafe housing, more challenges in getting healthy food, and less time for exercise or physical activity. Having a lower income also affects your ability to have affordable health insurance and health care. This can affect how often, if ever, you go to the doctor. This can have a direct effect on your health.

3. Housing

Where you live has a significant impact on your health. People who are continually exposed to poor living conditions have a higher risk of developing health problems. Conditions such as pests, mold, structural problems, and toxins in the home can all affect your health. It is important that your home is safe and free from hazards like these. Housing can contribute to your health when it provides you with a safe place to be. Neighborhood conditions are an important part of housing and can also affect your health. A neighborhood that is free from violence, crime, and pollution gives children and adults a safe place for physical activity. A home that is close to grocery stores makes it easier for families to buy and eat healthy foods. A thriving neighborhood also offers employment, transportation, and good schools. Being surrounded by all of these things helps you live a

healthier life.

4. Access to health care

How easy it is for you to access health care is a big determinant of your health. If you have health insurance, you are more likely to visit your doctor on a regular basis. These trips can include screenings and preventive care that keep you from developing chronic disease. But not everyone has access to health insurance or easy access to care. Some people don't have transportation to go to the doctor. Some can't afford it, while others speak a different language. All of these things can prevent someone from getting the health care they need and delay treatment of preventable problems. Not being able to get health care can have a huge impact on your health.

Things to consider

Above are just a few of the social determinants of health that can affect your health and well-being. There are many others. They include:

- Access to nutritious foods.
- Access to clean water and working utilities (electricity, sanitation, heating, and cooling).
- Early childhood social and physical environments, including childcare.
- Ethnicity and culture.
- Family and other social support.
- Gender.
- Language and other communication capabilities.
- Occupation and job security.
- Sexual identification.
- Social status (how integrated or isolated you are from others).
- Social stressors, such as exposure to violence.
- Socioeconomic status.
- Spiritual/religious values.

Any and all of these factors play into your health on a daily basis. It is important to understand how these things affect your health so you can take steps to improve them and improve your health.

1.6 IMPACT OF URBANIZATION ON HEALTH AND DISEASE

URBAN: The word 'urbane' means fashionable living, wide acquaintance with things & people and political manner of speech.

Urban area: Area with a high density of population. In the context of India, it is defined as all places with a municipality, corporation, cantonment board or notified town area committee, etc.

Urbanization: Urbanization involves a physical change in which increasing proportions of populations live in urban settings. The movement of people to cities is one of the dominant characteristics of population change of 21st centuries.

Increase in urban population is determined by three factors:

1. Natural increase (through birth).
2. Rapid migration from rural to urban, for better employment opportunities, attraction of better Living & availability of social services like education, health, transport entertainment etc.
3. Inclusion of new areas under 'Urban'

1.6.1. ENVIRONMENTAL HEALTH IMPACTS ASSOCIATED WITH RAPID URBANIZATION

The effect on health of urbanization is two edged. On the one hand, there are the benefits of ready access to healthcare, sanitation, & secure nutrition whilst on the other urban health hazards & risks are substandard housing, overcrowding, air pollution, insufficient or contaminated drinking water, inadequate sanitation, solid waste disposal services, vector borne diseases, industrial waste, increased motor vehicle traffic, stress associated with poverty & unemployment etc.

The issues of the urbanization can be covered by following points

1. **Infectious Diseases Prevalence:** Diarrheal diseases and typhoid are caused from polluted water. Vector borne diseases due to unhygienic and unsanitary residence of the people specially are urban poor. Presence of respiratory diseases due to indoor and outdoor air pollution. Other communicable diseases like TB, Hepatitis, and HIV/AIDS etc. are prone

due to environmental conditions. Infectious disease prevalence is also in rural but what makes urban area prone is due to polluted water as well as crowd and high population density in which risk is high of epidemics. Moreover urban poor do not have much approach to clean water.

2. **Non Communicable Disease Prevalence:** Non communicable disease are going to be highly prevalence in the urban areas due to pollution, tobacco use, alcohol use, lack of physical exercise, dietary practices as people in the urban areas are supposed to have more junk and western high calorie food which leads to metabolic syndrome which is a risk factor for heart diseases, cancers diabetes etc. It is estimated that due to urbanization from 2000 to 2030 global diabetic prevalence will be increased from 2.8 % to 4.4 %.

3 Substance Abuse: Substance abuse is one of the most common problems in urban area both in high class and slum teenager and children. Due to trendy life style in the cities teenagers are especially prone to this. Street children use them to get rid of hunger. Other high class children use it as a tool for modernization, fashion and style. Some time it is also due to their peers. In some adults it's due to the result of frustration, unemployment.

4. **Road Traffic Accidents, Injuries, Violence and Crime:** Due to increased number of population in urban area there is increased number of the vehicles too which increases also in increased number of road traffic accidents. Reckless driving, disobeying traffic rules, drinking and driving cause it more higher. It is said that by the year 2020 Road Traffic Accidents will be in the 3rd rank in the causes of disease burden in the developing world. This results in serious injuries and also disabilities. We also cannot avoid violence and crime from the cities. As increase in the urban population, the rate of unemployment also gets high. Due to high expense to cities in compared to rural area, it's very difficult to stay in city without any income or low income. So, people are involved in violence and crime.

5. **Housing, Security and Sanitation:** Most of the urban poor live in slums which are unregulated and overcrowded, and are often exposed to hazards, such as steep hillsides subject to landslides, riverbanks and water basin locations subject to flooding, or sites near industrial hazards. Inadequate, overcrowded or deteriorating housing in informal settlements, increases the health risks from environmental hazards, violence and crime, and is associated with injuries, respiratory problems, infectious diseases, and mental health problems and they are also prone to nutritional deficiency.

6. **Water, Food and Nutrition Crisis:** As urbanization rapids there is for sure to be the lack of safe drinking water. As water mining is continuous to fulfill the demand of water supply which is a non-renewable source of aquifer. After water crisis goes up then there will be food crisis as it needs tons of water to produce tons of food and 70% of water goes to agricultural purpose. And even industries will be harmed as they consume 20% of water. Food crisis starts hitting the urbanization which directly affects the nutrition of the dwellers. As scarcity of the food leads to scarcity of nutrients because food is the main source for the people to get nutrition and nutrition crisis is the cause of other morbidities and mortalities of the people.

7. **Indoor, Outdoor Pollution and Climate Change:** Out of urban air pollutants, fine particulate matter, mostly from vehicle and industrial fuel combustion, has the greatest effect on human health. Worldwide fine particulate matter is estimated to cause about 8% of lung cancer deaths, 5% of cardiopulmonary deaths and about 3% of respiratory infection deaths. These are the leading causes to non-communicable chronic diseases. Actually, this indoor and outdoor air pollution is also main cause for the climate change because in cities during such pollution greenhouse gases are highly emitted. Due to climate change there is high vulnerability for the coastal urban region. It is also estimated that urban temperatures may be as much as 5-11°C higher than in surrounding rural areas due to the greater heat absorption of dense urban built spaces and lowered capacity for evaporative cooling.

8. **Social Services and Environment:** A city's social environment has much to do with individual health. It can have positive effects or negative effects. The negative social environment may be health damaging behavior like drug abuse and violence and high levels of social stressors such as social isolation and extreme poverty. Urban slums live close to the health care facility but have less access to it due to expensive private practitioners and they are supposed to get low quality of care. If we happen to see in the literatures and study the low and middle income countries people are less urbanized majority of the people live in the rural areas and majority of the problem is also there. In case of developed countries they are highly urbanized and different health and nutrition indicator shows that they are in the better position than developing countries in every sector. So, this is also fact that developed countries though they are urbanized they have less infectious diseases like water borne, food borne or vector borne. Their nutritional

status is also relatively high. They have very low maternal and neonatal mortality rate. Their life expectancy is also high. They have access to better health care. They are economically empowered and literacy rate is also high.

1.7. POVERTY AND HEALTH

Poverty is defined as "a condition characterised by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information."

It is clear that if people do not have access to these essential requirements then they are without a doubt living in poverty. Many factors tie in with this, including poor diet, poor living conditions, lack of education, and limited access to medical assistance and also the stress caused as a result of living in poverty. Looking overseas, the relationship between wealth and health is even more prominent. People living in poverty have little or no income and as a result suffer severe distress trying to obtain the basic essentials in order to survive. One major factor to consider when discussing the effect of poverty on health is diet and the availability of food. The diet of those in the lowest socio-economic groups is likely to include insufficient levels of fruit and vegetables and to consist largely of high-fat intakes. High fat fast-foods provide a cheap source of food for poor people and consequently it often becomes the basis of their diet. As a result there is an increase in the cases of obesity, heart disease and cancer. Also these people have to live without basic sanitation; their water is unclean, unsafe and is often a probable source of infection. Infection is a common occurrence among undernourished and poor people. Dismal living conditions, overcrowding in shelters and a lack of immunization and screening programs all add to the risk and development of infection amongst the poor.

On the topic of child mortality, poverty is considered as the root of high rates of child mortality as well as morbidity. It is a known fact that children who spend a large amount of their childhood in poverty experience poor health at the time and in later years. This is as a result of their terrible living conditions, and severe shortage of basic materials needed for a basic standard of living. The list of problems these children face is a long,

painful and tedious one. Such issues include poor nutrition, exposure to terrible living conditions, no access to immunization programs, low life expectancy, limited and usually no access to primary health care. Furthermore, over sixteen percent of children under the age of five lack adequate nutrition and thirteen percent of all children have never been to school.

Another factor directly linked to poor health is the lack of access to medical care and insurance to help cover the costs of health care endured by people of the lowest class. This factor jeopardizes the ability of many low-income earners to maintain their health. Low-income workers are less likely to be offered insurance as an employment benefit in comparison to workers with a higher income. With no health insurance, the poor have little or no access to immunization programs, cancer screening and tend not to have regular check-ups by their General Practitioner.

The poverty stricken are forced to forgo or delay medical assistance until absolutely necessary, seeking assistance when in most cases it has become too late and their disease has advanced to a critical stage, often the poor never receive the help they needed and end up dying from an illness they could have been saved from with the right medical attention. This culminates in shorter life expectancy and increased cases of chronic and life threatening illnesses amongst the poor.

In relation to housing and living conditions, the effects of poverty on health can be seen clearly. Poor people are at a higher risk of dying during the winter months as a result of inadequate heating in their homes and in some cases a total lack of heating facilities. Also low-income people who are lucky enough to have a house tend to live in older homes, which often don't comply with new health and safety regulations and people can find themselves so substance such as lead paint and asbestos, which causes developmental problems in children and can cause cancer. Inapt living conditions also give rise to problems such as inadequate sanitation, no access to pure drinking water and consumption of substandard food. From this it can be seen that diet, child mortality, housing and living conditions are all interconnected. They are all involved in a viscous cycle stemming from poverty which affects the wellbeing of mankind.

Stress is another effect on health that may not initially spring to mind. However there is increasing evidence that the burden and exertions of living on a low income demonstrates itself in biological changes in the body. During times of high stress related which trying

to survive on dismal wages, our bodies react by triggering a flood of stress hormones that affect the immune system and cardiovascular system. This enables the human body to deal with immediate threat by increasing the heart rate, redirect blood to our muscles while also heightening anxiety and alertness. To conclude, it is very clear that poverty has huge implications on the welfare of mankind. This is ironic considering poverty is a sensitive subject but yet not enough is being done to target the problem. Factors such as diet, child mortality, living conditions stress and inadequate health insurance all have a negative effect on the health of a poor person. Increased education, better living conditions, immunisation programs, clean water and more government funding would all create a much healthier population and a safer environment.

1.8 HEALTH AND HYGIENE

The word hygiene has been derived from Greek word 'Hygicons' which means healthful. However hygiene is also termed as 'Hygia' which means the goddess of health. In modern world it means **the art of living**.

Maintaining personal hygiene is essential for more than one reason; social, health, personal, psychological or just as a way of life. Maintaining a good standard of hygiene helps keep infections, illnesses and bad odors at bay. The importance of hygiene should be taught from an early age to help cultivate good habits. Personal hygiene can be defined as an act of maintaining cleanliness and grooming of the external body. Maintaining good personal hygiene consists of bathing, washing your hands, brushing teeth and sporting clean clothing. Additionally, it is also about making safe and hygienic decisions when you are around others.

One of the most fool proof ways to safeguard yourself and others from illness is through good personal hygiene. This means cleaning your hands, especially, but additionally your body. Good personal hygiene not only enhances your overall appearance, its importance is directly related to prevention of diseases, infections, and unpleasant odors.

1.8.1 PERSONAL HYGIENE

1. Hand hygiene

The issue: Hands are the dirtiest part of the body because they touch many dirty things during the day. The main problem is touching your eyes, nose, mouth or wounds with dirty hands because, through these areas of the body, bacteria gets inside it and weakens its immunity or infects it with a disease.

Why you need hand hygiene? Hand washing reduces the number of unhealthy bacteria on the hands and lowers the chances of bacteria getting inside the body.

How to maintain good hand hygiene? Wash your hands thoroughly with water and soap. Scrub the palm, between fingers, under fingernails and up until the wrist. When done, rinse your hands with clean running water and dry them out with a clean towel.

2. Nail hygiene

The issue: Toe and fingernails need regular maintenance because dirt accumulates under the nails, from where, it gets inside the body through food or by touching your eyes, nose, and mouth. And from an aesthetic point of view, the black line under the fingernails looks embarrassing.

Why you need nail hygiene? Finger nails hygiene reduces the risk of possible infections after touching your mouth, eyes or nose with your hands.

How to maintain your fingernails? While washing your hands, rinse the buildup from under the fingernails, trim them with clippers or scissors, and don't bite them. Don't share your nail hygiene tools with others.

3. Face hygiene

The issue: Maintaining face hygiene means washing up your forehead, cheeks, and eyes. If you don't do that, the skin on the face covers with a layer of sweat and dust that clogs out the skin pores which decreases its ability to breathe. As a result, the skin on your face looks tired, dry or develops pimples. Another poor face hygiene characteristic is eye discharge that accumulates around the eyes after sleeping.

Why do you need to maintain your face hygiene? Face washing prevents clogging out the pores on the skin and maintains the it fresh during the day while reducing acne development.

How to maintain your face hygiene? To eliminate the eye discharge accumulated during the night, wash your face first thing in the morning. During the day, wash your face whenever you feel that the skin becomes sweaty and dirty.

4. Oral hygiene

The issue: The humidity level in the mouth is high which makes it a perfect environment for bacteria development. At the same time, this bacteria in the mouth feed itself with food residues that stuck on the surface of the teeth, tongue, and gums after breaking down the food. The more bacteria is present in the mouth, the higher are the chances of developing oral diseases such as tooth decay, cavities, gingivitis, and bad breath.

Why do you need to maintain good oral hygiene? Oral hygiene activities help to reduce the number of unhealthy bacteria in the mouth.

How to maintain your oral hygiene?

1. Brush your teeth at least two times per day-once in the morning and once before bedtime.
2. Floss between the teeth.
3. Use an antibacterial mouthwash.
4. Use a tongue scraper or the toothbrush to clean the white coating from the surface of your tongue.
5. Visit a dentist every 6 months for a check-up.

5. Body hygiene (skin care)

The issue: The skin of the body is constantly releasing sweat and dead skin cells, which develops unpleasant odors, scabies, pimples, and ringworms. These body discharges also stick onto the inner side of clothes increasing these negative hygiene consequences on the body. Why maintain body hygiene? Good body hygiene helps to control the release of unpleasant body odors and skin irritation.

How to maintain your body hygiene? At least once per day or two, take a shower using soap or body gel. After that dry out the body with a clean towel, wear clean underwear and fresh clothes.

6. Hair hygiene

The issue: The hair produces oils that naturally feed it with healthy nutrients to maintain it healthier. However, an excessive release of oil on the hair accumulates dead skin, dirt, and dandruff on the surface of the scalp, which makes the hair look dirty.

Why maintain hair hygiene? Hair hygiene prevents releasing too much hair oil, washes away the dry skin and dead cells from the surface of the scalp. This makes your hair look clean, fresh and attractive.

How to maintain hair hygiene? Wash your hair with shampoo, once per day or two. While washing the hair, massage the shampoo into the scalp to eliminate the dead skin cells, excessive oil and dirt. When you're done rinse well with clear water and apply conditioner if you want to make your hair smoother.

7. Ear hygiene

The issue: Ear wax accumulates in the ear canal, which attracts dust, looks embarrassing, and leads to hearing loss.

Why maintain ear hygiene? Cleaning the ear wax prevents embarrassment and hearing loss.

How to maintain ear hygiene? The best way to clean the ear wax is after taking a shower. After showering, the wax melts and is easily removed from the ear. To remove the wax from the ear canal, use a cotton stick. Don't use it too often, though, as it tends to push the wax inside the ear tube. Use cotton sticks with caution. If the ear wax has plugged your ears and you lost hearing, consult a doctor.

8. Foot hygiene

The issue: Wearing shoes all day long promotes sweating which releases unpleasant smells, develops scabies and fungal growth.

Why to maintain foot hygiene? Cleaning your feet prevents the release of the awful odor and fungal growth.

How to maintain foot hygiene? Wash your feet with soap and make a habit to air out your shoes from time to time.

9. Food hygiene

The issue: One of the worst types of poisonings is food poisoning because its severity may lead to feeling weak, throwing up, or even death.

Why to maintain food hygiene? Consuming healthy food prevents you and your family members from getting food poisoned.

How to maintain ear hygiene?

1. Pay attention to the expiration date when you buy packed food.
2. Wash your food before consumption.
3. Store food under appropriate temperature in the fridge.
4. Maintain the cleanliness in the place where you handle and prepare food.

10. Respiratory hygiene

The issue: During the cold and flu season, your coughs and sneezes may spread bacteria through the air, which may infect other people around. other people.

Why do you need to be aware of respiratory hygiene? It prevents spreading the disease further to mouth whenever you feel the urge of sneezing or coughing. After coughing, wash your hands

How to maintain respiratory hygiene? If you don't feel well, carry a cloth with you to cover your with soap and water or use a hand sanitizer.

11. Sickness hygiene

The issue: If you don't feel well and continue visiting the school or workplace you may infect your colleagues as well.

Why should you be aware of sickness hygiene? Show your respect to the health and safety of your colleagues.

How to maintain sickness hygiene? If you got sick, stay home and avoid any crowded places. Treat yourself before you can join any social gatherings.

12. Clothes hygiene

The issue: You wear two layers of clothing. The internal layer of clothes is the under wears, pants, vests, and a T-shirts. These types of clothes are right next to your skin that absorbs sweat and dead skin cells, which produces unpleasant odors.

Why to maintain your clothes clean? Wearing clean clothing reduces the chances of bacteria from the inner side of the cloths to land on the skin of the body. This extends the time in which your body stays clean.

How to maintain your clothes clean? Change clothes for clean and fresh ones. Use detergent to wash the dirty clothing containing stains, food, vomit, or bad smell. After that, dry them out and, if possible, iron them. The high temperature kills most of the bacteria existing on the clothes.

1.8.2. AVOIDABLE HABITS

1. Not Drinking Enough Water
2. Eating Late at Night
3. Not Getting Enough Exercise
4. Not Sleeping enough
5. Eating Too Much Sodium
6. Choosing Foods Because They "Sound Healthy"
7. Eating Lunch at Your Desk
8. Smoking
9. Drinking Alcohol (in moderation)
10. Not taking care of your mental health
11. Not protecting your hearing